Annual Review

and

Opportunity Number

For 1917

of

The Record and Guide

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INTRODUCTION

IN THE preparation of the annual review number for 1916, the Record and Guide took occasion to consult the leaders of opinion in the real estate and building market as to the market's probable course in 1917. Among the experienced and professionally prominent men whose views are presented, the belief was found to prevail that all the requisite conditions—general and local—are present for a great revival of activity. According to the testimony of experts, opportunities for investment in Greater New York real estate, improved and unimproved, have never been more promising than they are at the present time.

As yet, these opportunities have not been publicly canvassed. The Record and Guide therefore undertook to give a comprehensive survey of them in its annual review number. They are set forth in a systematic discussion, embracing every distinct section of the city, each separate kind of building and every phase of the real estate and building market.

Nearly one hundred and fifty brokers, agents, operators, speculative builders, contractors, manufacturers of building materials, officers of financial institutions, and other professional men have contributed, in the form of original articles or interviews, to this special issue of the Record and Guide.

Notable price movements are bound to happen in New York real estate in the immediate or very near future. Even if the city's population and industry were to remain stationary, real estate prices must advance under the influence of the country's accumulating gold supply, the downward tendency of interest rates on mortgages, the high cost of materials and labor, the excellent renting conditions disclosed during the past renting season, and an inevitable shifting of investment capital as the prices of stocks and bonds reach disproportionately high levels. But population and industry are advancing by leaps and bounds, because the increased purchasing power of the country is augmenting the prosperity of the city's commerce and industry, because new banking and tariff laws are adding their influence in the same direction, and because new water transportation is extending old and opening up new markets.

Nothing can be more certain than that the sum total of real estate values in New York City must be tremendously increased. Meanwhile, the distribution of values will be affected by such local influences as the new Building Code, the new Zoning Law, and the new rapid transit extensions.

It is safe to say that never before have the conditions affecting the New York real estate and building market been so complex, so interesting and so full of promise to those who know how to read the signs.

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REAL ESTATE RECORD AND BUILDERS GUIDE.

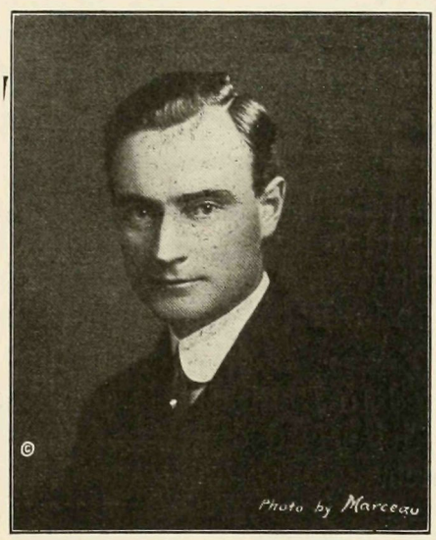
NEW YORK, FEBRUARY 3, 1917

SOME OF THE PROBLEMS FACED AND OVERCOME BY THE PRESENT CITY ADMINISTRATION

By HON. JOHN PURROY MITCHEL, Mayor, City of New York

WHEN the present administration took office on January 1, 1914, the gross city debt was $1,225,000,000. The appropriation necessary for debt service was mounting rapidly. It was $53,000,000 in 1914, $59,000,000 in 1915, $63,000,000 in 1916 and is over $69,000,000 for 1917. The city was rapidly approaching its constitutional debt limit and vigorous steps for retrenchment were imperative.

As a first step toward retrenchment, authorizations of corporate stock have been kept down to a minimum. Such authorizations averaged only $13,000,000 annually for 1914, 1915 and 1916 as against an average of $88,000,000 authorized each year under Mayor Gaynor and an average of $102,000.000 authorized each year under Mayor McClellan.



HON. JOHN PURROY MITCHEL.

The second step toward retrenchment was the adoption of the "Pay-as-you-go" policy, which was enacted by a resolution of the Board of Estimate on September 11, 1914, and was written into the Charter by the Legislature of 1916. Under this plan an annually increasing proportion of the costs of permanent improvements of the non-revenue producing class is defrayed from the tax budget. Thus one-quarter and one-half of the costs of such improvements, authorized in 1915 and 1916, respectively, as have been financed were charged against taxation in the year following. Three-quarters of the financial costs of such improvements authorized this year will be paid for by taxation. The remaining portion of the costs of these improvements authorized in 1915, 1916 and 1917 was or will be defrayed through certificates of indebtedness maturing serially in from one to fifteen years. All of the financed costs of non-revenue producing improvements authorized in 1918 and thereafter will be paid for by taxation in each succeeding year's budget.

This plan has put a stop, so far as non-revenue producing projects are concerned, to the expensive method of borrowing on long term bonds. Every dollar borrowed on a 4½ per cent. 50-year bond costs approximately $2.69 for repayment, and swells the annual appropriation for debt service. While the "pay-as-you-go" policy will tend to increase the tax budgets of the immediate future, it has put New York beyond question upon a sound financial basis and will give to the officials of ten years hence a city with a rapidly shrinking debt and an unimpeachable fiscal policy.

The effect of the new policy upon the budget for 1916 was to require an appropriation of $1,678,320 for the redemption of the first installment of serial bonds and an appropriation of $350,000 for one-fourth of the non-revenue producing outlays in 1915 on account of authorizations subsequent to September 11, 1914. In the budget of 1917 the new policy required an appropriation of $2,666,660 for the redemption of installments for serial bonds, an appropriation of $98,989 for one-fourth of the non-revenue producing outlays in 1916 on account of authorizations prior to the first of that year, and an appropriation of $439,081 for one-half of the non-revenue producing outlays in 1916 on account of authorizations subsequent to the first of that year. The "pay-as-you-go" policy tends to check the promiscuous over-authorization of non-revenue producing projects, which has been one of the chief causes of our present large municipal debt and high tax rate.

The third step toward retrenchment was the effecting of economies in the annual tax budget. Effective control for purposes of economy exists over only about 25 per cent. of the budget, including the departments and offices under the Mayor, the Comptroller, the five Borough Presidents and the Board of Estimate. Outside of this field the Board of Estimate is either deprived of control by provision of law or is so hampered by restrictive provisions that it is deprived of effective control.

Thus in the budget for 1916, 54.69 per cent. was completely mandatory (25 per cent. by reason of legislation and 29.68 per cent. by reason of prior contract obligations); 3.90 per cent. was appropriated for positions as to which the compensation was fixed by law, although the number of incumbents was discretionary; .11 per cent. was appropriated for salaries which were mandatory during the incumbents' terms; 3.56 per cent. was appropriated for items as to which any reasonable expenditures were mandatory, the limit being determinable only by court action; 13.08 per cent. was appropriated for positions required by law as to which the compensation was discretionary; leaving only 24.66 per cent. of the budget as to which the Board of Estimate had complete discretion to effect economies.

The appropriations for the departments under the Mayor, Comptroller, Borough Presidents and Board of Estimate totaled $73,314,940.04 in the budget for 1914. In preparing the budget for 1915 this amount was cut to $71,781,382.02, a reduction of $1,533,558.02. In preparing the budget for 1916 this amount was further reduced to $70,189,035.75, a reduction below 1915 of $1,592,346.27.

The process of reduction and economy has now been carried about as far as it can go under existing statute law without the impairment of service. In spite of increases in salary in the present budget to 14,800 policemen, firemen and members of the uniformed force of the Street Cleaning Department and to 5,700 other city employees, amounting in all to $1,147,180.80, the total of the appropriations for the above departments under the control of the Board of Estimate is $71,474,359.68, represented still a decrease of $1,840,580.36 below the appropriations for this group in 1914.

The merit of these increases in salary will not be seriously disputed. In the spring of 1915 a joint investigation conducted by the Bureau of Standards of the Board of Estimate and by the Bureau of Municipal Research indicated that the minimum upon which an unskilled laborer could support himself, his wife and three children of school age in New York City was $840. A supplementary investigation conducted in connection with the preparation of the present budget indicated that the rise in the prices of necessaries of life since 1915 demanded an increase in this minimum

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wage of at least 20 per cent. A recent report of the Federal Department of Labor indicates that over 250 of the largest private corporations in the country have granted increases to their employees averaging 10 per cent. The City could not afford, under these conditions, to refuse to do what appeared to be an economic necessity.

Other important increases in the budget for 1917 include $1,282,580 for widows' pensions. This law was passed by the Legislature and public opinion appears to endorse the outlays necessary under it. The Board of Education received an increase of $1,564,465.96. It had received a little less money last year than in 1915, and it was not possible with the annual increments to teachers' salaries and the legitimate expansion of the City to avoid the increase for this year, particularly in view of public demand for the elimination of part time. There was also an increase for private charitable institutions of $98,560, made necessary by an increase in the number of dependents committed by the City to such institutions. The City was compelled to include $1,000,000 more in 1917 than in 1916 for deficiencies in taxes which had proved uncollectible, and there was a compulsory increase of $6,531,358.84 in debt service due to former contract obligations with the City's bondholders. This brings the present budget up to $211,-114,136.82, or $12,132,981.01 more than last year's budget with the direct State tax eliminated.

This administration has attacked the most difficult of all the governmental problems of the City, namely, the hampering relations of the City with the State. For the first time in its history the City has protested against the practice of making huge State appropriations for purposes in which New York City does not share. The legislative committee appointed to investigate the claim that the City was made to bear the burdens of the State unjustly returned to Albany to urge relief for the City. The administration requested legislation (1) giving the City effective control over all expenditures of the City and county government; (2) transferring to the State the regulatory expenses of the Public Service Commission; (3) requiring the State to contribute to the training of teachers in New York City as it does to up-State normal schools; (4) transferring to the City the proceeds of the stock transfer tax on transfers made in the city; (5) giving to New York a portion of the license fees collected from motor vehicles in the city, and dividing with New York the proposed extra excise tax; (6) relieving New York City from the present injustice in regard to the construction and maintenance of highways in other parts of the State; (7) turning all of the fees of the Sheriff of New York County over to the City treasury.

Constitutional amendments were requested providing that all bills as to Counties in New York City should be submitted to the Mayor's veto, and that County Clerks, Registers and Sheriffs in New York City should no longer be continued as constitutional officers. Certain consolidations of county offices were also requested.

Not all of the relief demanded and urgently needed has been given, but for the first time the facts are understood. As a result of these efforts the State has already made partial reparation by legislation which will shortly transfer a tax burden of approximately $2,000,-000 from the City to the State. The legislature acceded to the request of the City that the State assume the regulatory expenses of the Public Service Commission and turn over to New York City a portion of the license fees collected from motor vehicles in New York City. It also passed the bill turning all the Sheriff's fees of New York County into the City treasury and repealed the law providing for State aid for County roads. This is the first step in the program of City relief already crystallized and defined, which should mean an eventual reduction of $12,000,000 a year in the tax burden now resting upon the City's real estate.

This campaign for retrenchment has been conducted without impairing the work of the various city departments which on the contrary have rendered increased service to the public. The records of the Detective Bureau of the Police Department show a reduction of almost 30 per cent. in the number of felonies and misdemeanors in 1916 as compared with 1914. On the other hand, the percentage of convictions obtained through the work of the Police Department has reached the highest point, 78.94, in the history of the department. There has also been a marked increase in the recovery of stolen property. The work of the Police Department has been conducted in a manner which has won public confidence and for almost the first time in its history there has been no scandal connected with its administration.

There has been no intention or desire to suppress any scandal which might have developed in any department of the City government. Over 200 complaints of various alleged irregularities in different branches of the service have been painstakingly investigated in a vigorous manner by the Commissioner of Accounts. In many instances these investigations have resulted in the dismissal of city employees or in criminal prosecutions.

The fire loss has been reduced to the lowest per capita in the City's history, due mainly to the systematic extension of fire prevention work.

The death rate in the City has been reduced, and in spite of the epidemic of poliomyelitis there has been a reduction in infant mortality.

For the first time in the history of the City a systematic campaign for public health education has been undertaken and vigorously conducted.

The Charities Department has been freed of the paralyzing influences which for years continued its institutions and its methods as relics of a bygone age. The institutions on Randall's Island, which were a disgrace to the City, have been thoroughly reorganized. Definite standards and ideals have been set up for the caring of city charges in private institutions. A clearing house has been established for mental defectives and the institutions under the Commissioner of Public Charities have provided for the largest average of inmates in the history of this city.

Recognizing the vital need of maintaining the commercial supremacy of New York, this administration has devoted particular attention to the City's port and terminal facilities. It has already built 19 new piers and 20 new pier extensions, with the result of adding one and one-quarter million square feet to the city's pier area. Before the end of next year new long piers on the west side of Manhattan and in South Brooklyn will also be completed.

Efforts have been made to secure the construction and operation of a terminal railroad in South Brooklyn to connect the Brooklyn water front with the great trunk railroads of the country and needed legislation has been obtained. Although unexpected difficulties have been encountered in working out an operating agreement between the city and the railroads, I have high hopes that these difficulties may be overcome in the near future.

Another great public improvement, which is on the way to accomplishment, is the removal from the City's streets of the west side tracks. A tentative agreement has been reached with the New York Central by which these tracks will be taken from the surface and be carried through a tunnel under Riverside Park. This solution will not only remove a serious and long continued menace to life and limb, but it will also add to the scenic beauty of Riverside Drive by permitting the park to be extended to the water's edge.

In 1914 the City obtained legislation authorizing the Board of Estimate to divide the City into districts and to regulate the height of buildings, area of courts and open spaces and the location of trades and industries. After an exhaustive investigation the Board of Estimate has recently adopted a resolution districting the City by a method which will insure greater stability to real estate values, will tend to prevent undesirable congestion and will preserve the attractiveness of residential portions of the City.

In the administration of the Street Cleaning Department a new system of snow removal has been worked out whereby the snow is disposed of through the sewers. By this plan the main arteries of traffic are open within a few hours after a storm, whereas under the old carting system the main thoroughfares were frequently not clear for a week after a heavy snowfall. Disposing of snow in this manner costs less and takes only half the time required by the former carting method.

Under the Department of Correction the drug evil

(Continued on page 45.)

REAL ESTATE BOARD OF NEW YORK

(INCORPORATED)

217 BROADWAY

Astor House Building Telephone Cortlandt 5800

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EDWARD C. CAMMANN, Secretary

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It is essential that property owners and those who represent real estate interests should have a non-political organization of practical and professional men to constantly watch and take proper action on legislation, taxation and all propositions which affect real estate.

The strength of any organization lies in its membership.

Any owner of real estate or other person, corporation or company who may be interested in the welfare and advancement of real estate interests in Greater New York should be affiliated with the Real Estate Board of New York.

During the past year 203 bills affecting real estate directly or involving the expenditure of money to be directly or indirectly reflected in local taxation were acted on. Of the 203 bills acted on, 95 were approved and 108 disapproved by the legislation and taxation committee of the Real Estate Board. Of the 108 bills disapproved, 89 were defeated.

The activities of the Real Estate Board extend over a wide area, including matters of taxation, public expenditure and local regulation coming up before the Legislature and of necessary public improvements and of unnecessary, extravagant and wasteful expenditure of public funds.

Every act performed by the Real Estate Board of New York is in the interest directly or indirectly of the entire community.

Your co-operation is invited.

Address

MEMBERSHIP HEADQUARTERS

REAL ESTATE BOARD OF NEW YORK, 217 BROADWAY

ACCOMPLISHMENTS OF THE REAL ESTATE BOARD

New Membership Created to Extend Scope of Work—Organization in Position to Become Factor in Realty Matters

By LAURENCE McGUIRE, President Real Estate Board of New York

THE Real Estate Board of New York represents in its membership the owners of at least half of the assessed valuation of real property in the City of New York. Its officers and members come in constant contact with tenants, real estate owners and operators and are probably better informed as to the exact condition of this great interest than any other organized body in the city of New York. The character of its membership, comprising not only brokers and owners but lawyers, architects, engineers and men in other professions, enables it to take a broader and more comprehensive view of all matters affecting real property than would an organization made up entirely, say, of owners.

The Real Estate Board feels, therefore, that it should take the lead in a movement to get together all the organizations interested in real estate in order that there might be presented at Albany this winter a united body having but one object in mind—the relief of the real estate situation in the city of New York. It was this sort of co-operative work, initiated by the Real Estate Board, that created the Conference Committee, resulted in the passage of the Lockwood-Ellenbogen Bill and gave New York City the Board of Standards and Appeals.

Heretofore there have been conflicting interests, many organizations, at times with conflicting views, so that it was almost impossible for a member of the Legislature to determine exactly what the real estate people in the City of New York actually wanted. This was unfortunate, and now when the character of the Legislature is so pronounced in favor of sane and sensible legislation it is extremely important that a united front be presented.

During the past ten years there has been a constantly increasing tendency on the part of Legislatures—municipal, State and National—to place additional burdens upon real estate either by increasing the functions of government and thus adding to its expense, or by the imposition of drastic and, in many cases, absolutely unnecessary regulations affecting buildings. To such an extent has this gone that in portions of many communities real property, once the best asset a man could have, has practically become a liability. Not only are its owners subjected to constantly increasing taxation with frequent special assessments, but at any time they can be summoned into court for a real or imaginary violation of some city or State regulation and be treated as criminals and fined or imprisoned.

Changes and alterations made this year at the command of officials are made unnecessary next year and, because of new legislation, new orders and new violations are constantly being filed. The tremendous increase in the cost of government in the city is shown by the following table, showing the increase in the eighteen years, 1900 to 1917 inclusive.

Year.	Budget.
1900	$92,397,446.46
1901	99,826,582.67
1902	100,349,619.30
1903	98,641,240.17
1904	108,362,622.29
1905	111,562,409.59
1906	118,650,552.08
1907	130,421,505.66
1908	143,572,266.17
1909	156,545,148.14
1910	163,128,270.37
1911	173,967,835.16
1912	181,090,256.51
1913	192,711,441.16
1914	192,995,551.62
1915	198,989,786.52
1916	212,956,177.54
1917	211,115,016.82

LAURENCE McGUIRE.

In 1900 the population of New York City was 3,437,202. The latest State census figures (Oct. 22, 1915) place the population at 5,006,484.

The budget in 1900 was $92,397,446.46. The 1916 budget was $212,956,177.54, including a State tax of nearly $14,000,000. For 1917 it is nearly $212,000,000 without a State tax. This is an increase of 130 per cent., although the population of the city has increased only 45 per cent.

The increase in the funded debt is still more startling. The gross funded debt is now nearly $1,500,000,000, and if contract liabilities and open market orders and unaudited vouchers are counted, the debt would exceed $1,500,000,000, and after deducting securities held by the Sinking Fund, will still amount to about $1,200,000,000. The debt of the City of New York is three times the combined debt of Boston, Philadelphia, Chicago, St. Louis and Baltimore, although its population is less than their combined population.

There is a constant increase in new functions of government and in those departments of the city government which have to do with social relations the increase in expense is especially marked. The most conservative estimate, for there must be a direct tax next year, places the budget for 1918 at $225,000,000. Other estimates place it higher than this. Each succeeding year the budget will be increased greatly. It is apparent, therefore, that the most drastic measures must be taken in order to prevent municipal bankruptcy and to prevent taxation from becoming confiscatory.

It is for these reasons the Real Estate Board of New York, believing that it is best fitted for the work, has determined to pay even more than its customary attention to expenditures both State and municipal—and especially at Albany during the legislative session, because all State expense falls heavily upon this city. The city's share of this is approximately 73 per cent. Every effort will be made toward economy and every item of expenditure watched closely.

The present is to my mind a particularly opportune time for impressing upon the official mind the need for practical economies. The result of the November elections, I think, proves conclusively that the day of hysteria and of attempting to relieve society of all its evils by fad legislation has passed. Judge Seabury—who in many respects was an ideal candidate and who was believed to be a more popular candidate than Governor Whitman, was decisively beaten by an overwhelming vote. A majority of the real estate people supported Governor Whitman because of his expressed attitude of opposition to legislation that would be injurious to real estate—because they knew he was against the single tax proposition. Very few of the members either of the Senate or Assembly who introduced and passed legislation which has worked such injury to real estate interests in this city were re-elected. The great Democratic majority in both houses of four years ago is gone and there is now a very large majority of Republicans in both houses.

Real estate men who have suffered real injury from unreasonable factory legislation and over-restrictive building laws feel certain that measures to rid them of this legislation will be introduced and passed. They feel certain that measures will also be taken to relieve real estate of some of the burdens of taxation and that the legislature, strongly Republican and largely reactionary will not create new functions of government, but will rather seek new sources of revenue and reduction in the expense of government.

The Real Estate Board of New York, which has taken a leading part in similar movements in the past is actively at work at Albany this winter in the interest of New York City real estate owners.

It is, of course, obvious that relief from the burdens that now rest so heavily upon taxpayers can only be had if taxpayers themselves will cooperate—at least to the extent of lending their moral and financial support. Their lack of interest, of cooperation, has cost the taxpayers of New York City millions of dollars. Is it unreasonable to ask them to take, individually, a moderate amount of interest in their own affairs and to spend a moderate amount of money, so as to make it possible to present a united claim for economy in municipal and State affairs?

If it is admitted that there is so much that needs remedy, that lack of cooperation has stood in the way of real reforms and has cost taxpayers a great deal of money, is it not logical to press upon these property owners the urgent necessity of identifying themselves with the organization that is representative in the field of endeavor which is so closely related to their own interests, so that this organization may grow in numbers, in influence and in the ability to analyze, to investigate, to take steps for doing what everyone agrees should be done?

With this object in view, the Real Estate Board of New York recently took two important steps.

First, it created a new class of membership, to be known as Active-Associate Members. These members may be elected to act on the Board of Governors, and for this purpose the Board of Governors is increased from nine to fifteen, six of whom are to be elected from the new class. These Active-Associate members are to have virtually all the privileges of active members, except that of voting on matters which affect the corporate interests of the board. This was done at a special meeting of the active members on December 8, 1916.

Second, it arranged a campaign to obtain new members and expects to be able to announce at the annual banquet to be held tonight, a generous response in the way of a large increase to its present membership of approximately one thousand.

It seems hardly necessary to emphasize the point that with its Board of Governors reinforced with representative men in technical and professional fields, and its membership greatly enlarged, the Real Estate Board of New York will be better than ever equipped to render effective service both to property owners and to the whole community.

ALBERT B. ASHFORTH

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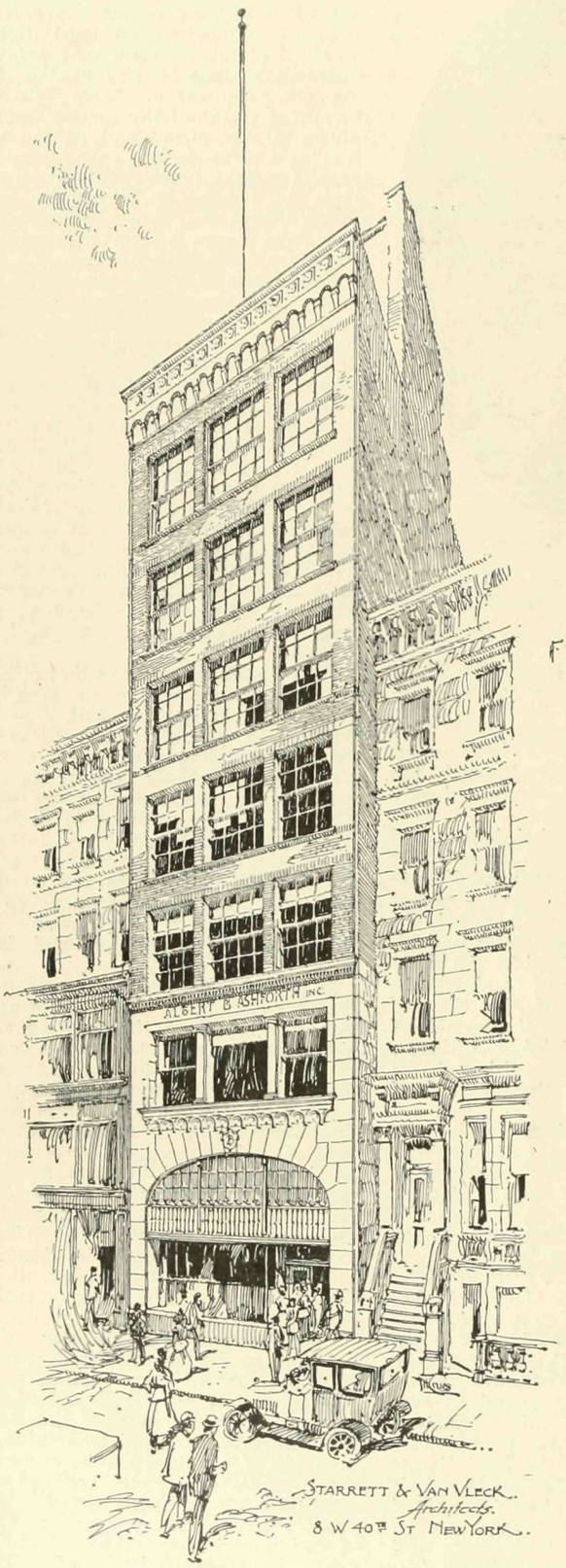

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LEGISLATIVE WORK OF THE REAL ESTATE BOARD

Many Important Measures Passed at Last Legislature and Other Bills to be Presented at Albany This Year

By RICHARD O. CHITTICK, Executive Secretary, Real Estate Board of New York

IT would be unfair to say that owners of real property and other allied interests had only recently given attention to municipal and State legislation. It would be both unfair and inaccurate to say that they have not, in quite recent years, taken a more lively interest in these matters. But to say that their interest, and the machinery for giving practical expression to it, are even approximately adequate to the grave necessities of the situation would be like giving unqualified approval to what is termed living in a fool's paradise.

It is the purpose of this article to outline briefly what the Real Estate Board of New York did during the year 1916 in trying to follow and ameliorate the local and State regulations affecting real estate. I say "follow" advisedly; for the number of regulatory requirements are now so great that it is well nigh impossible to keep track of them.

Reference to State legislative work only would be to omit a great deal that is essential in a summary of the Real Estate Board's efforts. Yet it will be necessary to omit mention of a great deal of local work—important matters that came before the Board of Estimate, the Board of Aldermen and before heads of departments.

Prior to the convening of the Legislature of 1916 the Board outlined a program designed to effect economies in city government and directly or indirectly to ease the burden of taxation.

In some instances it was necessary to originate the necessary bills. In others it was sufficient to endorse the underlying principles of desirable measures it was known would be advocated by others. The machinery for watching and directing the legislative work of the Board was brought up to a more efficient standard. The work was placed in the hands of a special joint committee selected from the Committee on Legislation and Taxation and the Committee on Real Estate Laws. This committee did not worry through the three thousand bills turned out by the legislative grist mill, but confined its attention to bills within the scope of its work. Definite action was taken on 203 bills. The results may be summarized as follows: Of these 203 bills, 95 were approved, 26 becoming law, 57 dying in committee, seven passing only in one house, three passing the Legislature but vetoed by the Mayor, two passing the Legislature but vetoed by the Governor. Of the 108 bills opposed, 39 were defeated and 19 became law.

The outstanding advantage gained by real estate owners from the 1916 Legislature was undoubtedly the Lockwood-Ellenbogen Bill, taking the City of New York from the jurisdiction of the State Industrial Commission in relation to structural changes, etc., placing the work under the superintendents of buildings, and creating the Board of Standards and Appeals.

Neither the Real Estate Board, nor any organization or interest, can justly lay claim to all credit for this great improvement in the machinery for inspecting and controlling factories and other buildings in New York City. It is the result of generous co-operation on the part of taxpayer and other business organizations and of a very creditable attitude on the part of city officials.

At the same time, the Real Estate Board may in justice to itself make the statement that the Conference Committee, which worked so zealously and intelligently on this piece of legislation, originated with this Board, having been organized by it in November, 1914, and held together and accommodated with headquarters and the machinery for its work from that time until the bill was signed by the Governor in May, 1916.

RICHARD O. CHITTICK.

Two other related measures, to the passage of which the Board's energies were especially directed, were the bill relieving from fire alarm signals and fire drills buildings having approved, two source sprinkler service; and the bill permitting the use of plate glass for fireproof windows where such windows are in certain relations to adjoining buildings and courts.

The bill amending the Labor Law generally, upon which the Board continuously urged favorable action, was vetoed by the Governor. This bill was introduced by the special legislative committee to investigate labor legislation. It would have modified the definition of a factory and in other ways provided reasonable modifications of existing factory regulations. Unfortunately it was an omnibus measure relating also to up-State canneries, so that the good features shared the fate of those which really caused the failure of the bill.

Important amendments to the Torrens Act were secured. These were not in every particular what the Board desired. But they were the best that could be obtained, coming eventually through the medium of a compromise measure presented by a joint legislative committee to compose certain differences between the Board's bill and others advocated. The attitude of the Real Estate Board is that the act as amended should be tried out before further changes are sought; and to this end it has been conducting an educational campaign through its Torrens Law Committee. Many addresses have been made before taxpayer and civic bodies. Considerable pains have been taken to sound the sentiment of lending institutions throughout the city and State on the question of lending on Torrens titles and to remove misunderstanding about the act. Both phases of this educational campaign are making excellent progress.

Other measures passed, to which the Board gave special attention, were the bill giving the Board of Estimate control over the expenses of the Court House Board; that making the administrative expenses of the Public Service Commission, First District, a State charge and to that extent relieving New York City of expense; and that cutting off the fees of the Sheriff of New York County after 1917.

Efforts were made to defeat the enactment into statute of the "pay-as-you-go" policy, the water meter bill and the bill creating the Department of Plant and Structures. They all became law. Many persons believe that the "pay-as-you-go" policy will of necessity be repealed. The theory is good but its practical details are wrong. The universal metering bill, also good in principle, will in practice prove defective until some method is designed for controlling water used by tenants. The Real Estate Board still believes that no real economy and little benefit will accrue from the conversion of the Bridge Department into the new Department of Plant and Structures. What it advocated was the abolition of the Bridge Department.

This is the briefest possible summary of what the Real Estate Board tried to do through the last Legislature. It omits reference to a number of less important measures. Naturally the Board is continuing its efforts along similar lines. Before this article appears in the Record and Guide it will be working on a definite program. At this writing it can only be given in more or less general outline.

It is generally agreed that the City of New York has had foisted upon it many expenditures growing out of mandatory legislation. In the Legislature the up-State representatives are not entirely to blame for this. Has not much of this so-called mandatory legislation originated right here in New York City or had local administrative support? City voters have blithely endorsed amendments and measures that have added largely to the tax bills, and then grumbled about it. The city vote has just carried an amendment for the State to appropriate $10,000,000 for forestry purposes and for extending Palisades Park. Will they just as gleefully pay their respective proportions of the $7,500,000 it will cost New York City?

How much home rule should the city have? How much power for spending can a local administration, either now or in later years, be entrusted with?

This is a very difficult problem. The Board will watch very carefully any legislation introduced along these lines, endorsing what may tend toward real economy and discouraging what may lead to great latitude in local spending.

In this connection legislation may be sought to give the Board of Estimate control over the expenditures of a number of commissions largely supported but not controlled by the city; to abolish some boards created by the State and merge some boards and officers where work and expense are duplicated.

Why do we need the Court House Board? Cannot water taxes be collected by the Comptrollers' department?

After a fair—or as most building owners would say, an unfair—trial, the existing definition of factory and factory building have proved utterly unsatisfactory. A proper definition must be obtained through amendment. The Real Estate Board is co-operating with the Board of Standards and Appeals and other organizations to secure this result.

It is also plain that the interpretation of the term agent, as used in the Labor Law, is unfair to agents who have not full authority to act for owners. The respective responsibility of owners and tenants should also be made plainer through amendments to the law. Suitable amendments will be vigorously urged in the Legislature.

Real estate in New York City pays 90 per cent. of all city taxes. It pays more than 70 per cent. of the direct State tax. Its burdens are continually increasing. In effect this procedure, while avoiding legal requirement of "due process of law" is reducing incomes and threatening equities. We are annually persuaded that city administrations are

(Continued on page 44.)

In a letter sent to Brokers we stated:

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PRESENT STATUS OF NEW DUAL TRANSIT SYSTEM

When Contracts Will Be Completed and Lines Placed in Operation—Despite Magnitude of Work, Delays Have Been Few

By HENRY W. HODGE, Public Service Commissioner

ON March 19, 1913, the City of New York, acting by the Public Service Commission for the First District, entered into what are known as the dual contracts for the construction and operation of the city's rapid transit lines. The two companies which became parties to these contracts are the Interborough Rapid Transit Company, which operates all of the rapid transit lines in the Boroughs of Manhattan and Bronx, and to Atlantic avenue in Brooklyn, and the New York Municipal Railway Corporation, a subsidiary of the Brooklyn rapid transit system, which operates practically all of the rapid transit lines in the Borough of Brooklyn.

Under the contract with the Interborough, the rapid transit system operated by them is being enlarged by the following additions:

A four-track subway from Park place and West Broadway through West Broadway, Varick street and Seventh avenue to a connection with the present subway at Broadway, near 43d street, with a two-track connection south through Greenwich street to Battery Park, making a rapid transit line on the west side of Manhattan from the Battery to Van Cortlandt Park, with a connection from 96th street through Lenox avenue to the Bronx. From Park place and West Broadway this line continues east and south through Park place, Beekman and William streets, and a tunnel under the East River to a connection with the old subway in Brooklyn at Joralemon and Fulton streets.

A four-track subway from Grand Central Terminal through Lexington avenue to Mott avenue and 138th street, there branching into a three-track subway and elevated line up Jerome avenue to Woodlawn and a three-track subway and elevated line through 138th street, Southern Boulevard and Westchester avenue to Pelham Bay Park, making a rapid transit line from South ferry to the Bronx on the east side of Manhattan.

A three-track elevated extension from the end of the old subway at Bronx Park up White Plains avenue to the city line at East 241st street.

A four-track extension of the old subway in Brooklyn from Atlantic avenue through Flatbush avenue and Eastern Parkway to Livonia avenue and hence as a two-track elevated through Livonia avenue to Brownsville, with a two-track branch in Nostrand avenue from Eastern Parkway to Flatbush avenue.

Under the contract with the Interborough there will be in all about fifty-three miles of new rapid transit railroad to be operated by the Interborough and a total length of line to be operated by them of one hundred and fifteen miles, including two tunnels under the East River.

Under their contract with the city the Brooklyn rapid transit system is at present operating the subway line from Chambers street, Manhattan, over the Manhattan Bridge and through Fourth avenue, Brooklyn, to 86th street. The system operated by the Brooklyn Rapid Transit Company is being enlarged by the following additions:

A three-track subway and elevated line from the present Fourth avenue subway, at 38th street, through 38th street, New Utrecht avenue, 86th street, Stillwell avenue to Coney Island, with a branch from Ninth avenue and 39th street through 37th street and Gravesend avenue to Coney Island, both of these lines making connection with the existing Fifth avenue elevated at 38th street.

HON. HENRY W. HODGE.

A two-track connection through Flatbush avenue, between the Fourth avenue line and the Brighton Beach line as reconstructed.

A two-track subway from a connection with the Fourth avenue subway at Atlantic avenue through Willoughby and Montague streets and a tunnel under the East River, thence through Whitehall, Church street and Broadway to Canal street, where it joins the extension of the present Fourth avenue subway through Canal street from the Manhattan Bridge. These two lines then make a four-track line up Broadway and Seventh avenue to 59th street, with a connection across 59th street and 60th street and a tunnel under the East River to a connection with the proposed new lines in the Borough of Queens.

Crosstown Subway.

A two-track subway from Sixth avenue, Manhattan, through 14th street, under the East River to Brooklyn, thence through Metropolitan, Bushwick and Johnson avenues, and the Long Island Railroad Company's right-of-way to a connection with the existing Brooklyn Rapid Transit Company's system at East New York.

A reconstruction of the Sea Beach line from a connection with the present subway in Fourth avenue, near 59th street, to Coney Island.

A reconstruction of the Brighton Beach line from Malbone street to Church avenue.

Under the contract with the Brooklyn Rapid Transit Company there will be in all about fifty-six miles of new rapid transit railroad to be operated by the company, and a total length of line to be operated by them of ninety-nine miles, including three tunnels under the river and three bridges over the river.

In the Borough of Queens two rapid transit lines are being constructed for joint operation by both the Brooklyn Rapid Transit and the Interborough Companies as follows:

A three-track elevated line from Queensborough Plaza through Second avenue to Astoria and a three-track elevated line from Queensborough Plaza through Queens Boulevard and Roosevelt avenue to Corona. Both of these lines will make connection at Queensborough Plaza with the Interborough and the Brooklyn Rapid Transit systems. The connection with the Interborough lines will be through a two-track elevated and subway line through Ely avenue, Davis street, the Steinway tunnel and 42d street, Manhattan, to a terminal at Times Square. A connection will also be made with the Second avenue elevated line as hereinafter mentioned. The connection with the Brooklyn Rapid Transit will be by means of the tunnel under the East River to 60th street, Manhattan. The total new rapid transit lines for joint operation by the two companies will be six miles.

In addition to the new rapid transit lines being built partly by company and partly by city funds, the two operating companies are constructing under certificates bearing the same date as the dual contracts certain extensions and additions to their existing systems.

The extensions and additions to the Interborough system consist of the following:

An additional track on the Second avenue elevated line from City Hall to 129th street, and a connection at Second avenue and 59th street across Queensborough Bridge to the new subway lines in Queens.

An additional track on the Third avenue elevated line from City Hall to Fordham station and an extension of the line from Fordham station, through Webster avenue and Gun Hill road to the new elevated line in White Plains avenue, with a connection from East 143d street and Third avenue through Bergen avenue to the West Farms branch of the old subway.

An additional track on the Ninth avenue elevated line from the Battery to 155th street and an extension of the line from Eighth avenue and 155th street to the new Jerome avenue line, at or near 162d street.

The principal extensions and additions being built under the certificates of the Brooklyn Rapid Transit Company are as follows:

An additional track on the Myrtle avenue line from Broadway to Wyckoff avenue, and an extension of the line from its present terminus to Metropolitan avenue.

An additional track on the Broadway line from Williamsburg Bridge Plaza to East New York and an extension of the line from Crescent street, through Jamaica avenue, to Jamaica.

An additional track on the Fulton street line from Brooklyn Bridge to East New York, and an extension of the line through Liberty avenue to Lefferts avenue.

At the time of the signing of the dual contracts the date of January 1, 1917, was fixed as the date of beginning of operation, although the engineers of the Commission at the time protested that the period from March 19, 1913 to January 1, 1917, was too short and that a system of such magnitude could not be constructed and placed in operation within that time. To care for this situation, provision was inserted in the contracts whereby in case lines scheduled for initial operation should not be completed and placed in operation by January 1, 1917, the time would be extended. As is hereinafter shown the new system is being constructed much more rapidly than the old, despite the fact that conditions and difficulties have arisen which could not have been foreseen.

The war in Europe has made great changes in not only the prices but also in the supply of building materials. At the time of the signing of the contracts, mills and shops were anxious for business and material was promised for quick

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delivery. For more than a year the condition of the steel mills has been such that not only are they not looking for business, but such business as they are persuaded to take is on long time deliveries; and even these deliveries are rarely made on time.

The price of steel has practically doubled. The vast amount of export trade has so congested railroad lines entering the Port of New York that there have been numerous embargos by the railroads, making it difficult to obtain materials after they have been fabricated and ready for shipment. This has been particularly the case with the shipment of ties from southern ports.

The demand of the export trade for all classes of vessels has caused similar difficulties and delays in shipments by water. Labor has become scarce, while at the time of the signing of the contracts labor was plentiful. It has become increasingly difficult to obtain men for certain classes of work since there are so many demands for labor in more attractive and lucrative occupations. All these conditions have resulted in loss of time, and there has been no remedy.

On January 1, 1917 there were in operation the following parts of the dual subway system:

In addition to the elevated lines in Manhattan and the old subway from Atlantic avenue, Brooklyn, to upper Broadway, and the Bronx, the Interborough is operating the Steinway tunnel line from Grand Central Terminal to Queensborough Plaza. Third track rush hour express service is being operated on the Second, Third and Ninth avenue elevated lines, Manhattan.

In addition to the elevated lines in Brooklyn the Brooklyn Rapid Transit Company is operating the Fourth avenue line, from Chambers street, Manhattan, over the Manhattan Bridge and through Fourth avenue, Brooklyn, to 86th street, with express service between Gold street and 59th street. It is also operating the reconstructed Sea Beach line, from Fourth avenue and 59th street to Coney Island. Express service is in operation on the third track of the Broadway elevated line, from Havemeyer street to Aberdeen street. The New Utrecht avenue line is in operation from a connection with the Fourth avenue line, at Fourth avenue and 36th street to Twenty-fifth avenue and 86th street.

Of the new subway and elevated lines exclusive of third tracking and extensions, under certificates, there were in operation on January 1, 1917, fifteen miles of new rapid transit lines.

During 1917 a large part of the remaining new lines of the dual system will be put in operation. The Public Service Commission hopes to have operation by the Interborough from Queensborough Plaza to Ditmars avenue, Astoria, by February, and it is expected that the Interborough will begin operation from Queensborough Plaza to Corona by next May.

The White Plains avenue extension of the old subway will be in operation by March. The Jerome avenue line, from a connection with the old subway at 149th street north to Woodlawn, will be ready for operation about June, though if such operation is undertaken prior to the operation of the Lexington avenue line, it will throw an added burden upon the old subway, now greatly overcrowded. The Lexington avenue line, which, with the portion of the old subway south of 42d street, will form the East Side transit route, and the Varick street-Seventh avenue line, which, with the portion of the old subway north of 42d street will complete the rapid transit line on the West Side of Manhattan, will both be ready for operation in the autumn. A portion of the Seventh avenue line, from Times Square to the Pennsylvania station, it is hoped, will be ready for operation by June.

The first line to be placed in operation by the Brooklyn Rapid Transit Company, in Manhattan, will be the portion of the Broadway line from 14th street to Canal street, and through Canal street to a connection with the Fourth avenue line. Operation over this line may be expected by June. The portion of the Broadway line, from Canal street to City Hall, will probably be in operation at the same time. The progress on the Brooklyn Rapid Transit Company's lines on Broadway and Seventh avenue, from 14th street to 59th street, is not such as to make possible at this time a definite statement as to the probable time of operation.

Sufficient progress is being made on the construction of the extension of the Second avenue elevated line across Queensborough Bridge to a connection with the new Queens lines at Queensborough Plaza to warrant the belief that through service from Manhattan to Queens over the Queensborough Bridge will be in operation this spring. This connection will give to the Borough of Queens its first through rapid transit connection with Manhattan.

Agreements Reached.

Agreements have recently been entered into between the City of New York, the Interborough Company and the New York Central Railroad Company for a connection between the Lexington avenue line and the West Farms branch of the old subway at 149th street. The New York Central Railroad has become a party to this agreement because of the connection with the new station and improvement at 149th street, which will be connected with both the Mott avenue station of the old subway and 149th street station of the Lexington avenue subway.

The connection of the Eighth avenue line, near 162d street, will be ready for operation early in 1918. The extension of the Third avenue elevated line, north from Fordham station, through Webster avenue and Gun Hill road, to the White Plains avenue line, will be ready for operation at about the same time.

In Brooklyn the Brooklyn Rapid Transit Company expects to put in operation additional elevated facilities during 1917. The extension of the Broadway line, from Crescent street through Jamaica avenue to Walnut street, will be in operation by March. It is hoped that the operation of this line will be carried as far as Cliffside avenue, Jamaica, by May. It is expected that the New Utrecht avenue line and the Brighton Beach line will be connected up with the terminals at Coney Island before summer. It is also expected that the additional elevated tracks on Myrtle avenue, between Broadway and Wyckoff avenue, will be in place and in operation by April.

Crowded Condition Studied.

The present overcrowded condition of the old subway, particularly the portion from Brooklyn Bridge to 96th street, has been the subject of much thought and study by both the Interborough and the Public Service Commission. Although it was thought long ago that the maximum capacity of the subway had been reached, the unprecedented conditions in the city during the present winter have resulted in new records. When it is remembered that this subway was expected originally to develop a traffic of about 400,000 passengers a day, and that during the present winter it has been averaging more than 1,400,000, the tax being placed upon the operating company will be appreciated. It is true that conditions are almost intolerable, yet they must be borne for a short while longer until the East Side and West Side transit lines have been completed and are in operation.

By the end of 1917 there should be in operation eighty-one miles of new rapid transit lines out of a total of one hundred and nine miles of new lines in the dual system. This should improve transit facilities in Manhattan, Brooklyn, the Bronx and Queens to a very material extent. The subway on the West Side of Manhattan will give to upper Manhattan greatly increased service since it will not be required to carry a large proportion of the traffic to and from the Bronx as at present. The line on the East side of Manhattan will give a direct connection with the Bronx, and the new lines in the Bronx will make available large areas at present undeveloped. The opening of the lines in Queens, which until the completion of the tunnel under the East River at 60th street, Manhattan, will be operated solely by the Interborough Company, will give to that Borough the rapid transit facilities which it so sorely needs. The new lines in Brooklyn will reach large undeveloped areas, as well as providing new transit facilities to Coney Island.

By the end of 1917 all remaining construction contracts will have been let and all remaining work contemplated by the dual system will be under way. The Montague street tunnel under the East River connecting he Brooklyn Rapid Transit Company's lines in Brooklyn with the same company's Broadway lines, Manhattan, should be completed in the summer of 1918. The Clark street tunnel, connecting the West Side line in Manhattan with the Interborough lines in Brooklyn, should be completed at about the same time. The Eastern District line, from Sixth avenue, Manhattan, through 14th street and under the East River to Est New York should be completed in the summer of 1919. The 60th street line with the tunnel under the East River, connecting with the Queens lines at Queensborough Plaza, should be ready for operation in the autumn of 1919.

The first McDonald contract for the construction of the old subway was entered into February 21, 1900. The first operation began October 27, 1904—the time of construction and equipment being four years and eight monhs. In these four years and eight months there was expended for construction, equipment, real estate, etc., approximately $68,000,000, representing twenty-two miles of rapid transit lines. The contracts of the dual system were entered into March 19, 1913. On January 1, 1917, there had been expended for construction and equipment under the dual contracts $225,000,000. There were in operation twenty-three miles of rapid transit lines exclusive of third track operation. By the end of 1917, or after a period of four years and nine months after the signing of the contracts, there shall have been expended $325,000,000 for construction, equipment, real estate, etc., with eighty-one miles of new lines in operation, exclusive of third tracks.

It took four years and eight months to complete the old subway on the first McDonald contract. In a like time, or from March, 1913, to January, 1918, approximately three and a half times as many miles of rapid transit lines shall have been constructed and nearly five times as much money expended under the dual contracts for construction, equipment, real estate, etc. This expenditure includes, of course, the cost of lines under construction at that time, but not ready for operation.

From present estimates the total construction cost of the new city railroads forming part of the dual system will be in the vicinity of $350,000,000.

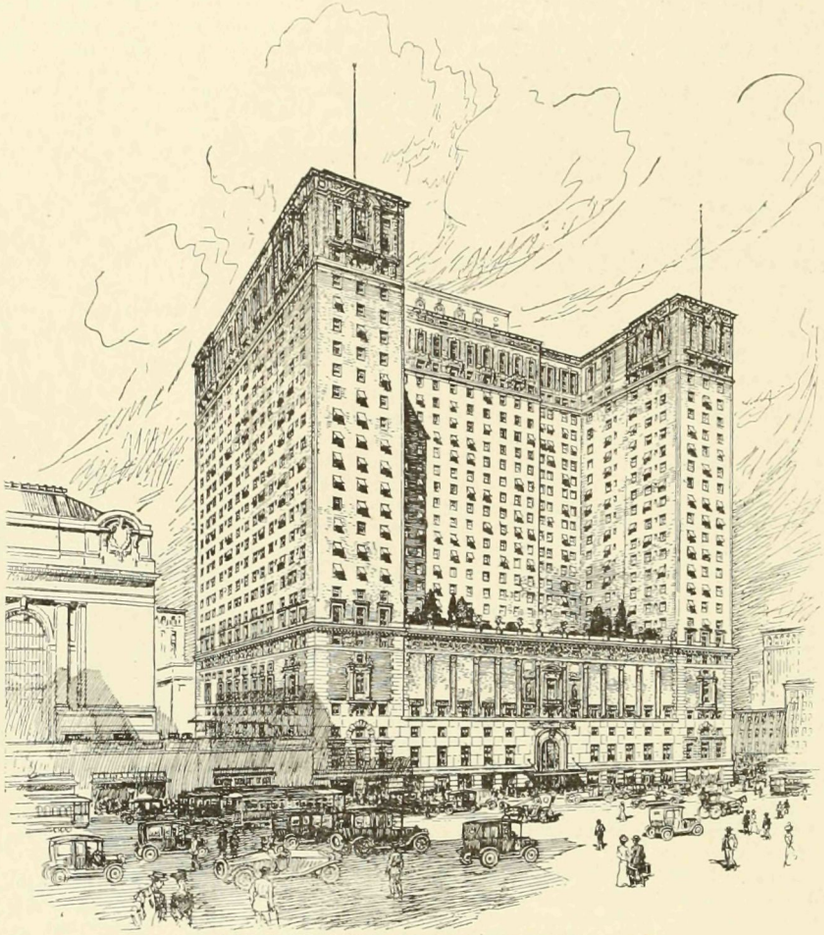
Contract Awarded.

The Public Service Commission awarded two contracts covering the construction of the Livonia avenue extension to the Eastern Parkway Subway in Brooklyn. One of the two contracts in question was for supplying the necessary steel, and was awarded to the American Bridge Company, the lowest bidder, at $1,431,755. The second contract was for the erection of the steel and other construction work and went to W. G. Cooper, lowest bidder, at $257,164. The two bids together total $1,688,919. The Livonia avenue extension is a two-track elevated line, to be operated by the Interborough when completed. All work under these contracts is to be done within fifteen months of the delivery of the contracts.

—The Public Service Commission for the First District has changed the name of the East 180th street station on the White Plains Road extension of the first subway to East 180th street-Morris Park avenue station.

The Commodore

Grand Central Terminal, N. Y. City



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Geo. W. Sweeney,
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THE BUILDING ZONE PLAN OF NEW YORK CITY

Brief History of Movement Which Led to Enactment of Law—Some of Its Provisions Reviewed

By ROBERT H. WHITTEN, Secretary Committee on City Plan

ALL admit the desirability of some degree of order in building development. All have witnessed the irreparable injury caused by haphazard building. That a public garage, stable or factory should be permitted to invade and destroy one after another of the best residential blocks of the city seems wasteful and foolish. Yet so implicit is our adherence to the theory that a man must be allowed to do what he pleases with his own property that we have considered ourselves powerless. Up to a few years ago this was the prevalent attitude in New York City. This supposed legal difficulty was fortified by the practical difficulty of securing an agreement in a democratic community on the details of a plan to control and direct city building. Yet notwithstanding these supposed difficulties, legal and practical, New York City has adopted a building zone plan with a substantial unanimity of opinion. What a few years ago would have been ridiculed as fantastic, arbitrary and confiscatory, is now welcomed by the property owners themselves as reasonable and absolutely necessary in the interest of public health, safety and general welfare and for the conservation of property values. The property owners of New York City have in recent years had some peculiarly distressing experiences with haphazard construction. This fact taken in connection with the quiet, patient work of the Commission on Building Districts and Restrictions has brought about with very little opposition the adoption of a comprehensive plan for the control of future building development throughout the five boroughs of New York City.

Marks Important Epoch.

The building zone plan put into effect in New York City on July 25, 1916, is one of the most complete and comprehensive plans for the control of city building ever adopted by any American city. It marks an important epoch in American city planning and city building. It is applied to more than five and one-half millions of people and it directly affects property assessed at more than eight billions of dollars.

The plan adopted is the result of some three years of careful investigation, research and conference. The preliminary investigation was carried on by the Heights of Buildings Commission appointed in February, 1913. This commission was appointed by the Heights of Buildings Committee of the Board of Estimate, of which George McAneny, then president of the Borough of Manhattan, was chairman. The commission was made up of nineteen members, with Edward M. Bassett as chairman. The commission through its technical staff made extensive investigations both of existing conditions in New York City and of the practice and experience of other cities, both domestic and foreign, including an intensive study of the zone regulations of German cities. The commission's report of 295 pages contains a thoroughgoing and authoritative discussion of the problem of regulating the height, area and use of buildings.

Draft Charter Amendment.

The Heights of Buildings Commission submitted a draft charter amendment permitting the Board of Estimate to divide the city into districts for the purpose of regulating the heights of buildings, the area of courts and open spaces, the location of trades and industries and the location of buildings designed for specific uses. This draft amendment was passed by the Legislature and became a law April 20, 1914. This charter amendment provides that the Board of Estimate before exercising the powers conferred, shall appoint a commission "to recommend the boundaries of districts and appropriate regulations to be enforced therein." Pursuant thereto, the Board on June 26, 1914, appointed a Commission on Building Districts and Restrictions. This commission consisted of sixteen members, with Edward M. Bassett as chairman and Lawson Purdy, vice-chairman. Taking up the work where the former Heights of Buildings Commission left it and using its data, investigations and report, the Districting Commission spent two years in making an exhaustive study of the entire subject. The Committee on the City Plan of the Board of Estimate placed at the disposal of the Districting Commission its expert staff.

ROBERT H. WHITTEN.

On June 2, 1916, the Districting Commission presented its final report to the Board of Estimate. The Board of Estimate held a series of public hearings on the report and it was also carefully considered by the Committee of the Whole of the Board.

On July 18, 1916, the Committee of the Whole submitted its report endorsing the zone plan. On July 25, 1916, the Board of Estimate adopted the plan and made it effective by a vote of fifteen to one. The single vote in opposition to the plan was apparently not in opposition to the zoning principle, but based on the refusal of the board to incorporate a certain more restrictive regulation for a particular district than that contained in the plan adopted.

The fundamental basis of the zone plan as presented by the commission is the need for the building of the city in accord with some well-considered plan. The commission says: "City planning is a prime need of our city. It is plain, common sense to have a plan before starting to build. City building is no exception to the rule. Haphazard city building without a comprehensive plan is ruinous.

The bigger a city grows the more essential a plan becomes. Traffic problems, the congestion of population, the intensive use of land, the magnitude of the property values involved, make the control of building development more and more essential to the health, comfort and welfare of the city and its inhabitants. New York City has reached a point beyond which continued unplanned growth cannot take place without inviting social and economic disaster. It is too big a city, and the social and economic interests involved are too great to permit the continuance of the laissez faire methods of earlier days.

Both the environment of the home and the home itself must be protected and safeguarded in every possible way if we would preserve under the necessarily crowded conditions of city life the physical, mental and moral health and general well-being of the people. The commission had testimony to the effect that there was a very direct relation between the rapid increase in nervous disorders and the congestion, noise and confusion incident to the existing haphazard and uncontrolled building development. The commission said: "The necessity for reducing the stress and strain of city life is becoming more and more apparent. This is essential if the city is to be a place in which our heritage of health and vitality is to be used, conserved and handed down to succeeding generations instead of being abused and exhausted."

The commission also holds that well-ordered city development cannot fail to have a marked effect on the physical fitness and vitality of the city's inhabitants. The commission says: "Health is sometimes regarded as merely the absence of disease, but, as has been pointed out by George C. Whipple, Professor of Sanitary Engineering, Harvard University, in a memorandum submitted to the commission, that is not a complete conception of health. Health is more than the absence of disease. It is something positive, and involves physique and vitality and it is mental as well as physical. The inherent difficulty at the present time is the absence of scientific methods of measuring this positive element in health. Yet the world knows as a matter of human experience that it is real and vital. The expression 'health and comfort of the people' is centuries old, and these two ideas are inseparable. Health as a positive concept denoting physical and mental well-being will be promoted in many ways by the districting plan."

Principle Simple and Obvious.

The plan adopted, while necessarily detailed and complicated, is in principle the most simple and obvious thing imaginable. Residence districts are established and they are protected against invasion by trade and industry of every kind. Business districts are established and they are protected against invasion by the trades and industries that are admittedly a nuisance in a retail business section.

Unrestricted districts are established where any kind of industrial, business or residential use is permitted. The unrestricted districts are chiefly located along the railway terminals and the navigable waterfront. They comprise the sections now devoted to industrial uses and those in which an industrial use seems appropriate.

The business districts except in the main centers are for the most part made up of the frontage on both sides of the traffic thoroughfares. The local retail business naturally follows the traffic thoroughfares and transit lines. By preventing the sporadic store from locating in the side residential streets, values on both natural business arteries and the side residential streets are improved. The concentration of all local stores on the main arteries helps values on such streets an dthe exclusion of the store from the residential streets improves rental returns in such streets.

Importance of Uniformity.

The maximum beneficial use of any given block or area is dependent on a certain measure of uniformity in its development as regards height, yards and open spaces. Such use would, in general, be enhanced if the property owners could enter into an agreement uniformly restricting the height of buildings and fixing the minimum area of courts and yards. The size of courts and yards is in most cases of as much benefit to a man's neighbors as to himself. It is, therefore, appropriate that each should contribute in substantial equality to the common stock of light and air. There

(Continued on page 45)

Save New York

THE cooperation of the real estate brokers is absolutely essential to the success of the Save New York Movement.

The fact that no leases have been made in the Save New York Zone to the manufacturers of the excluded lines, no new buildings erected in the Save New York Zone for manufacturing purposes, and that so many manufacturers in the Zone have been enabled to move into other quarters is greatly due to the aid which the real estate brokers have given to the Save New York Movement.

When a real estate broker discourages his principals from entering into a transaction because its nature opposes the plans of the Save New York Movement, and the broker thereby loses a commission, he is sacrificing his pocketbook to public spirit. These sacrifices are being daily made by the real estate brokers.

We thank the real estate brokers and appreciate the unanimous support of the Save New York Movement which they have given.

B. ALTMAN & CO.

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STERN BROTHERS

Save New York Committee
By J. H. Burton, Chairman

EFFECT OF THE "SAVE NEW YORK" MOVEMENT

Campaign Started Early in the Year a Success and the Results Obtained Will Be Far Reaching and Profitable

By J. H. BURTON, Chairman, Save New York Committee

THE future will show that by far the most important events affecting New York City real estate which have ever taken place were the legal zoning of the city, under Mayor Mitchel's administration, and the "Save New York" movement to preserve the character of our shopping, retail and residence sections from 32d to 59th streets, Third to Seventh avenues. These should give every citizen of New York new pride in his city and confidence in its willingness to merge selfish interests for the public good.

The zoning of the city is probably the most valuable work that has been done by any city administration for many years. By the passing of this law the future growth of New York is directed along lines that prevent building abuses, protect real estate values and yield better revenue from taxation. But this law interferes with no existing building or business; it compels nobody to move from the place where he is already established—it deals entirely with the erection of buildings in the future.

The "Save New York" movement was very different. That involved a drastic remedy for existing evils. Established concerns had to be asked to move, giving up convenience and investment and what appeared to be advantages of location. New tenants for the buildings already erected had to be obtained. That was a very different proposition, and nobody who saw the difficulties when the Save New York Committee set out to wrestle with them less than a year ago would have dared to hope for even a part of the success that has been attained.

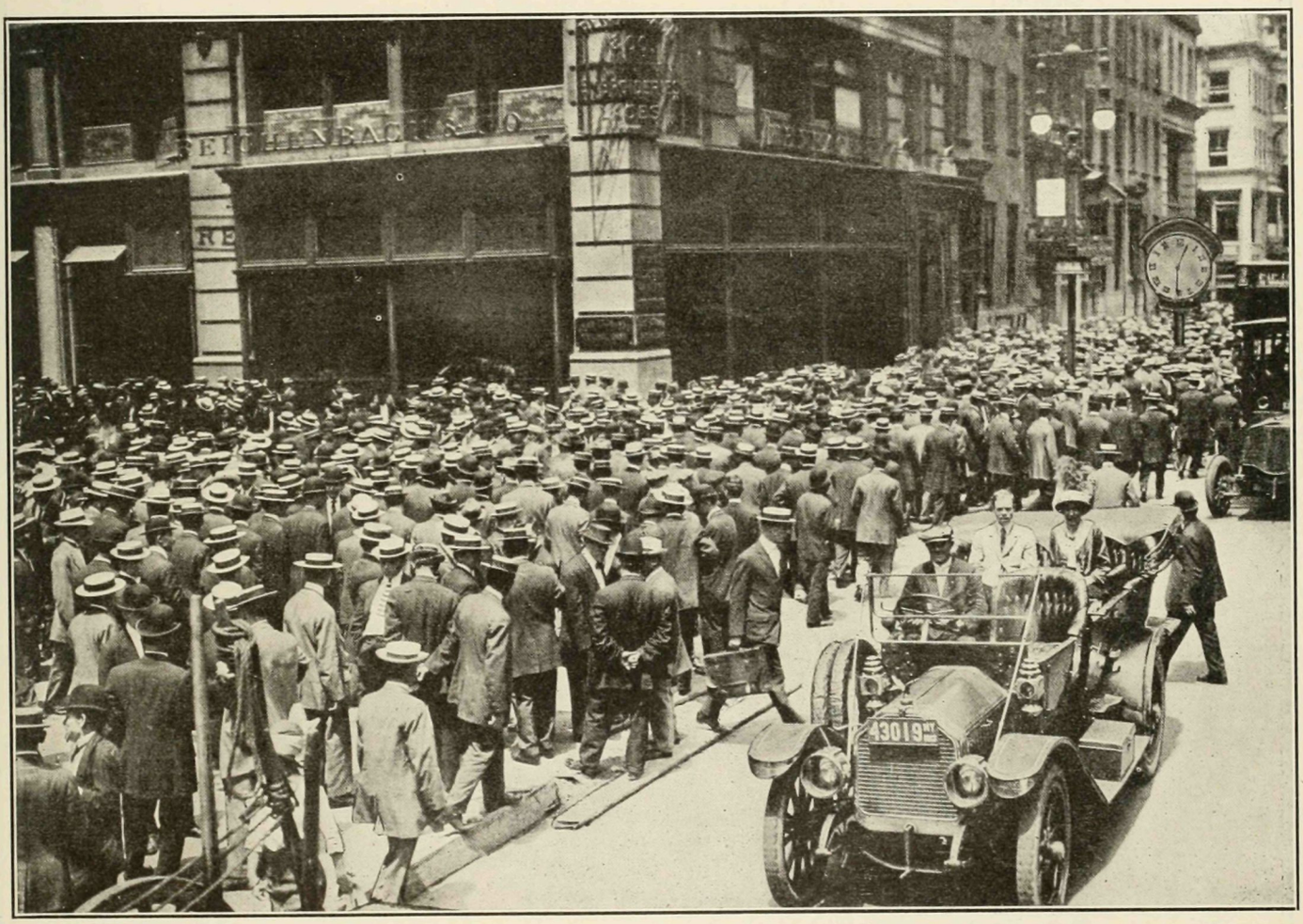
Nearly a year ago the heads or representatives of leading dry goods firms held a meeting to decide whether any steps could be taken to save the uptown shopping section from the steady northward march of garment workers who had already brought ruin on the section from 14th to 23d streets, were advancing towards 34th street and threatened to continue north to 59th street, through old residence streets to Fifth avenue, Madison avenue, Park avenue, Lexington avenue, Sixth avenue and Broadway and to Third and Seventh avenues.

Experience has proved that if they located in this section the people living there would have to move out, abandoning their homes; the principal retail section would be ruined; the hotels would lose their guests, and New York City as a whole would receive a death blow, for every street and avenue in the section involved would have been seriously affected and the garment workers themselves would not be benefited, and the section from 14th to 23d streets which they were leaving would be absolutely tenantless.

The parade of workers from the garment factories on the sidewalks between twelve and two o'clock is enough to kill real estate values in any neighborhood. Put ten loft buildings of twelve stories, fifty feet wide, on a side street and they will empty from 2,500 to 3,000 employees on the sidewalk of Fifth avenue or of whatever main thoroughfare happened to be nearest.

Adjoining property became of no value except for similar manufacturing buildings, and as the process continues with the erection of other loft buildings in the same street, the very manufacturers who had ruined such a block would be moving to another neighborhood in search of more light and air and to get away from the rush of competitors who had followed them, leaving a fresh train of vacant lofts, thus depreciating real estate values in another section just built up.

The men who met to consider this problem decided to form themselves into a committee called the Save New York Committee, and to establish a zone called the Save New York Zone, bounded on the south by an irregular line halfway between 32d and 33d streets, on the west by Seventh avenue, on the east by Third avenue and on the north by 59th street. They also decided to persuade manufacturers who expected to move into this zone to stay out; to induce those already in to move out and to stop the erection of new manufacturing buildings in the zone. An agreement was also made to give the preference in buying goods to those manufacturers who did not manufacture in the zone, this measure to take effect February 1, 1917.



STREET CONGESTION ON FIFTH AVENUE DURING THE NOON HOUR.

Members of the committee subscribed from five to fifteen thousand dollars each to finance its work, and the next step was an educational campaign of advertising in the daily papers, paid for by the committee, which explained the zone and the movement.

Had the project been confined entirely to Fifth avenue, there might have been distrust of the motives of those who started it. But the establishment of a great zone was different. This affected the very heart of New York and comprised all that makes the city worth while as a place to shop, play, work and live in. Special interests were thus abolished, and the movement put above suspicion.

The response was immediate and striking. Many firms offered to help, financially or otherwise. The newspapers gave the movement wide publicity and commented on its editorially. Some

Save New York

THE letters reproduced below and taken at random from over 1700 received, show the spirit in which the members in the United States have lent their approval and endorsement to the Save New York Movement.

THE McALPIN COMPANY
Cincinnati, O.

J. H. Burton, Chairman,
Save New York Committee,
New York City.

Gentlemen:

We wish to state that we are heartily in accord with the movement of the "Save New York Committee" and from what we know of the situation, believe that if the manufacturers were located in the downtown district, there would be a natural saving of overhead, and also would bring about a centralization of the cloak and suit and kindred industries, which would mean quite a saving of time to our buyers.

Yours very truly,
THE McALPIN COMPANY,
Per George R. Owens,
Merchandise Manager.

December 30th, 1916.

H. C. CAPWELL COMPANY
Oakland, Cal.
January 3rd, 1917.

Save New York Committee,
291 Fifth Avenue,
New York City.

Gentlemen:

We believe with you that every merchant in the United States is interested in the welfare of New York City and, being so, should approve of whatever steps are being taken to keep the best part of New York free from manufacturing enterprises that would be a mar to the retail district.

As a matter of fact, the outside of New York merchants should be interested in the cloak and suit trade, and all allied industry, being located where they are not in competition with retail stands. We know that the expense of maintaining an elaborately fitted up show room in the heart of the retail district is very great, and must be put upon the price of merchandise. We prefer to buy goods and not locations.

We sincerely hope your efforts will be crowned with success. Yours truly,
H. C. CAPWELL COMPANY.

MORRIS KRAUS
Herkimer, N. Y.
January 2nd, 1917.

J. H. Burton, Chairman,
Save New York Committee,
New York City.

Dear Sir:

In answer to your circular letter of December 28th, will say that I am heartily in favor of your movement to save the retail section. I have noticed for the last two years and more that firms, both manufacturers and jobbers, that I did business with, as they were moving uptown, their prices of merchandise kept moving up with them. The only remedy that I can see is to establish a safety zone, and retailers to pledge themselves not to deal with firms that move into this zone. Very truly,
MORRIS KRAUS.

J. H. C. PETERSEN'S SONS CO.
Davenport, Iowa
December 30th, 1916.

Mr. J. H. Burton, Chairman,
Save New York Committee,
New York City.

Dear Sir:

We are just in receipt of your letter in regard to the centralization of the cloak, suit and other allied industries in definite location, and will say we are most heartily in accord with this movement. In the first place, the retail section should not be so congested as it is. Furthermore, when a buyer goes to New York, he spends about four-fifths of the time chasing from one part of the City to another, and the rest of the time he wastes. Another serious problem is, the extreme overhead expense that the manufacturer of these lines must burden himself with when he moves into the retail section, and we, the little merchant, must "pay the freight," so to speak.

Wishing you all the success in the world in this undertaking, we are Respectfully,
J. H. C. PETERSEN'S SONS CO.,
(Signed) A. C. Goode.

SEARS, ROEBUCK & COMPANY
Chicago, Ill.
New York, January 3rd, 1917.

Save New York Committee,
291 Fifth Avenue,
New York City.

Gentlemen:

We are pleased to endorse the "Save New York Movement," which will have our full support at all times. Yours very truly,
SEARS, ROEBUCK & COMPANY,
New York Office.
RPS/L (Signed) Robert P. Sniffen.

O. F. SAWYER & COMPANY
Hutchinson, Kansas
January 2nd, 1917.

Save New York Committee,
291 Fifth Avenue,
New York City.

Gentlemen:

We most sincerely hope and have no doubt you will be successful in your effort to keep Fifth Avenue's retail district free from the manufac turing establishments. We cannot see that they would be any better off in that section than where they have been, and any general movement of their shops close to the Avenue would be a public calamity.

In our buying we shall give the preference to the manufacturers who are public spirited enough to keep out of the Fifth Avenue district.

Sincerely yours,
(Signed) O. F. SAWYER.

CHICAGO MAIL ORDER COMPANY
Chicago, Ill.

Mr. J. H. Burton, Chairman,
Save New York Committee,
291 Fifth Ave.,
New York, N. Y.

Dear Sir:

We have just removed our New York office from 210 Fifth Ave. to the McCreery Bldg., corner 23rd St. and Sixth Ave., and one of our reasons for doing so is that we believe this location to be more accessible to the cloak and suit industry of New York City and therefore more convenient to us in our dealings with the cloak and suit manufacturers.

Many of the manufacturers we deal with are located further up in the 34th St. district, and we are sure that it would be much more satisfactory and convenient to us if all the manufacturers in this industry were located in the territory from 14th St. up to 23rd St.

Yours very truly,
CHICAGO MAIL ORDER COMPANY,
CAB/TL C. A. Bethge, Gen. Mdse. Mgr.

J. B. MOSBY & CO.
Richmond, Va.
January 4, 1917.

Mr. J. H. Burton, Chairman,
Save New York Committee,
291 Fifth Ave.,
New York, N. Y.

Dear Sir:

We beg to acknowledge receipt of yours of Dec. 28th and we fully endorse your movement and the sentiment that prompts same.

There is no question about it that merchants from all over the United States outside of their home town take great interest in New York City, and it is a crying shame that Fifth Avenue, the finest retail thoroughfare in the world, should be spoilt by manufacturers who should be in a different locality and pay less rent.

It is our belief that this jealousy in location and extravagance has caused the downfall of more than one manufacturer that we know of with whom we have dealt.

We trust your movement will be highly successful and that you will find the retail concerns mentioned in your letter will have the full approval and endorsement of every merchant throughout this country; and we are quite sure the way you are going at this you will meet with success in your efforts which demand and deserve the backing of citizens in the United States.

Yours very truly,
J. B. MOSBY & CO., Inc.
EAD/AM

of the most intelligent and constructive comment came from labor papers, in foreign languages, whose editors saw the advantage that would come to garment workers through a better location of the industry, and its freedom from speculative real estate operations. Every organization that takes an interest in civic affairs, whether from a business or a sentimental standpoint, hastened to endorse and encourage the movement. Among those active were the Fifth Avenue Association, the Murray Hill Association, the Washington Square Association, an association from the Bowery and the Board of Trade of the Bronx, and the different associations of the trade representing the cloak, suit, fur and kindred industries.

Then began a systematic canvass of manufacturers in the zone to influence them to move. It was found that many had leases running from one to three years. As a matter of fair play, it was agreed that they should be allowed to stay until their leases expire. On signing an agreement to move then, each firm became a member of the Save New York movement with a share in its benefits, and the agreement regarding purchase of goods only from firms outside the zone was suspended in their cases until the expiration of their leases, and the loaning institutions of the city agreed to discourage loans on new buildings to be erected in the Save New York zone unless the buildings to be erected were restricted against use for manufacturing purposes of those lines barred from the Save New York zone.

Since this movement started, three objects have been accomplished which show its success:

FIRST.—Not a single new lease for manufacturing purposes has been made in the zone.

SECOND.—Not a single new building for manufacturing purposes has been erected there.

THIRD.—All but twenty firms who are now manufacturing in the zone, out of a total of two hundred and twenty-five, have agreed to move out at the expiration of their leases.

Thirty firms leave by February, 1917, and the rest will move—half in 1918 and half in 1919. Of the remaining twenty, probably three-fourths are heartily in favor of the movement, and intend to leave as soon as their leases expire, but have not signed because they want to be certain that all are to move. Even if there were opposition, it is believed that the strength of public opinion in this movement, which in the end decides such issues, would compel their all leaving.

An appeal is now being made to fifteen thousand retail merchants throughout the United States, asking their endorsement of what the cloak and suit association of New York City has recommended. Whether a merchant is in Chicago, St. Louis, on the Pacific Coast or in New England, it is believed that he has an interest in the integrity of New York, that he is proud of New York next to his own community, and that he will endorse this movement, and encourage his buyers to purchase their goods from manufacturers whose locations will permit them to manufacture at minimum cost, under reasonable rents, instead of at the maximum that they must meet by constant moving into new locations in the most highly valued sections of the city. The manufacturer who pays only twenty thousand dollars a year rent obviously has a great advantage over the one who pays forty thousand dollars for the same amount of floor space. This extra overhead expense must be met in prices for goods, and paid by whoever buys them.

We know that these appeals to retailers throughout the United States will be heeded, and that before long the Save New York movement will have become nation-wide. Steps are being taken to gather information from the leaders of the manufacturers' associations to help in the relocation and better organization of the garment and needle trades, so that the visiting buyer's convenience will be taken into consideration, his time and energy economized, his purchases be increased through ability to see all that is in this market with the least effort, and his patronage be extended to more concerns. There is every reason to believe that, on account of scattered and shifting location of manufacturers, the visiting buyer has not been able to see one-half the firms or the goods, and that on account of the high prices the manufacturers were paying for space in their race to be located in the latest retail and hotel zone, that western cities would gradually have taken this industry from New York on account of their being able to manufacture at less cost.

The Save New York movement is now an assured success. It will be only a matter of months before the zone from 32d to 59th streets, and from Third to Seventh avenues, will be for all time protected, to become the finest section of the greatest city in the world. The rest of the city will benefit. Already the loft buildings between 14th and 23d streets, which were being emptied as a result of the movement north, are again filling up, and owners of real estate in this section will receive a fair return on their investments, instead of being in danger of losing them by foreclosure.

And now, as we enter the new year, there is another problem before the Save New York Committee, namely: Where shall the manufacturers who have agreed to move out of the zone move to if there is no vacant space for them in suitable modern buildings?

They want to move in a body, if possible. For if enough of them locate in any one section of the city, no matter where, so long as it is convenient to the buyers, they can carry on their business satisfactorily. They want modern factory buildings, with ample light, space and air, and they want them at a fair rental, so that New York can compete with the growing cities of the west.

Few realize that about five hundred million dollars worth of garments were manufactured in this city last year. If New York City helps the garment industry, it will grow and help the city, and the principal benefit to the city by the Save New York movement will be for the garment industry.

Under the zoning system passed this year there can be no further erection of factory buildings from 22d to 59th street, between Third and Seventh avenues. Therefore, the new development of the garment industry must be outside that district.

Long Island City will shortly be easily accessible to our subways, and a great construction company there has offered to erect a series of factory buildings, sanitary, fireproof and with every device for reducing the overhead costs of manufacturers, provided one hundred firms seeking new locations will move there. The manufacturers believe that this will open up great possibilities for the development of their industry. To take care of their employees, the same company offers to erect homes.

Owners of large vacant spaces between Seventh and Eighth avenues, south of the Pennsylvania station, are trying to influence the garment trades to centralize there, calling attention to the advantages in the Seventh avenue section by the new subway on Seventh avenue; nearness to the Pennsylvania railroad on account of out-of-town buyers; the new Pennsylvania hotel now building and the large tracts of undeveloped property which should accommodate all the manufacturing interests which have to move.

In all probability, both these plans will be carried out—those firms who manufacture on a very large scale or whose business is a staple one locating at Long Island City, and others whose business is more a question of style locating south of the Pennsylvania station. But this is up to the owners of this property themselves. If they will erect manufacturing buildings there with proper light and air space they can centralize the manufacturing industry in the great tract from Sixth avenue west to Eighth avenue, with Seventh avenue, 23d to 31st streets as the center of the great industry, but it is entirely a question of cost, and unless they make it attractive for the garment industry to go there this section of New York, which the location there of the big manufacturing industry will develop, will probably remain in its present unoccupied condition for many years like many portions of lower New York which have been skipped over.

Another plan suggested is for the erection of a six million dollar group of modern manufacturing buildings to give an entire block in the old Sixth avenue shopping district. The boundaries are Sixth avenue, 20th street, Seventh avenue and 23d street; roof space to be utilized for recreation grounds according to the plans, and transit and shipping facilities linked up to give a permanent home to hundreds of manufacturers.

It has been proposed that a club for the garment manufacturers be established near the Pennsylvania station as a means of bringing them together and furthering organization and co-operation with their customers for whom this would be the most convenient location for such a club.

Citizens of New York must remember that garment manufacturers who have agreed to move out of the zone are entitled to their everlasting thanks. All manufacturers who were not in the zone said the movement was a good thing. They did not have to move, but those who must move will incur great inconvenience. New York owes them a debt of gratitude.

The Save New York Committee will use every effort to put the movement through because they feel that its success means more for the future of the city than anybody can now fully realize. It is a movement, not for any particular street or avenue, or trade, or interest. The Save New York Committee is connected with no other organization in any way, although its members individually belong to many other civic bodies. The men on the committee who are giving their time and money are working for the broadest good of every class, section and interest of the city. Their names are a guarantee of the disinterestedness of the work, and also an assurance to the citizens of New York that there will be no halt to make the movement completely successful. These names are:

Michael Friedsam, president, B. Altman & Co.,
Louis Stewart, of McCreery & Co.,
J. Straus, of R. H. Macy & Co.,
H. A. Saks, of Saks & Co.,
Isaac Gimbel, of Gimbel Brothers,
A. H. Ball, of Best & Co.,
F. Simon, of Franklin Simon & Co.,
P. Bonwit, of Bonwit, Teller & Co.,
Samuel W. Reyburn, of Lord & Taylor,
H. A. Weatherby, of Arnold Constable & Co.,
J. M. Gidding, of J. M. Gidding & Co., and
Benjamin F. Pitman, of L. P. Hollander & Co.

N. D. Reich is the attorney for the Save New York Committee, for every move of the committee has been under legal advice.

The work will continue until there is not only no manufacturer of the lines barred in the zone, but until it becomes a recognized custom, stronger than any law, that manufacturers in those lines shall never go there. Thus the future of Murray Hill is assured; the fine residences from Lexington to Madison avenues on the cross streets between 35th and 45th streets will remain fine residences and not be ruined by having sweat shops erected in their midst; Fifth avenue from 32d to 59th street will always remain the great shopping and fashion center of the United States and of the world, and Madison and Sixth avenues will develop on either side, benefiting from Fifth avenue's substantial unhampered development.

If the Save New York Movement had not been undertaken, Broadway would have been invaded by garment manufacturers as many of the leaders were planning to go there, and the erection of a number of very big manufacturing loft buildings, one twenty stories high, two

(Continued on Page 42.)

Millions are

in property and

READY TO WEAR

in Greater

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FIFTH AVENUE AT 57TH STREET IN THE YEAR 1925

What Would Have Happened If The "Save New York" Movement and the City Zoning Had Not Been Undertaken

By ALBERT B. ASHFORTH

IT is an easy matter to look backward and contemplate how we could have improved our condition had we the work to do over again. Would we have calmly contemplated the encroachment of workers on lower Fifth avenue had we anticipated that the conditions which exist there today would come to pass? The "Save New York" movement, coupled with the legal zoning of the city under the present administration, is the only preservative that one can look to to prevent the ruining of the retail centre in a similar way that lower Fifth avenue has been affected.

The owners of property from 34th to 59th streets are fortunate in having their property protected before the damage is done, and each should freely give his utmost support and endorsement to the movement. The "Save New York" movement will, without question, cause a stability of real estate values to the finest properties in the city, and will do away with the increased depreciation of assessed values which has caused the reduction in the city's revenue.

The continual movement of the manufacturers from one section to another has caused a tremendous fluctuation in values, wiping out from twenty-five to fifty million dollars' worth of assessed valuation each year. This has been stopped with the result that future building developments will bring increases in assessed valuations to the city instead of reductions. There may also be a chance that eventually a reduction may be secured in the tax rate, but it should be certain that the result obtained will go far towards controlling the tax at the present level.

The vacating of properties through the desertion of entire trades to different localities represents a loss of millions of dollars in loft building values located between 14th and 23rd streets. It is already evident that this loss is gradually being restored and will eventually return to normal value.

Owners of property from 32d to 59th streets, between Third and Seventh avenues, would have suffered from the same ruthless wasting of values in the

ALBERT B. ASHFORTH.

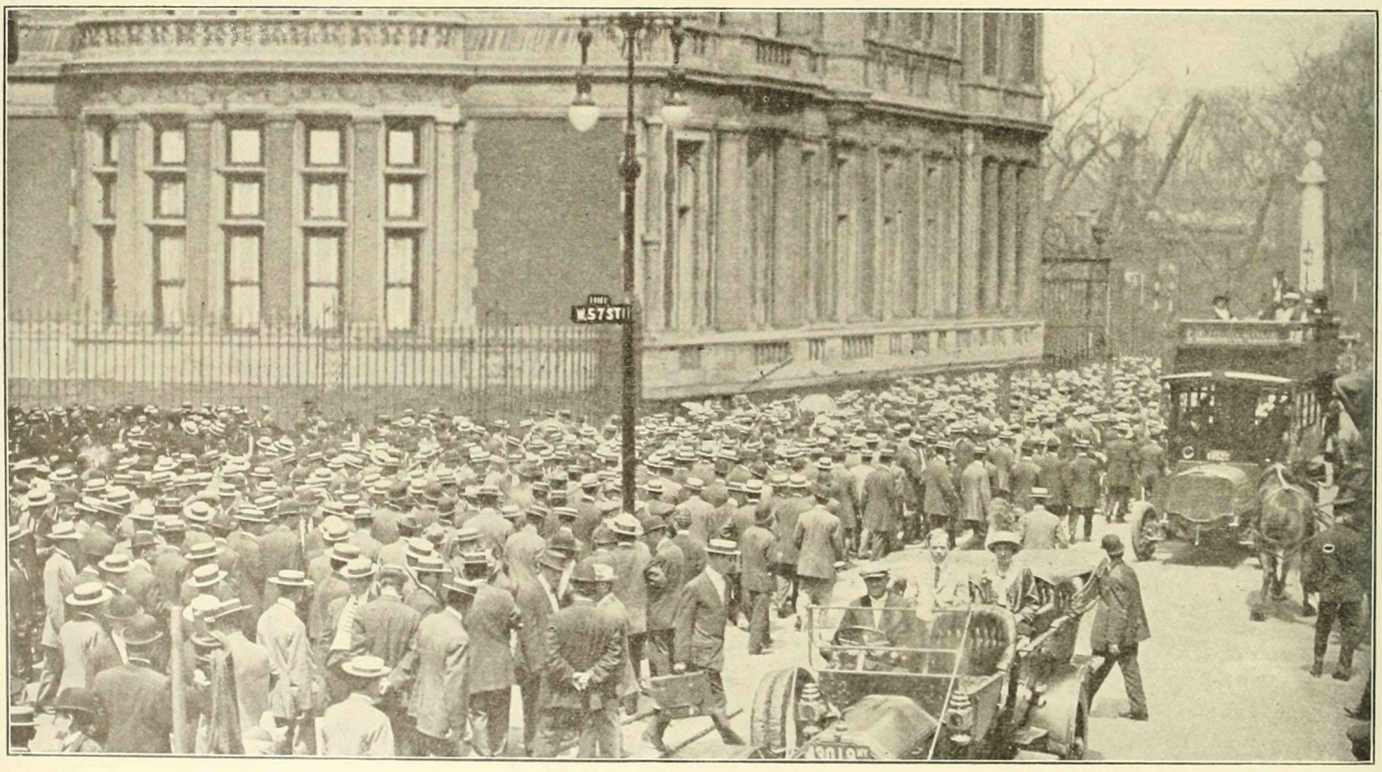
years to come had not the "Save New York" movement been inaugurated, and the permanency of the improvement to which their properties will be put has, at least, a chance of being assured.

It is hoped that a contemplation of the photograph will bring to the attention of owners of property on Park, Madison, Fifth and Sixth avenues and Broadway, together with those owners who have property on the side streets from 25th to 59th streets, what would have happened to their locations were these streets and avenues to be swamped with the thousands of workers who are now seen parading the lower section of Fifth avenue and the side streets at midday. May it bring home to them the work that is going on to save their property and lead them to give every encouragement to those who are trying to preserve the integrity of their property. It is up to every owner, civic body and association, together with all garment manufacturers, to back this movement, and the garment manufacturers should use their influence to see that the movement to vacate the retail zone becomes a unanimous one. It is not only to their benefit but to the benefit of every other line of business in New York.

All those manufacturers who deal with the cloak and suit trades should realize what a benefit this movement will be to their business. The garment trades represent one of the biggest manufacturing elements in New York City. They should receive consideration from the city, and ought to be properly fostered and encouraged to make New York their headquarters. This idea the "Save New York" Committee expects to take care of. Of course, we all realize today that this movement should have been inaugurated years ago, as it might have resulted in saving property below 14th street and preserving the section from 14th street as far north as 23rd street.

It is the first time in the history of New York where concerted action has been taken to protect the city against future damage. Future values in the heart of New York should be assured, and with the successful fulfillment of the "Save New York" movement and the zoning law, lasting benefits should be derived by other parts of the city, and all owners of New York property should back the proposition with their entire co-operation. As Mr. Burton has referred to in his article in this issue, the far-reaching effect of his ideas will not only affect us locally but will be of benefit to manufacturers all over the United States, in that they will be able to send their buyers to New York, where they can make their purchases in a given area with the least amount of trouble and effort.

In contemplating the centralization of garment trades, it has been realized how well taken care of the buyers who come to this city will be and how natural it will be for other trades who do business outside of New York to locate in proximity to these manufacturers, and it will bring about an enhancement of value not only in the location where manufacturers do their business, but in adjacent property. The stability of values coming from the certainty, through the new zoning law, that your next door neighbor will not be a manufacturer, or that a twenty-story building will not be put adjacent to your property, will bring investors in large numbers to New York City.



FIFTH AVENUE AS IT MIGHT HAVE LOOKED IN 1925

INDUSTRIAL DEVELOPMENT OF NEW YORK CITY

Reasons for the City's Growth—Early Volume of Manufacturing—Conditions in the Five Boroughs

By C. S. MEAD, Secretary, Merchants' Association of New York

NEW YORK is the largest manufacturing city in the United States, and probably in the world. According to the figures of the 1914 census, which are just available, it manufactures about 9½% of all the products of the United States, measured on the basis of their value. In spite of its position, however, the manufacturing importance of the City seldom receives full recognition.

Its prominence as a financial center has been recognized for years. Its position in domestic trade is well known, it being the largest merchandising center in the country. It is recognized that the port of New York is the gateway through which the imports and exports of the United States pass to a greater degree than through any other port, and the development of our port facilities, the improvement of rail and water terminals give promise of even larger growth. These facts are commonly known, but the fact that New York is the leading manufacturing city of the United States has not been so generally recognized.

The position of New York, as compared with other manufacturing cities, is an enviable one not only from the point of view of the present volume of manufacturing, but from the point of view of the steady progress which has been made in the manifold industries of the City during recent periods. For example, between 1909 and 1914, New York City added almost 3,700 factories to the plants already here. No other city in the United States shows an increase during the same period even approaching these figures. For example, Chicago, the second city in size, according to the census figures added only 458 factories during the same time.

The amount of capital invested in New York City increased approximately $264,000,000 between 1909 and 1914, while the amount of capital invested in Chicago increased approximately $218,000,000.

Reasons For New York's Growth.

Before considering New York's position further, it is worth while noting that the above growth came to the City without the extensive inducements and advertisements so often used by other cites in the effort to attract factories.

The awakening sentiment in favor of a more scientific method of locating manufacturing establishments is working directly to the advantage of New York City. Former haphazard and unscientific methods are being discontinued, in favor of a consideration of the basic economies of production and distribution. On such considerations New York City will ever have, for many lines of manufacturing, an attraction unparalleled elsewhere.

Certain facilities which tend to enhance New York as a producing center may be enumerated briefly, as follows:

(1) The new thousand foot piers on the west side of Manhattan, and the improvement of dockage facilities in various parts of the City.

(2) The development of marginal railways.

(3) The connecting railway which makes New England points directly accessible from Long Island.

(4) The continual development of rapid transit facilities making possible the easy and cheap transfer of labor to any point in the greater city.

(5) The development of the Champlain and the Erie Canals, the operation of which will reduce the cost of securing raw materials, and delivering certain lines of finished products.

(6) The growth of plants which afford facilities unparalleled elsewhere, such as the Bush Terminal Plant in Brooklyn, The Degnon Terminal in Queens, etc.

(7) The fact that New York City is a style center for many products, especially for articles used in connection with wearing apparel.

(8) The City's unparalleled facilities for exporting products which enter into foreign trade and for importing raw materials.

(9) Relatively cheap land, buildings and loft space in different sections of the greater city. For heavy lines of manufacturing the outlying sections of the city afford numerous suitable spaces of land available for this class of manufacturing.

(10) New York City's supply of labor, including both skilled and unskilled workers. The printing industry, for example, has built up a corps of efficient workers. This class of workmen will not live at too great a distance from New York City, as is illustrated by the attempt of a publishing and printing house to move its plant from New York to a city approximately one hundred and twenty-five miles away, having a population of about 20,000, which did not succeed in that location because the workmen refused to live in the community in question.

(11) New York's enormous population gives it a local purchasing power unparalleled elsewhere. It is, of course, difficult or almost impossible to measure the local market accurately. The amount of money in the banks and banking institutions in this city, the volume of business done by the Clearing House Association, and the value of property subject to taxation, all furnish a faint indication of the tremendous potentiality for absorbing products which the city possesses. On such a basis, New York surpasses its nearest competitor, Chicago, inasmuch as three times as much money passes through the New York Clearing House in a year for each resident in the City, as passes through the Chicago Clearing House during the same period. The banking resources of New York are 3.7 times greater than those of Chicago, etc.

The disadvantages of a New York location which the city must remedy lie chiefly in the fact that in its older sections high land values necessitate high rents with crowded factory conditions. Furthermore, the difficulty of getting direct rail connections in Manhattan, combined with the unusually heavy costs of trucking in that Borough, and the frequent and long delays at piers and freight yards, have necessitated the removal of certain lines of manufacturing to more sparsely populated areas within the city.

The factors which have enhanced New York City's position are not strictly limited to the city alone, but have their effect in a varying degree throughout a wide area. This has been recognized by the Federal Census and a metropolitan district has been outlined and designated by the Federal Bureau which is known as New York City's industrial district. Sections of Long Island, Westchester County and New Jersey are included in this area.

This district adds approximately 3,000 manufacturing establishments to the number found in the greater city.

Just as New York City surpasses Chicago in the amount of manufacturing within the city itself, the industrial district of New York City exceeds the industrial district of Chicago even to a greater degree.

The earliest available figures of the Federal Census showing the manufacturing activities of New York City cover the year 1860.

At that time $61,000,000 was invested in manufacturing, and this amount of capital produced products worth approximately $160,000,000. Ninety thousand persons were then employed in the city's factories.

The lines of manufacturing in those early days centered primarily around the production of articles for local consumption rather than around articles which were for consumption at a distance. Small shops for the production of men's and women's clothing of different sorts, boots and shoes, and similar lines predominated. There were, for example, 117 carpentry factories then in operation, many plumbing establishments, etc., all of which were "factories."

Men's clothing, including shirts, collars and furnishing goods, and women's clothing, including corsets, and the much-worn hoop skirts (for the manufacture of which there were 29 separate establishments) were all important. One hundred and forty-three establishments were devoted to the manufacture of various kinds of hats, including the high silk hat of that period.

The largest single class of manufacturing was to be found in the boot and shoe industry, there being approximately 500 of these establishments. The relatively small amount of capital invested, however, leads one to surmise that many of these "establishments" may have featured repair work, or hand production for individual orders, rather than production in the present-day sense of the word.

The beginnings of the piano industry, now of so much importance, also were apparent, there being 33 separate factories in 1860, with a capitalization of almost $2,000,000, devoted to the manufacture of these instruments.

Furniture manufacturing occupied more than 125 factories.

A glance at conditions twenty years later, namely in 1880, reveals a tremendous growth in the manufacturing system of the city. The Boroughs of Manhattan and The Bronx, which constituted New York City at that time, contained more than 11,000 establishments, which were capitalized at approximately $180,000,000.

Period of Progress.

Possibly the decade between 1880 and 1890 marks the period of most rapid increase in the city's manufacturing. During that ten years more than 14,000 separate and additional plants began operating here. The adjoining city of Brooklyn, a separate city at that time, doubled the number of its manufacturing establishments, showing an increase from 5,000 to 10,000.

The following tabulated statement shows the manufacturing conditions in the two periods in question:

MANUFACTURING IN NEW YORK CITY.

	1880.	1890.
No. of establishments.	11,273	25,403
Capital invested.....	$179,605,506	$426,118,272
Number of employees.	223,073	354,291
Amount paid in wages	$95,832,742	$230,102,167
Value of products....	$468,443,248	$777,222,721

MANUFACTURING IN BROOKLYN.

	1880.	1890.
No. of establishments..	5,195	10,583
Capital invested.....	$61,423,249	$161,730,500
Number of employees.	47,406	109,292
Amount paid in wages.	$22,425,467	$65,247,119
Value of products....	$177,022,398	$269,344,147

The principal industries that make up the above totals correspond closely to those which were described as predominant in 1860. Men's and women's clothing, slaughtering and meat packing, printing and publishing, occupy prominent places, while the production of tobacco, cigars and cigarettes, and the manufacture of malt liquors were important industries in the community.

A beginning of New York City's importance in connection with the output of foundry and machine shop products is apparent, inasmuch as $20,000,000 of these products were produced in New York City in 1890. The refining of sugar and molasses, and the roasting of coffee and spices had also appeared as leading industries.

During the last fifteen years the growth of manufacturing in New York City has been constant. Certain lines of manufacturing which were important in the early days have disappeared, in part because demand for their goods has

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I KNOW that the contents of a newspaper and the tastes of its readers can so harmonize as to effect a community of active interest highly profitable to both.

I KNOW that reader sympathy and reader response give to a newspaper an enviable circle, and when coupled with the means to buy that for which its advertising columns may have created a desire—the result is a trilogy of advertising values the worth-whileness of which cannot be disputed.

I AM that invaluable asset which has enabled **The New York Evening Post** to demonstrate to advertisers that the worth to them of the voluminous circulation of the so-called "popular newspaper" is based not on its entire distribution, but only on that portion of it which reaches readers really interested in what they have to offer; that the best medium is the one with undiluted circulation —the kind that everyone knows **The New York Evening Post** has. Its circulation is as homogeneous as that of any high-class periodical. It is **the** newspaper of the home of culture and refinement. It is read for **information,** not for **sensation**—and the "home genius" herself is one of the firmest attestants to the wisdom of publishing only such matter as is of permanent importance, whether it be news, editorial, feature or advertising.

Why gamble by buying dilution and dregs when the very essence of what the advertiser seeks can be had in the columns of

The New York Evening Post

More Than A Newspaper—A National Institution

ceased—for example, hoop skirts quoted above—and in part because of the spread of population toward the west, with a corresponding spread in centers of manufacturing. The table which follows shows the position of the city's manufacturing at four periods:

Year of Census.	Number of Establishments.	Total Persons Engaged in Industry.	Salaries and Wages Paid.	Capital Invested.	Value of Products.
1914	29,621	732,790	$510,710,612	$1,626,104,314	$2,292,832,000
1909	25,938	680,510	445,772,000	1,364,353,000	2,029,693,000
1904	20,839	552,952	321,156,000	1,042,94 ,000	1,526,523,000
1899	19,243	.....	248,312,000	853,238,000	1,172,870,000

The industries listed below represent the twenty largest lines of manufacturing during 1914, based upon the value of the materials produced. In this connection, it is interesting to note that whereas in 1909 the manufacture of men's clothing occupied second place, as it did in the census of 1904, in 1914 this industry dropped into third place, being surpassed by the value of the products of printing and publishing establishments It is further interesting to note that none of these twenty leading industries shows a decline in the value of its products in 1914 over the figures in 1904.

TWENTY LEADING INDUSTRIES IN NEW YORK CITY ACCORDING TO VALUE OF PRODUCTS.

	1904	1909	1914
Clothing, women's	$168,419,000	$266,477,000	$339,843,000
Printing and publishing	138,502,000	183,509,000	215,571,000
Clothing (men's), including shirts	149,484,000	218,411,000	192,112,000
Slaughtering and meat packing	55,938,000	95,862,000	110,707,000
Bread and other bakery products	44,000,000	61,904,000	80,056,000
Foundry and machine shop products	57,937,000	63,853,000	77,898,000
Tobacco manufactures	50,525,000	62,488,000	75,406,000
Millinery and lace goods (not elsewhere specified)	32,343,000	51,220,000	70,800,000
Liquors, malt	43,168,000	53,469,000	56,312,000
Gas, illuminating and heating	29,715,000	34,117,000	42,300,000
Patent medicines & compounds & druggists' preparations	18,116,000	24,984,000	30,156,000
Coffee and spice—roasting and grinding	25,807,000	15,819,000	29,861,000
Paint and varnish	22,830,000	26,664,000	29,277,000
Fur goods	25,279,000	39,874,000	29,071,000
Confectionery	14,045,000	20,062,000	28,555,000
Copper, tin and sheet-iron products	17,389,000	23,303,000	27,621,000
Boots and shoes, including cut stock and findings	13,687,000	18,376,000	26,162,000
Furnishing goods, men's	16,613,000	25,496,000	25,862,000
Musical instruments, pianos, organs and materials	18,930,000	25,516,000	25,130,000
Furniture and refrigerators	13,934,000	19,439,000	22,994,000

Manufacturing Conditions.

Manhattan.

The crowded condition found throughout all of Manhattan emphasizes two points:

(1) The results and dangers following the too intensive development of Manhattan along residential, manufacturing and merchandising lines.

(2) The industrial possibilities of the less crowded sections of the Greater City.

The intensive development just referred to with increased real estate values and resulting high rents prevents certain classes of manufacturing in Manhattan. It would, for example, be uneconomical to locate a saw mill in the downtown district. Light manufacturing, such as is conducted in lofts, is widespread throughout the borough. The lines produced are of such a nature that it is desirable that they be near ready avenues for distribution, and near the style centers of the city.

In spite of its high rents, however, large factory buildings are still to be found in certain sections of Manhattan. Such, for example, are the plants producing pianos and musical instruments.

The completion of the West Side Railroad development, which has been so long agitated, would stimulate manufacturing in the city's largest borough, inasmuch as trucking costs, the present bugbear of certain industries in Manhattan, will be materially reduced.

Bronx.

The borough of the Bronx taps New England territory on the east, and the district to the west through the New York, New Haven & Hartford and the New York Central railroads, both of which have important terminals in the borough. This facilitates the movement of materials and products.

Large areas of undeveloped land, combined with the long waterfront, are material inducements to manufacturing in that borough. The proposed marginal railway would further enhance these attractions.

With the growing crowded conditions in Manhattan, the Bronx has become the residential district for many of New York's workers, thereby insuring to the borough a large and versatile labor supply.

One of the leading industries in the borough is the manufacture of musical instruments, the construction of which is centered in the southern section of the borough, in which there are approximately 40 piano factories at the present time. The advantage of being located near this group of plants manufacturing similar lines is emphasized when one realizes that under modern practice pianos, like automobiles, are assembled, the different parts being produced in separate factories.

The future of this borough seems to turn largely upon the success with which her transportation facilities are developed.

Brooklyn.

Considering the borough of Brooklyn as a separate entity it ranks third in point of population in the United States, being surpassed only by New York, exclusive of Brooklyn, and Chicago.

Although it is frequently known as the City of Churches it might well be known also as the City of Terminals, inasmuch as railroad terminal facilities have been developed in that borough to a marked degree. These terminals attract manufacturing of a certain class, since they furnish facilities and service not obtainable elsewhere, the cost of which is included in the rental charges. They invite not only the lines of manufacturing which are known as loft manufacturing, but they also invite industries not hitherto considered in that class. For example, a paper mill is operated in one of the terminals in the borough.

In addition to lines of manufacturing found in these terminals, the borough manufactures products of a very different nature, such, for example, as foundry and machine shop products, boots and shoes, furniture, etc.

Clothing, millinery, foods, liquors and tobacco products are also manufactured in large quantities here, while the sugar refining and coffee roasting of the Greater City is centralized here.

Brooklyn's industrial development is based on:

(1) Comparatively cheap land, which means low rental rates as compared with similar costs in Manhattan.

(2) Nearness to Manhattan markets.

(3) Large number of rail terminals and steamship docks which facilitate the movement of raw materials and finished products.

(4) Suitable homes for workmen; therefore an abundant labor supply.

(5) The development of the connecting and marginal railways, which will further cheapen transportation costs in the borough.

Queens.

The borough of Queens is forging ahead in its industrial development to a remarkable degree. Not only have those lines of manufacturing which required considerable land space flourished in the borough, but a bid is being made for certain lines of loft manufacturing, which have hitherto been located chiefly in Manhattan and Brooklyn.

Perhaps the one leading feature which most encouraged industrial development in Queens was the opening of the Queensborough Bridge, which brought this hitherto undeveloped section of the city into close communication with the important markets in adjacent Manhattan. Large companies are developing terminals there which bid fair to compete successfully with the leading terminals in Brooklyn for certain lines of manufacturing.

It is estimated that at the present time there are between 1,100 and 1,200 manufacturing establishments in the borough, these being chiefly in the metal working, wood working, and garment and needle industries.

Smelting and refining plants produce products valued at over $100,000,000 annually. The sugar refining mills turn out $42,000,000 worth of sugar, and the automobile manufacturers produce $37,000,000 worth of products each year.

The most developed industrial section of this borough is at present crowded into an area lying along the East River, north and south of the Queensborough Bridge. The southern district, i. e., the section lying between the Queensborough Bridge and Newtown Creek, is the most congested, the section north of the bridge not as yet being fully developed industrially.

Richmond.

Staten Island, or the borough of Richmond, is closer geographically to New Jersey than to New York City. Its direct railroad connection is with New Jersey rather than New York, the Baltimore & Ohio entering the island on the northwestern side. Factories located on Staten Island, therefore, have the advantage of a direct rail shipment to the West and Southwest, a condition which is not true in any other borough.

The island is comparatively undeveloped, immense stretches of territory being found in the interior, which will later undoubtedly be used for residential and manufacturing purposes.

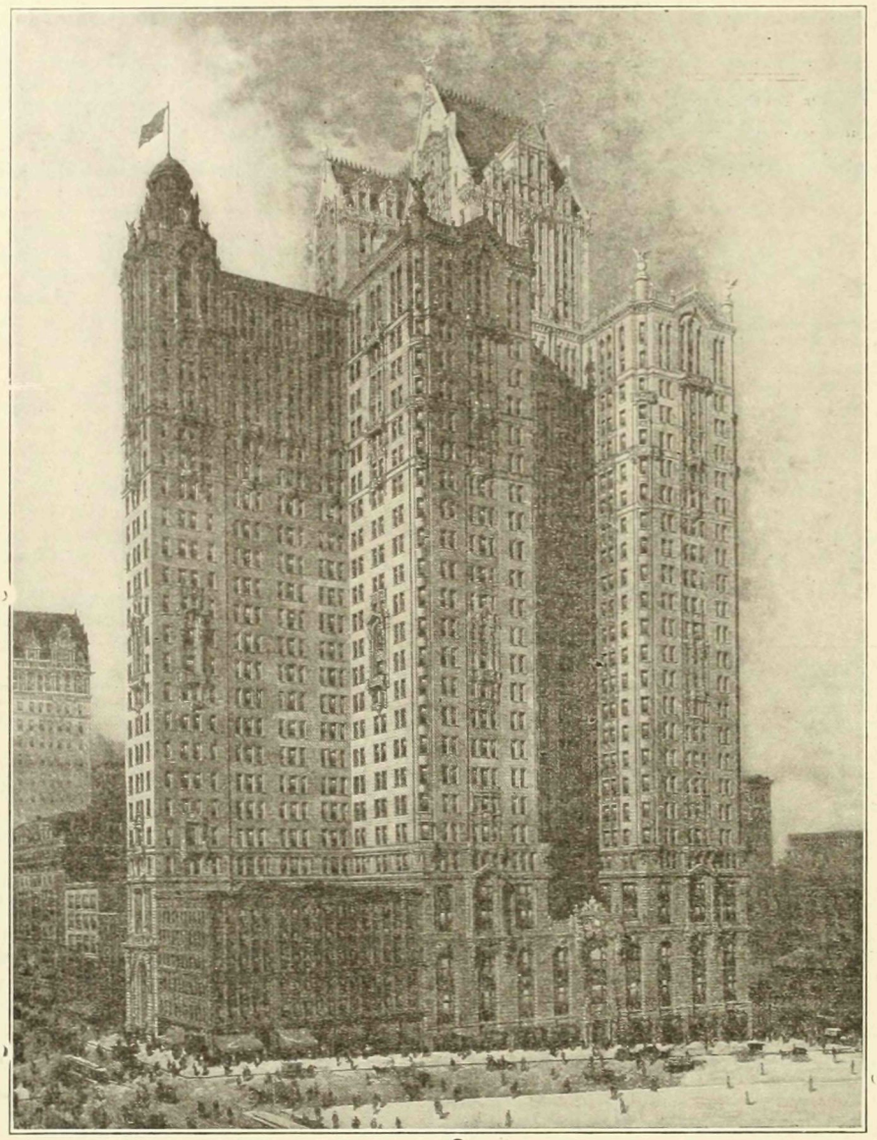
The present industrial area of Staten Island lies along its northern edge, and in certain scattered sections of the island to the south, including Linoleumville and Tottenville. The factories on the northern edge have direct access to the labor supply in adjacent New Jersey points, such as Bayonne, Elizabethport, etc, while Tottenville is easily reached from Perth Amboy.

The creation of an industrial railway extending down the western edge of the island would go far toward developing that side of Staten Island with factories similar to those directly across in New Jersey. The land in this part of the borough is not marshy, but hard and firm. Inasmuch as the Government has recently deepened the channel in Staten Island Sound, the development of this section of the borough should follow.

Merchants Aid Traffic.

The Merchants' Association, through its Traffic Bureau, has been actively interested in the freight congestion problem, which has come up within the last few months. The Bureau has been vigorously forestalling the possibility of a return of the freight congestion which seriously hampered the traffic lines leading into New York City last spring. It will be remembered that the accumulation of freight, the shortage of cars and the delays in traffic generally, almost tied up the Port of New York last winter.

The Traffic Bureau suggested to the railroads the re-establishment of the Freight Accumulation Conference Committee, which was created for the purpose of co-ordinating efforts on the part of the transportation lines and shippers to relieve the congestion. This committee did a great deal toward ameliorating the situation by bringing together the railroads, represented by the Central Committee and the shippers, represented by the Shippers Embargo Committee.



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ZONE RESOLUTION WILL CONSERVE VALUES

Builders and Owners Need Have No Apprehension as to Ultimate Result—Great Care Taken in Preparation

By LAWSON PURDY, Tax Commissioner

THE ordinance adopted by the Board of Estimate and Apportionment on July 25, regulating the height, bulk and use of buildings throughout the City of New York has been almost universally commended by those familiar with real estate development. Generally, it seems to be assumed that there is no doubt of the power of the Legislature to authorize the Board of Estimate to enact such regulations, but occasionally both lawyers and laymen seem to regard the constitutionality of the ordinance as at least doubtful. Those who take this view seem usually not to have read the recent decisions of the United States Supreme Court dealing with similar ordinances. Of course, no one can predict with certainty what will be the decision of the Courts of the State of New York, but we may be sure that the New York Courts will listen with respect to the decisions of the highest courts of other States, and to the decisions of the United States Supreme Court.

While the regulations adopted for the City of New York are vastly more elaborate and detailed and cover a much larger territory than similar ordinances adopted for other cities, the principles which have controlled the ordinances of other cities are the same as those which controlled the framing of the zoning ordinance of New York. The Supreme Court of the United States has declared that "the police power of the State embraces regulations designed to promote the public convenience, or the general prosperity, as well as regulations designed to promote the public health, the public morals or the public safety. * * * And the validity of a police regulation must depend upon the character of each case, and the character of each regulation, whether arbitrary or reasonable, and whether really designed to accomplish a legitimate public purpose."

The zoning ordinance was adopted primarily for public safety. It was designed to protect property from fire and the occupants of buildings from injury by fire and from loss. It was designed to protect the public health by so regulating buildings that there should be light and air enough for occupants of buildings, and so that congestion of population should be restrained in the interest of health and sanitation. The general welfare was sought by conserving the comfort and convenience of the dwellers in the city, and further the economic welfare of the community was sought to be protected by safeguarding the existing and future buildings and encouraging an appropriate building development.

The case which comes the nearest home to us in New York is that of Welch v. Swasey, 193 Mass. In that case the Supreme Court of Massachusetts upheld the rule adopted by a commission in Boston that a building should not exceed 80 feet in height, outside of a central zone, where office buildings are erected and where a height of 125 feet is permitted. Chief Justice Knowlton wrote the opinion for the court and in the course of his opinion declared that the erection of very high buildings in cities, especially upon narrow streets, may be carried so far as materially to exclude sunshine, light and air and thus to affect the public health. It may also increase the danger to persons and property from fire and be a subject for legislation on that ground. These are proper subjects for consideration in determining whether in a given case, rights of property in the use of land should be interfered with for the public good. The Chief Justice quotes with approval the case of Kemp v. D'Oench, 111 New York, in which a statute limiting the height of dwelling houses erected in the City of New York was treated as unquestionably constitutional. The court goes on to consider whether it is proper to establish different heights for different parts of the city and decides in the affirmative because among other reasons, the value of land and the demand for space in those parts of Boston, where the greater part of the buildings are used for business, is such as to call for buildings of greater height than are needed in those parts of the city where the greater part of the buildings are used for residential purposes. It was therefore reasonable to provide in the statute, that buildings might be erected to a greater height in the former parts of the city than in the latter. The Welch case was affirmed by the Supreme Court of the United States in 214, U. S. Writing for the Court, Mr. Justice Peckham said:

> "In passing upon questions of this character, as to the validity and reasonableness of a discrimination or classification in relation to limitations as to height of buildings in a large city, the matter of locality assumes an important aspect. The particular circumstances prevailing at the place or in the State where the law is to become operative; whether the statute is really adapted, regard being had to all the different and material facts, to bring about the results desired from its passage; whether it is well calculated to promote the general and public welfare, are all matters which the State court is familiar with, but a like familiarity cannot be ascribed to this court, assuming judicial notice may be taken of what is or ought to be generally known."

The City of Los Angeles was empowered to enact an ordinance dividing the territory into industrial and residential districts. The highest court of California upheld an ordinance prohibiting the maintenance of public laundries in a residential district, and said that whether a restriction upon the operation of a business in the city is reasonable is primarily for the determination of the City Council, and its action will not be disturbed by the courts unless the regulation has no relation to health, etc. In another district of Los Angeles, set apart as a residential district, there had been for a long time a brick kiln owned by one Hadacheck. Mr. Hadacheck was forced to abandon his business at very great loss. The California Supreme Court held that a municipal corporation may under its police power forbid the continued operation of a brick kiln within prescribed territory, although the business is not a nuisance per se and the value of the land where the business is conducted will be greatly diminished, and that of the machinery upon it practically destroyed by the enforcement of the ordinance, and that where the question, whether or not a particular business can be conducted in a certain district of the city without annoyance to people living in the district, is one upon which reasonable minds may differ, the court will not interfere with the act of the municipal corporation in forbidding such business. This ruling was sustained by the Supreme Court of the United States. Mr. Justice McKenna said:

> "It is to be remembered that we are dealing with one of the most essential powers of government, one that is the least limitable. It may, indeed, seem harsh in its exercise, usually is on some individual, but the imperative necessity for its existence precludes any limitation upon it when not exerted arbitrarily. A vested interest cannot be asserted against it because of conditions once obtaining. To so hold would preclude development and fix a city forever in its primitive conditions. There must be progress, and if in its march private interests are in the way they must yield to the good of the community."

It is highly important that the builders of this city should feel no doubt concerning the protection afforded by the ordinance enacted last July. That ordinance was really three years in process of development. An intensive study was made of every street of this entire great city. Limitations upon height and upon area and upon use were imposed in accordance with existing conditions and for the protection of the future, with the aim of securing owners against future disadvantage with the least possible injury to existing owners.

The fact that all the great lending institutions of the city appeared through their representatives before the Board of Estimate and urged the adoption of the ordinance furnishes very strong evidence that the ordinance will have the results it was intended to produce, namely, that it will enhance the value of the land throughout the city, taken as a whole; it will conserve the value of buildings and will better the welfare of the inhabitants of the City of New York for all time.

Public Inspection of Tax Records.

The duties of the Deputy Tax Commissioners and their clerks as outlined in a report some time ago, are interesting and indicative of the care exercised in arriving at the assessed valuations. During the time that the annual records are open for public inspection, taxpayers may make application in writing for the reduction of assessed valuation of any parcel in which they are interested. The deputies attend at the counter on which the books are displayed, and answer questions concerning the assessed values. They are expected to explain the method by which the assessed value of any property was reached, exhibiting the unit of land value, and the method of computing the value of a particular lot, the factor of value used for the building, and any other information in their possession which the taxpayer may request.

In many cases where assessments have been increased, the explanation satisfies the taxpayer that his assessment is not in excess of the market value of the property, and in harmony with valuations placed upon other properties in the vicinity. If, however, he is not satisfied, and wishes to appeal to the Commissioners, he is given a blank which contains appropriate questions to be answered concerning the character and value of the property. When such applications are filed, they are recorded by the Deputy in Charge of the Borough, and delivered to the Deputy who made the assessment with instructions to revisit the property and report back. If the Deputy, after his reappraisal does not revise his judgment and recommend a reduction, he is expected to correct the statement of fact made by the taxpayer or explain why his conclusions are erroneous. Later on the Tax Commissioners commence to hear the applications of persons who asked for an oral hearing by the Commission.

At the hearings by the Commissioners, the Deputy whose district is under consideration attends with his field book and map prepared to answer questions, concerning the assessments under consideration. At the close of the hearings, the annual record of the assessed valuations of real estate is prepared by the Deputies and their clerks, and when they are finished, they are signed by all the Commissioners. As soon as practicable the total assessed values are transmitted to the Comptroller.

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MODERN METHODS IN THE REGISTER'S OFFICE

Difficulty of Transforming a Political Office Into a Business Office—What Has Been Accomplished

By JOHN J. HOPPER, Register, New York County

WHEN I took charge of the Register's Office of New York County on January 1, 1914, I found a century-old office operating in much the same way that it was when first started. I found political traditions and archaic methods of work crystallized by a hundred years of habit, the breaking up of which induced a natural resistance in the minds of many people.

In managing an office that has always been considered political, many factors are present to contend with that are not found in a person's own business. I had had thirty years of successful business experience in New York City and had pledged myself to administer the Register's Office in a business way. In redeeming that pledge I immediately ran foul of the usual political conditions which took it for granted that I would abandon my pledge and permit the office to be run in the usual political rut of the past. In the disappointments that arose, "leaders" did all they could to annoy and delay, by stirring up dissensions among my employees, by beginning lawsuits to thwart my non-political appointments, by making false accusations — usually anonymously — to the Civil Service Commission and to bureaus of the Board of Estimate, and by charging that certain common-sense reforms were "against the law."

The Register's Office is a statutory office, and many of the laws regulating fees and administration were antiquated and restrictive.

I mention these matters not by way of apology, but to illustrate the difficulties which have been overcome in bringing the office to its present high state of efficiency.

The limits of space prevent a detailed statement of all the activities of the office, and I will simply enumerate the more important improvements that have been made.

Standard of Personnel Raised.

Appointments and promotions have been made only on merit under definite rules and according to approved lists. Systematic efficiency records, prepared monthly and publicly posted, govern promotions. Political, religious or racial differences have been disregarded. The result has been the development of a fine spirit of office loyalty among the employees.

Although four o'clock is the legal closing hour for the receipt of papers, we close at five o'clock, so that the business of the day is entered on the books that day and the next morning begins a new day with a clean slate. Rules for punctuality and attendance are strictly obeyed by the entire office.

I found clerks keeping sets of books required by no law and which were never looked at except by the clerks who made the entries and only for the purpose of making the entries. These books had been kept for so many years that no one knew their origin nor could explain their purpose. They were simply taken for granted and continued under the inertia of ignorance. These books I discontinued.

New Processes Installed.

Throughout the office, clerks were indexing and copying records by pen and ink—a laborious and expensive way with a very unsatisfactory product. With the exception of a few old-fashioned, worn out machines in the recording room, there were no typewriters in the office. Today there are over forty first-class modern typewriters in use and nearly all of the work of the office is done by them, with the result that the efficiency of the office has increased many fold. To illustrate:

In the bureau for the preservation of public records an average of 2,012 pages annually had been written by hand for the ten years prior to 1914. During 1914 typewriting was substituted for handwriting; clerks were taught to typewrite and special loose-leaf and spacing devices were invented by the division head. To install these improvements took about six months, but with all that the number of pages produced increased to 7,000 for the year 1914. In 1915, 15,000 pages were written, and for 1916 the number written will exceed 15,000 pages. In quantity the output, with the same number of men working, has increased more than seven-fold and the quality has immeasurably improved.

HON. JOHN J. HOPPER.

Current Daily Routine.

By defining the duties of each clerk the current instruments now feed automatically from one division to the next in order, so that each division receives its quota of papers at a definite time and each division completes its work on the day set. The result is that papers complete the transit through the office in four days and no work of today is left over until tomorrow.

Prior to 1914 no effective cross-checking of indexes and records was made and many errors resulted. By utilizing the men made available by economies in current routine processes and without asking any additional appropriation, we have been able to check the block indexes for conveyances and mortgages, consisting of over 900,000 instruments, for the period from 1891 to 1914. This checking will be finished in 1917, and includes the locating of the instruments by lots. The salaries of the men doing this work, all of which was saved by abolishing useless work, amount to $50,000.

By the use of current abstracting, and through the application of the lot system, cross-checks for accuracy are made a part of the daily routine so that future checking of records will not be necessary.

Title Examining Plant.

By coordinating the reindexing work for the period prior to 1891, the checking of indexes for the period from 1891 to 1914, and the current abstracting for the period after January 1, 1914, a complete locality title examining plant is now open to public use, which is equal (and by many stated to be superior) to any of the title companies' private plants. Nearly 70 per cent. of all realty transactions are now made upon searches made directly from the Register's office indexes.

By a law passed in 1916 the searches made by the Register's office are now guaranteed by the City of New York. The number of searches sold for the past year have increased 1200 per cent. over the previous year. They are produced within 24 hours. Last owners' cards, uncertified, are produced in a few minutes. Nearly 6,000 of these cards were issued during the past year. Mortgage information cards, uncertified, which give the particulars of all mortgages affecting any piece of property, are issued. A chattel mortgage card index, which is additional to the regular book index, has been in operation for two years and contains more than 150,000 names. By its use a chattel mortgage search can be made in five minutes or less. They are uncertified. Certified searches, guaranteed by the City of New York, are also issued.

Register's Standard Forms.

The use of the Register's standard forms increases accuracy, saves time in examining titles, and saves money to the County in recording papers. All legal stationers now sell these standard forms. Their use, however, is not compelled by law and real property owners are urged to insist upon the use of the standard forms.

When I came into office I found a great deal of back work left undone by former administrations. This has all been brought to date and all current work is kept up daily. The Bureau has compiled a compendium of mortgage tax decisions, affidavit forms and lists of tax exempt securities which have been published and are in general public use. The staff has been reduced in number from five to three with part time assistance of a stenographer, making a substantial money saving in salaries.

State Tax Commission.

The State Tax Commission has put its work on a better business basis than the previous commissions. This fact has expedited the work of the local bureaus, and apportionment cases and similar matters are taken care of promptly and efficiently. The result has been that a large amount of money which formerly remained in banks has been distributed to the various counties entitled to it. The Bureau, therefore, has collected less interest on bank balances this year than formerly, but the situation is far more wholesome and businesslike than ever before.

Early Days of Register's Office.

The early history of the Register's Office is very interesting and the growth of this branch of the government has been coincident with the remarkable growth of the state in its various other activities. Until the year 1800 instruments affecting title to property in New York were recorded at the office of the Secretary of State in Albany, and even after the law was passed requiring registration before a county official, the practice of recording in Albany as well as in New York continued. It was not until 1812 that the Register became the chief recording officer for New York County, and it was not until twenty years later that the offices of the Surrogate and the Register became sufficiently large to warrant their accommodation in a separate Hall of Records.

Information is not available regarding the early office staffs of the Register, but it is known that in 1849 when Cornelius V. Anderson held the position, the office staff consisted of one deputy, two searchers, one examiner, one collector and ten recording clerks, corresponding to the present-day folio writers. The Register received a salary of $3,000, his deputy half that amount, the searchers about $1,200, while the folio writers received five cents a sheet. The total income and disbursements of the office at that time were not more than $20,000 per annum, and it probably did not have more than 3,000 or 4,000 papers to record and index in the course of the year.

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THE GROWTH OF CITIES AND THEIR FOOD SUPPLY

Distribution of Food of Utmost Importance to Everyone Living in a Metropolis—Scientific Methods Necessary

By HON. CYRUS C. MILLER

FOOD distribution is a question of direct concern to the real estate owner, as it controls the future growth of the city. When the food supply stops, the city must stop. In the degree that it is retarded the city must be retarded. Unless sufficient food can be supplied to the city at prices which the city dweller can pay, he must cease to live in the city.

Prior to the year 1800, large inland cities were impossible, as the means of transportation of food were too crude. The sudden introduction of railroads and steamships gave a great impetus to the growth of cities.

Farm machinery increased tremendously the productivity of farms, large tracts of farming lands were opened and vast quantities of foodstuffs were brought to the cities at cheap prices. The result was a decline in the profits of farms, but the outlook for the indefinite growth of cities seemed certain. The world seemed free from any apprehension of a food shortage, and the cities felt no necessity of caring for the farmer.

Gradually, however, conditions changed. The rural population flocked to the cities, which grew amazingly at the expense of the country. Farm labor became dear and scarce. The population of both city and country grew faster than the means of production of foodstuffs and finally the cities failed to make provisions within themselves for economic distribution of foodstuffs. In the decade from 1900-1910 the urban population increased 38.4 per cent., while the whole population increased only 21 per cent. During the same period the production of principal crops increased 10 per cent. The average cost of twenty articles of food used by the workingman's family in 1890 was $1, while in 1914 it was $1.45. The United States Bureau of Labor Statistics show a rapid increase in these prices per family as follows: 1905, $115; 1906, $119.1; 1907, $125.9; 1908, $126.5; 1909, $131.2; 1910, $135.2; 1911, $134.9; 1912, $143.7.

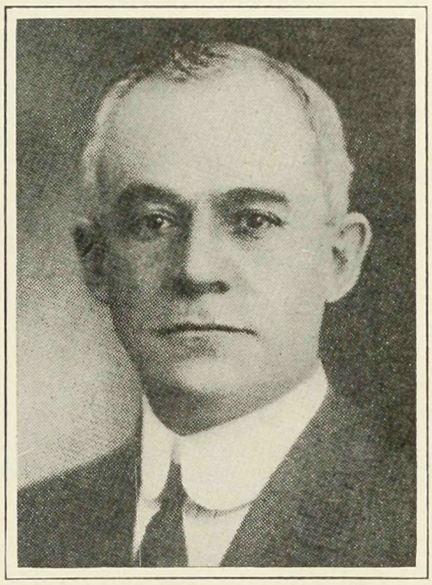
We have come to a period now where within a very few years, unless we change our methods, the rising prices of foodstuffs will have a retarding effect on the growth of the cities. Again we are conscious of a food shortage, not created by the war, for it has been approaching for years, but accentuated by it. Old conditions have passed. Large tracts of cheap lands are no longer available, labor will flock to the cities, the day of cheap foodstuffs with present methods has gone.

Only by scientific methods of growing, shipping and distribution may we hope to have a full supply at low prices. It is possible to do this and at the same time make the farms profitable, and in that way stop the abnormal drift to the cities, and preserve the balance of rural and urban population. If the country prospers the city also will prosper. The evils of overcrowded cities with insufficient food supplies may be avoided.

As the problem is one of railroad and shipping transportation, it is obvious that the city must supply adequate terminals for the receipt, storage, sale and distribution of the food supply. Terminal markets are necessary.

New York recently has experienced the sensation of realizing that in the future it will be a world center of finance. In this we take much pride. Money will flow into it from all quarters of the globe as naturally as water will run into a reservoir when the reservoir and its feeders are constructed properly. The supply being assured, all that is necessary is a proper distributing system. Our financial system has grown with the city.

Banks, stock exchanges, clearing houses and trust companies are simply mechanisms for the business of accumulating, holding and distributing money.



HON CYRUS C. MILLER.

They are all co-ordinated so as to be able to act in concert whenever great sums have been spent in the development of these facilities, and having them, we are ready to take a leading part in doing the financial business of the world. If anyone proposed to do without these agencies we would doubt his sanity.

Now what has been done by the city in a governmental way, or by groups of individuals in it, to provide facilities for receiving, storing and distributing foodstuffs? What have we to correspond with the co-ordinated facilities for carrying on our financial business? It is amazing to realize that our food business, handling as it does upwards of $900,000,000 worth annually and constituting 50 per cent. of the expenditure of the average working man's family, is left to the haphazard attention of unrelated individuals or groups of dealers. Everywhere is delay, waste, disorder. Everywhere methods of fifty years ago are good enough. Whenever we have a food shortage the popular pastime is to blame the middleman, forgetting that the middleman himself is the victim of a lack of system, and that the evils arising from food speculation would not be possible if the city itself furnished adequate facilities for carrying on the business.

Who is the middleman? Every man who handles the food in transit from the farm to the table, beginning with the man who buys from the farmer and including the railroad and all the intermediate men down to the retailer. The middleman is a necessity. He cannot contribute his part to the business economically unless he has proper facilities furnished to him. As our population increases the problem becomes more complex. We must install new methods for the great city of the future.

It is not my intention in an article necessarily as short as this must be, to try to state all the conditions which make for high prices of foodstuffs in the cities and hazardous business for the farmers in the country, but it is sufficient to say with relatively more consumers and less producers, prices must rise unless more scientific methods of producing and distributing are adopted.

So strong is the concentrating power of a large city that it attracts foodstuffs in such great volume that prices are apt to be as low or lower than those in a small city which has less complexities to overcome in distribution. Prices in New York should be much lower than in a small city. They should maintain a steady, low level. New York should be the distributing center for 500 miles around it. Much of this trade now is lost.

An improvement in our system of distributing foodstuffs must begin at the farm. The farmer must be taught to raise the kinds of food best suited for the city. He must be taught also to raise the crops which are best adapted for his part of the country so they can be handled in volumes. Rules for standard containers and grades must be adopted and enforced. Federal legislation will be necessary for uniform containers. All produce not properly graded and packed should be sold in the market as "miscellaneous," which will penalize the farmer for failing to grade and pack correctly.

The State or even the Federal Government can grant to the shipper the exclusive right to use trade marks or symbols so that he may gain the benefit of honest and uniform grading and packing. The railroads are doing now good work in transporting foodstuffs, but they must be supervised so that they maintain facilities adequate for the demand. The greatest change in physical equipment must be furnished by the cities. They must provide wholesale terminal markets convenient for rail and water transportation and located for storage and quick and easy distribution to the retail stores. The inland waterways of the country should be developed so that foodstuffs can come by water as well as rail at all times, especially when the railroads are paralyzed by labor troubles or congested with other business.

There should be at least one wholesale terminal market in each of the five boroughs of the City of New York. They should be self-supporting, and not a burden on the tax payer. At present the control over markets and marketing is exercised by the Finance Department, the Dock Department, the Bureau of Weights and Measures, the Health Department, the Police Department, the Department of Water Supply, Gas & Electricity, the Street Cleaning Department, the Bureau of Licenses, the Board of Estimate and Apportionment, the Board of Aldermen, the Fire Department, the Bureau of Fire Prevention and the Borough President. Naturally chaos reigns. What is everybody's business is nobody's business. A Department of Markets to have full control of the marketing business of the city should be established. After these things are done, a reform in the methods of retailing must be accomplished. Present methods of retailing are too expensive. At least 40 per cent. in the price is added by the retailer. He also is the victim of the lack of system.

It is one of the fundamental axioms in all changes of method that the fiercest opposition usually comes from the persons engaged in the industry directly affected. One of the most celebrated food experts in Germany told the writer several years ago that the opposition of the market dealers there to the establishment of modern terminal markets was very strong until the markets were established, when they were surprised to learn that instead of ruining the business the markets increased their business tremendously.

It was to be expected, therefore, that opposition to such markets would come from the market trade, some from unintelligent fear of any change, and more from opposition to interference with some little personal monopoly; but what can be said to opposition from the real estate fraternity generally? Their store tenants would do better business and their other tenants would be enabled to pay for better quarters if they did not spend half their wages for food. For the same reasons, merchants would be benefited because of the increased buying power of their customers. Workers would be more contented and efficient if they had an abundance of cheap food, and the heavy burden now laid on charity would be relieved.

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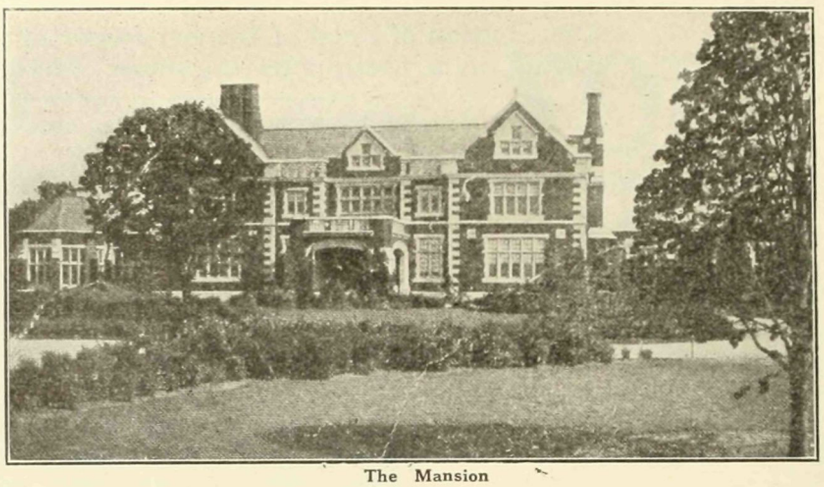

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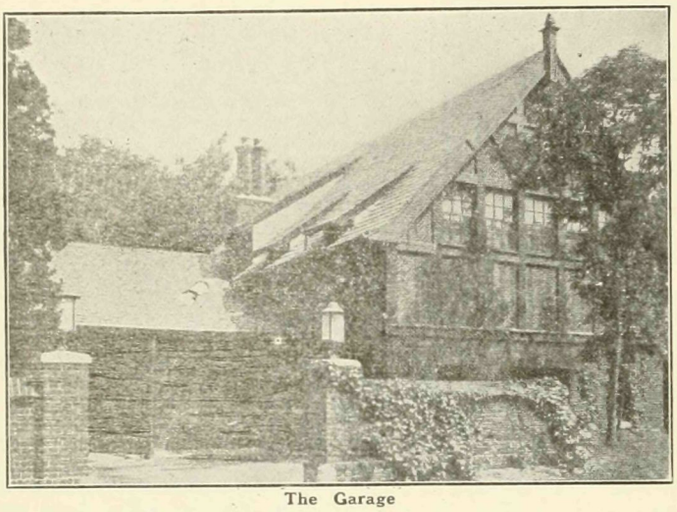

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ACTIVITIES OF THE DEPARTMENT OF DOCKS

Many Improvements in Manhattan Water Front—Mammoth Pier Erected In Brooklyn—Other Accomplishments During 1916

By R. A. C. SMITH, Commissioner of Docks and Ferries

THE total imports and exports passing through the Port of New York for the fiscal year ending June 30, 1916, amounted in value to over $3,500,000,000, an increase of almost 75 per cent. over the business under normal conditions prior to the European War. The demonstrated elasticity of the port facilities to care for so tremendous and unexpected an increase has been one of the most surprising and gratifying things in connection with recent port administration.

Recognizing the certainty of an enormous increase in tonnage, the Department of Docks and Ferries bent every effort to add to the physical equipment of the port. During the year there have been completed three enormous new freight piers between 29th street and 50th street, South Brooklyn, which add 9,580 feet of wharfage space and 568,500 square feet of dock space to the equipment of the harbor. The largest of these piers is located at 35th street. It is 1,740 feet in length by 175 feet in width and so far as our records show is the longest commercial pier in the world. These three piers are now actively in use and have contributed materially to the relief of congestion.

In the Borough of Manhattan there has been a great activity in waterfront reorganization and improvement. The first of the large passenger steamship piers under construction by the city at the foot of West 46th street was completed so far as the blasting out of the slips was concerned, permitting the removal of the huge steel and rip-rap cofferdam which had been used to hold back the waters of the Hudson River during excavation. The cofferdam has been practically removed and the substructure of the pier is almost completed. The whole project will be completed before the end of 1917.

The work of making over the piers at the foot of West 55th street, 56th street and 57th street into thoroughly modern steamship terminals was pushed rapidly during 1916 and the work is now well advanced. Upon the completion of these piers much of the Mediterrean service will be shifted to that point, adding to the proper and efficient organization of the port. Piers 8 and 9 on the lower North River waterfront were completed during the year under a contract between the City, the Lehigh Valley Railroad Company and the Central Railroad Company of New Jersey. These piers are admirably adapted for railroad and steamship uses and improve a waterfront section which for many years has been allowed to stagnate. On the East River an important new pier at the foot of Dover street, leased to the Baltimore & Ohio Railroad Company, was practically completed. Other relatively minor but important improvements were completed in all parts of the harbor. When the piers now under way are entirely completed the city will have provided since 1914 almost seven miles of wharfage space and deck space approximating forty-five acres.

During the year the Department has continued its efforts to secure favorable action by the Federal authorities for the deepening of channels at the Port of New York, particularly those in the East River. No real progress can be made in developing the East River waterfront with the type of pier which should be built in that section to handle properly the commerce of the port until funds are provided for dredging channels of sufficient depth to take care of the commerce which seeks accommodation. The first definite step in this improvement is now under way in the removal of Coenties Reef to a depth of 40 feet below mean low water. This improvement was secured through an undertaking by the city to pay for the removal of material between the 35-foot and 40-foot levels. Under this agreement the city is paying $123,221 out of a total of $196,900.

COMMISSIONER R. A. C. SMITH.

On August 17, the city was fortunate in securing the attendance of a majority of the Committee on Rivers and Harbors of the House of Representatives, and an opportunity was offered to show this committee the needs of the port through trips around the harbor extending over the major part of two days. This is the first time that the city has been able to present the matter to a Congressional committee and the only way in which it can be brought forcibly to their attention and their real interest aroused.

Perhaps the most important incident of the year was the petition which has been presented to the Interstate Commerce Commission by certain New Jersey interests to secure an order compelling the railroads having their main terminals on the New Jersey shore to discontinue the practice of furnishing free lighterage to the City of New York. It is the expressed hope of the petitioners that their success would lead to a rapid shifting of industrial plants to New Jersey owing to the impossibility of New York interests meeting the differential. Both the city and State of New York have secured special counsel to oppose the matter before the Interstate Commerce Commission and practically all of the important commercial organizations have joined in a defence of the city's interests. It is a matter which vitally affects the prosperity of the entire city and is of particular interest to those owning real estate. The case has had preliminary hearings, at which the matter was debated by the various interests.

NEW INVESTORS AND SPECULATORS APPEARING IN THE AUCTION ROOM

By JOSEPH P. DAY

THE auction market for the year 1916 was not a sensational one, or one replete with many large offerings at voluntary sale, or the auction sale of many large estates. The general tendency of the auctioneers was to advise their clients that the present market was not a propitious one for securing successful results, and unless the need or desire to sell the properties was most urgent or pressing, they were not offered.

While the number of properties offered was less than in previous years, through a careful supervision of the offerings, it is my opinion that the proportion of the number disposed of to outside interests was larger than it was for two or three years previous.

One of the largest lot sales of the year, was the one held at Belle Harbor, in July, in which the Belle Harbor Realty Company offered all the lots remaining in their possession at absolute sale for the purpose of winding up the affairs of the company. All the lots were disposed of, and at prices said to be satisfactory to the sellers.

A little later on, there was a sale of lots at Deal Beach, N. J., where about 200 plots were disposed of, and at prices which were near the retail prices asked by other owners in the neighborhood.

In October, the Manhattan Beach Realty Corporation decided to sell all the remaining lots in their improved section, at absolute auction sale, and this sale showed that there was a good purchasing power in the market for property that really possessed special merits and attractive features. The sale was held after the end of the active summer market for this class of property.

During the past year I have noticed an ever-increasing number of new, hitherto unknown generally, real estate buyers, purchasing at the auction sales. This injection of new blood in the market is a promising sign, increasing as it does the buying power and imparting a healthier general condition. Among this class, there is a large sprinkling of Wall street speculators and investors who are reinvesting their stock profits in safe and conservative real estate inducements.

I have also noticed, during the year, an increasing attendance of the speculative buyers, which is a good sign, as they are shrewd judges of real estate conditions. It infers that they are of the opinion that a change for the better is coming to the real estate field; that despite the fact of the great war, the bottom of the market has passed, and that the present time is a propitious one to purchase and to hold for enhancement of values. The signs all point to an early general revival of interest in real estate.

Monetary conditions are always, to a great extent, the pulse of the real estate market. In this connection it might be mentioned that there was hardly ever a time when the banks, trust companies and other various institutions had more money to loan on real estate, if the security was good. Furthermore, the people who control these funds are anxious to make liberal loans on well located property at low rates of interest. This is quite different from the beginning of 1916, when we saw a tight money condition, with rates of interest of 5 per cent. and 5½ per cent. prevailing.

There can be no doubt that the prosperity in which the average business man has a share today is going to greatly increase the buying power of the general public, and I look forward to an increasing interest in auction sales. I believe that 1917 will see an activity in the auction salesroom such as we have not seen in several years, and that owners of real estate, particularly executors and trustees, who have estates to liquidate will find a good market for their offerings in the coming year, and at prices which will be satisfactory.

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ONE CONTRIBUTING CAUSE FOR GROWTH OF CITY

When Gas Came Into Universal Use, Realty Values Increased —Builders Realize Mistake Not to Pipe All New Structures

By ROBERT E. LIVINGSTON, of Consolidated Gas Co.

IMAGINE yourself entering the real estate salesroom last Wednesday just in time to hear an auctioneer declare as "sold"—to the highest bidder of course—lots on Fifth avenue between 40th and 46th streets at $6,000 and $7,000 a lot. First you would question the reliability of your ears and on confirmation of the figures you might have doubted your power of understanding. Still, had you attended an auction sale on October 12, 1858, of lots located as above described, you would have heard A. J. Bleecker & Sons sell the property at the figures given above. Eight years earlier (in 1850), lots at Fifth avenue and 58th street, where Mrs. Cornelius Vanderbilt's house now stands, were sold for $520 and $710 each.

Those illustrations of real estate values, less than three score and ten years ago, forcibly impress one with the tremendous strides our city has been and is making and lead one to consider those elements that have contributed to the wonderful expansion, both in realty values and in population. These have to be considered together, for what affected values must necessarily have had its influence on population. The New York Gas Light Company was incorporated in 1823, when Canal street was the city's northern boundary, so far as the population of 150,500 was concerned. Samuel Leggett was the president of the gas company and his house, 7 Cherry street, was the first to be lighted by gas. The commodity, then used exclusively for illuminating purposes, was sold for one dollar per hundred cubic feet or ten dollars per thousand. A rental charge was made for a meter and also for gas fixtures.

Company's First Works.

The New York Gas Light Company's original works were at Center and Hester streets and Canal and Hester streets. In 1853 the company moved to new works at 21st street and Avenue A. The company extended its system so that it had 120 miles of mains and in 1859 the city's population had grown to 810,000. The Manhattan Gas Light Company was the second in the field and was incorporated in 1830. Its plant was located at Tenth avenue and 18th street. In 1855 the Metropolitan Gas Light Company was incorporated and in 1859 the Harlem Gas Light Company came into existence. These dates should be remembered in connection with the prices obtained for property at the Bleecker sale, as mentioned above.

Fifth avenue had been opened in August, 1824, from Waverly place to 13th street; from 13th to 21st street in May 1830; 21st to 42d street in October, 1837. The grading and paving, however, were not done until many years afterward. As late as 1859 Fifth avenue at 59th street was a muddy dirt road which ran alongside a bog.

The year of the first introduction of gas (1823) the Potter's Field (now Washington Square) was leveled, filled in, and abandoned as a place of burial. At that time, and for many years afterward, there were scattered throughout Manhattan Island the Villages of Greenwich, Chelsea, Bloomingdale, Manhattanville, Yorkville, Carmansville, reached solely by winding country roads, only two main longitudinal thoroughfares being in existence, the Boston Post road on the east side and Bloomingdale road on the west side.

The gas companies that have been mentioned and others that followed in their wake began to develop their systems of mains throughout their respective territories in the southern, middle and northern sections of Manhattan Island. In the territory now known as

ROBERT E. LIVINGSTON.

the Bronx land was dealt in by the acreage. The competition between the gas pioneers was keen and in developing farm land into valuable streets, avenues and building lots there were many instances where an unfortunate duplication of mains occurred. This condition was changed for the public good when the Consolidated Gas Company came into existence in 1884 and several of the gas companies that had contributed to the confusion were brought together and made one responsible concrete organization.

It is impossible to obtain the figures showing the assessed valuation of New York City's realty in 1823, but on October 1, 1916, we have for Manhattan alone $5,129,830,629, with real estate exempted amounting to $1,456,659,437, or a total of $6,586,490,066. The assessed values in the Bronx amount to $698,869,196; exempt from taxes, $170,064,195, or a total of $868,933,391. With the introduction of gas, real estate developers today immediately add a large percentage to their selling prices and accentuate the word "gas" in their advertising.

The mains in our streets and avenues today approximate 1,500 miles and many mains are of 60 inches diameter, the largest in the world. In some cases there are 72 inch mains in use. The gas holder of the Astoria Light, Heat and Power Company, at Astoria, L. I., holds 15,000,000 cubic feet of gas and is the largest in the world. There are more than 900,000 gas meters in use in the Boroughs of Manhattan and the Bronx. The combined sales of gas in 1915 by the Consolidated Gas Company and its affiliated gas companies was 29,166,894,000 cubic feet. The taxes charged against the earnings of the Consolidated Company and its affiliated gas and electric companies amount to about four and a half million dollars.

Gas An Industrial Necessity.

At a cost of more than six and a half million dollars a year for repairs and renewals all of these properties are maintained at the highest point of operating efficiency, thus insuring the best results as to the quality of the service rendered the public.

In no other city in this country are gas ranges rented. This system was introduced by the Consolidated Gas Company and its saving of investment of capital to landlords and tenants has amounted to hundreds of thousands of dollars.

Gas is now used to a greater extent than ever before for industrial purposes. There is scarcely a field of endeavor in which gas appliances are not to be found. The use of gas in this direction is growing rapidly. Its rise for lighting purposes is also increasing as every endeavor is being made by the gas companies to have their customers discard the old flat flame burners and adopt mantle lighting, which is more economical and gives far better lighting effects. The importance of the heat unit standard is now realized by the gas using public.

The fallacy of constructing buildings and omitting a thorough system of gas pipes is now realized by owners, architects and builders. In innumerable cases, where tenants have required gas, the pipes have had to be installed at additional expense and the newly laid floors and newly built walls have had to be disturbed.

When one gives due consideration to the growth of New York City and the contributing causes, it must be acknowledged that gas, as much as any other factor, has played an important part. It has led, and wealth and population have followed. Each day brings for it a new use, and so, too, improvements in gas using appliances are constantly being made that it may keep adding to the comfort of this generation.

IN OLD WILLIAMSBURG.

Section Invaded by Apartment House Builders—Fine Transit Facilities.

APARTMENT house builders have invaded that section of Williamsburg which up to now has been devoted to private dwelling improvement. Probably the last section in Brooklyn to undergo a radical transformation is the Eastern District section, and today there are several up-to-date multi-family structures under course of construction, which when completed will bring to the section a large number of families.

With the completion of the Williamsburg Bridge the old line residents made haste to change their environment. Their places have been taken largely by families with much smaller incomes and the once fine homes have been changed into tenements.

The most potent factor in the new trend is at the 14th street-North 7th street subway, for which the Eastern District, through the Eastern District Subway League, has been fighting for years. This new means of transportation will raise Williamsburg to as high a level as any other section in the Borough so far as transit is concerned, giving quick and easy access to all parts of Manhattan by way of the Dual Subway system.

Enough of the old "home" atmosphere, however, has been retained by the section to make apartment houses thoroughly desirable for discriminating home makers. Scattered through the immediate neighborhood of the "fountain" at Bedford and Division avenues are many fine old homes, the owners of which have held out valiantly against the influx of an alien population. They are homes of wealth and refinement, and the families in almost every instance have been reluctant to remove from a section in which their forefathers had lived.

Quick to seize the opportunity afforded by this situation, builders of apartment houses have begun the construction of high class houses. One of the most elaborate of these is a fine apartment house now in course of erection at Bedford and Division avenues, which will cost $250,000.

Supplementing this activity are several other projects of similar character on Division avenue, between Driggs and Marcy avenues. A row of modern "walk-ups" is in course of completion at the intersection of the Grand street extension, Hooper and South 1st streets.

NEW YORK BUILDING MANAGERS' ASSOCIATION

What Has Been Accomplished During 1916— Many Questions Vital to Realty Owners Analyzed

By RAYMOND P. ROBERTS, Secretary of the Association

THE third year of the New York Building Managers' Association has proved the most succesful one since its formation. Organized by a small number of men engaged primarily in the operation and management of large downtown buildings, it has gradually increased its membership until today nearly all the large brokerage and management firms in the city are represented, as are also many of the large corporations managing their own properties. Among these latter are the Interborough Rapid Transit, the express companies, the telephone company and the life insurance and trust companies.

The original idea of the founders was an association where the members might meet in a friendly fashion and exchange ideas on the proper and economical management of buildings. The scope of the association has gradually broadened until nearly every phase of real estate activity is now taken up by the members and carefully studied with the view of procuring efficient and economical results for property owners and at the same time conserving the interests of tenants and the general public welfare.

The general management of the association is in the hands of a good sized executive committee, and the work of the various departments is carried on by standing committees selected from the executive body and the association at large. Owing to the fact that in the last few years there have been many changes in the laws affecting real estate and new laws and ordinances are constantly being introduced, it has become necessary for the association to devote considerable time to legislative matters. By working with the city and State officials and other real estate organizations much has been accomplished in the way of relieving the pressure of many of the laws regarding buildings, without destroying the purpose of public safety for which these laws were framed. During the past year a number of very important public matters affecting real estate have been taken up and many good results obtained.

The fuel question has always been one of the most important in the operation of buildings and during the last few years it has assumed larger proportions than ever, owing to the steadily increasing cost of all kinds of coal. Early in the year this question was taken up and after thorough discussion it was decided to work in conjunction with the Real Estate Board and other organizations with a view to bringing pressure to bear upon the authorities at Washington to make a thorough investigation of the entire coal situation, and ascertain if the present retail prices were justified or were being arbitrarily raised for the benefit of the dealers. An immense number of petitions from users of coal were obtained and forwarded to Washington and after considerable correspondence with the authorities, the association was notified that the Federal Trade Commission was making an exhaustive investigation of the matter and would report to Congress at its next session. It was stated that the question of whether or not anthracite coal is a natural monopoly would be thoroughly canvassed and a positive conclusion reached. It is believed that the next step will be to investigate the process and cost of production and fix, by Congressional action, a reasonable limit of profit and a maximum retail price.

The question of ash removal from buildings by the authorities in return for taxes paid, is another subject which had been considered at some length by the association. We believe that ash removal from all buildings is a normal function of the city government but under existing conditions, ashes are being removed from residential properties and from some business buildings, but not from office structures except in a few cases where there has evidently been some favoritism. Owing to the excessive budget for this year it is doubtful if much can be really accomplished, but the association intends to follow this up vigorously with the hope that we may eventually get a satisfactory law for a uniform ash removal from all buildings.

Another subject important to property owners is wages of employees in buildings. This matter has received considerable attention from the association and much data regarding wages and hours of labor have been collected. In these days of scarcity of unskilled labor it has been rather difficult to establish any hard and fast schedule of wages and hours but a classification of the different kinds of buildings has been made and the members of the association are endeavoring to bring about an equalization of wages and hours in buildings of each class in such manner as will be just to both employer and employee.

All owners of large buildings have suffered, in recent years from theft of brass hose couplings and nozzles and this matter has received the attention it deserved. The experience of the different managers has proved that brass and iron when threaded together do not show sufficient corrosion to prevent them from being readily taken apart. Our committee after much work with the Fire Department obtained from it a ruling that, while the coupling which attaches the hose to the standpipe must be of brass or bronze, the other couplings may have one section of corrosive metal, provided the other part is of brass or bronze or has brass or bronze threads of substantial thickness properly keyed to the corrosive parts of the couplings.

Later the department also ruled that the alloy known as M. H. Aterite, may be employed as a substitute for brass or bronze wherever the latter have been previously required. Where installations are made under these new rulings the danger of theft is greatly minimized and in this respect the association has accomplished an excellent result.

One of the most important of the association's committees is that known as the Legislative Committee whose chairman is a man of very broad experience in the field. This committee has spent a very large amount of time in considering proposed laws affecting real estate and also existing laws where modifications have been deemed necessary or advisable. The committee has consulted with the Building Superintendent, the Tenement House Department, the Labor Department, the Industrial Commission and the Board of Standards and Appeals in an endeavor to obtain fairer treatment for the property owners without interfering with the general purpose of the laws. Among the most notable activities of this committee during 1916 have been the preparation and amending of rules for fire escapes as a secondary means of exit in factory buildings, the modification of interior fire alarm systems for factory buildings and changes in the law regarding hoistways, whereby proper safety can be obtained at less cost to the owner. At the present time the committee is working on a proposed amendment to the Labor Law which will more clearly define a factory and a factory building. This amendment will be introduced at the coming session of the legislature and is of great importance to property owners.

The association has long believed that fire insurance rates in this city were exorbitant in very many cases and the insurance committee is endeavoring to work out a plan whereby more equitable rates may be obtained, particularly on office buildings.

Recently the Committee on Department Orders has taken up with the Tenement House Department the question of forcing tenants rather than landlords to be held responsible for violation in tenements where such violations are the result of carelessness or improper conduct on the part of tenants. As a result we have been notified by the Tenement House Commissioner that he expects in the near future to have his inspectors instruct tenants to maintain their own toilets in a cleanly condition and to direct certain violations for blocking exits and fire escapes against tenants instead of the landlords.

On the whole the association feels that it is working hard along all lines for the direct benefit of the property owner and that it is entitled to the heartiest support of all those interested in the scientific, economical and efficient management of property.

"SAVE NEW YORK."

(Continued from Page 25.)

hundred feet by one hundred and fifty feet, running through from Broadway to Seventh avenue, was given up by the promoters as their proposed tenants would not move into the Save New York Zone. The theatre and hotel districts which center on Broadway would have been ruined, whereas now they are free to develop, and property values of every cross street from Third to Seventh avenues would have been seriously affected in the same way.

In the past years, real estate in New York has suffered because a perfectly good residential or retail street would be invaded by factory buildings, and from some older section, where the factories had been located, there was an exodus of tenants that spelled ruin, too.

The efforts of the Save New York Movement are bearing fruit, even though it has been under way less than a year, and will be more evident as time goes on, and plans are fully carried out. The effect is already most noticeable between 14th and 23d streets. A year ago, fifty per cent. of the loft buildings in that section were vacant. Owners were in despair. Holders of mortgages would have owned a large portion of the buildings if they had insisted on payments due them. The future was black. But now this has all been changed, for the buildings are filling up again, at advancing rentals, and investments in this section of the city will be sure to pay in the future, for productive loft buildings will command much higher prices than are asked for them today.

The overflow from the East Side, and from the manufacturing section between 14th and 23d streets, should come near filling the section further downtown, along Greene street from Canal street north. All real estate throughout Manhattan should benefit by better location of the garment industries in permanent quarters.

During the last ten years, taxes have risen every year on account of the heavy reductions of assessed values made necessary by the shifting of centers as manufacturers moved uptown, leaving abandoned buildings in their wake. Now this migration has been stopped and new manufacturing centers will be established on lines that create and maintain taxable values instead of blindly destroying them.

New York City has lost millions of dollars worth of taxable values yearly through this migration and would have lost more had the migration been permitted to go on. Through the Zoning Law and the Save New York Movement these losses have been checked and tax rates should now go down on every piece of real estate in Manhattan for the simple reason that industry and population will be intelligently distributed, and taxation will become an even charge instead of a shifting burden on one locality after another, as each in turn was exploited by speculators.

THE NEW BOARD OF STANDARDS AND APPEALS

A Brief Comment on the Work Done During the First Three Months, October 1 to December 31

By WILLIAM CRAWFORD

THE first quarter of the existence of the new Appellate Board has fully demonstrated to the watching public its usefulness and fitness for its special work, as well as its flexibility in operation. In most undertakings of such moment, the first year is considered more or less preliminary, but in this instance there is such an unusual combination of well thought out legislative intent, executive planning and co-operative zeal on the part of the personnel as to show results from the very first session.

It is not necessary to repeat the history of events in the real estate world that culminated in the passage of the Lockwood-Ellenbogen bill last May; for to the Record and Guide and its wide circle of readers it would be as a twice-told tale. First of all, the Board is most fortunate in having the author of the new building code and former Superintendent of the Manhattan Bureau of Buildings for its chairman, Rudolph P. Miller, whose long experience and special gifts pre-eminently fit him for the post; his acceptance of the onerous duties of the position, by appointment of the Mayor, giving satisfaction to all concerned.

Another factor that has helped in the furthering of the work has been the appointment of three former members of the Board of Examiners to serve on the new Board of Appeals, this bringing into service men of experience in board routine and decision, accustomed to working together in harmony on difficult problems; and also well known to the chairman, Mr. Miller, as well as to each other, this combined association of experience in professional work expediting whatever has been attempted in the starting of the new programs and duties. The other appointments made by the Mayor have proved most excellent ones, every man proving able in work and congenial in all associations arising therefrom. This circumstance gave an impetus to the organization which has carried it without a hitch over all initial difficulties.

The Board of Examiners had appellate jurisdiction over decisions of the Superintendent of Buildings only, but the new Board of Appeals can review the decisions of nearly all city departments, except the Tenement House Department. The old board with its limited jurisdiction passed on four hundred appeals in 1915; the new Board, with this widened jurisdiction, has passed on nearly that number in the first quarter of its existence, justifying the wise policy of the real estate experts who drafted the creating law, tending to relieve the dissatisfaction that has so long existed in real estate circles, and giving help desired and needed to the small owners and investors. This, without mentioning the work of organization, which was in itself a task of magnitude.

The offices of the new Board are now located on the ninth floor of the Municipal Building, rooms 914 to 919. Temporarily, the public hearings and meetings were held in the trial room of Fire Headquarters, room 1124; but after January 1, the meetings are held in room 919. The meetings are well attended, often a "standing room only" crowd, the general public as well as architects and appellants seeming vitally interested in the arguments made and decisions rendered. A surprising number of women have appeared in the audiences, either as real estate owners or tenants; and many have spoken in their own interest on pending appeals, even when represented by architect or attorney.

This is particularly true in the Building Zone Resolution cases, where women object to a garage coming into a neighborhood, on account of the noise, dirt and danger to children playing in the streets. For it should be noted, that not only are protestants heard in all cases when the privilege is requested, but appellants are compelled to notify all owners in the vicinity in regard to the proposed appeal, giving definite information as to the day and hour of the hearing; and to prevent any possibility of misunderstanding or inadequate notice. Duplicate of the notice sent out is required to be filed with the appeal papers. Furthermore, consents of adjoining owners are required to be filed in many cases; while it is a uniform rule that photographs of the property under discussion, showing both sides of the street as well as the premises involved, together with a diagram of the entire block having the use and occupancy of each parcel marked thereon, must be filed before a hearing.

WILLIAM CRAWFORD.

All papers, photographs, plans or diagrams are required to be 8x10½ inches in size—the usual commercial letterhead—to secure uniformity of filing and binding papers. Nearly all appellants gladly co-operate in the effort to make the record as complete and clear as possible, and in the few instances where the advisability of doing so was ignored or neglected, the omissions have been subsequently remedied perforce, because the Board laid over appeals without action, pending the satisfactory filing of required data. The repetition of such lessons in procedure will not be needed many times; in other words, if a man seeks relief in equity, he must first help himself by supplying all the facts and proofs necessary for proper determination of the question; his failure or omission only resulting in delay and hindrance to himself.

It should be noted that whenever possible the decisions of the Board are made to apply generally. For example, the Board has ruled that existing stables and existing garages are in the same category; that a stable may be converted to a garage, or vice versa, provided the structural alterations required for the changed use are within limits, and that all other laws and ordinances affecting the use are complied with. The decision in the case which brought out this ruling was mailed not only to the appellant, but to each of the Superintendents of Buildings, with the information that similar cases need not be sent to the Board on appeal; that the ruling thereby established should be deemed to govern, without further individual appeals.

Other questions and appeals could be cited at length, but this briefly is sufficient to indicate the policy being followed to save not only the time of the Board, but of the various Superintendents of Buildings, the public as well and the patient, long suffering, taxpaying real estate owner. The work is only begun, it is true, but it is clearly seen that a long step has been made in the right direction.

Another phase of the work of vital importance to the public is that the practise of all five boroughs is being gradually made uniform by two factors. First, all the Superintendents of Buildings sit as members of the Board of Standards and Appeals, the ruling laid down being equally binding on all; and, second, the decisions of the Board of Appeals are forwarded to the Superintendent in each case for his information and guidance.

The work has not yet reached the pace and facility planned, despite the devoted efforts of all—both personnel and staff. It is desired to do many things which are not as yet feasible. Some complaints have been made that decisions are not mailed out to appellants as promptly as they should be; but allowances must be made for a time, as the staff allowed the chairman by the authorities is not large enough to handle with expedition the rush of work and the volume of business that is developing so rapidly through the appreciation of the Board's facilities by the real estate world. It takes time, as we all know, to change the plan and scope of a city department office schedule, whereas a private business enterprise could be adjusted to meet the growth almost automatically.

The work has grown daily in interest and importance, and I venture to predict that ere the first year's work is completed the building interests will wonder how it has managed heretofore. May I add one word? In a little summer resort lobby I once saw this pithy notice:

"If you see anything you don't like, tell us."

"If you see anything you do like, tell others."

In other words, citizens must co-operate in this as in all other great public improvements and undertakings. Co-operation is essential, for we are all working together for the ultimate good of the community and the taxpayers.

The Old Board of Examiners.

The Board of Examiners, which has been replaced by the new Board of Standards and Appeals, as a result of the passage of the Lockwood-Ellenbogen bill, came into being in June, 1874; first, as part of the Fire Department, then in the Building Department, and eventually became a separate department under the Revised Charter of 1901, under which it continued until October 1, 1916, when it passed out of existence. During the year 1915, 393 appeals were filed with the Board, which rendered 396 decisions. The appeals varied in importance from comparatively small matters in frame construction to new problems in the science of building not contemplated or provided for when the old Building Code was written.

For the first half of 1916 the number of appeals was considerably less than during the corresponding period in 1915, as a result of the adoption of the new Building Code. In Manhattan there were 31 appeals heard, in the Bronx 9, in Brooklyn 18 and in Queens 7. Complete details regarding these appeals, including the plan number, the location of the property concerned, the name of the appellant, the kind of property and the decision for the first six months of the year, were published in the Record and Guide of July 29, from compilations made by Mrs. Minna Dyke Clark, secretary of the Board of Examiners.

MORTGAGE MONEY MARKET SHOWS THAT CONDITIONS ARE HEALTHY

By ARTHUR D. PAYNE, Treasurer, A. W. McLaughlin & Co.

A POINT of vantage has been reached in the mortgage market from which, looking backward, its trend during the last two years or more can be traced with more or less distinctness; and, looking forward, its future progress anticipated in the light of the past and present known conditions. The depression which existed in 1913 had shown marked signs of lifting in the spring and early summer of 1914. The outbreak of hostilities in Europe in August of the latter year upset all calculations and produced a confusion from which recovery was slow with the usual accompaniments of scarcity of money and high rates of interest, but the recovery came, and has been steadily progressing although retarded and at times apparently halted by political and financial happenings—some actual, others only anticipated or apprehended. Present conditions are decidedly more favorable than at any time within the last three years, and, judging the future from the past, there is small reason to doubt that progress will be steady, that some retarding conditions now existing will disappear, and other conditions making for improvement will become more effective.

Ample funds are now available for mortgage loans. The prevailing rate is 5% with plenty of money for the choicer loans at 4½%. Only under exceptional circumstances, the 5½% or even 6% rate which prevailed twelve or eighteen months ago is a thing of the past. Some investors willing to take a little risk—generally more apparent than real—can still obtain 5½%, as can others whose extent of resources and other facilities enable them to practically command a certain class of investment and that, too, of a high grade.

True, the volume of business is not large. Those who follow the daily record of mortgage transactions are well aware of this. But several important loans have found a market, and more will do so as the conditions which have operated to restrict the market lose their effect. Chief among these is the liquidation in real estate values which has been in progress for several years but has now apparently reached a point of practical stability. The day of inflated values and consequent frequent foreclosures is apparently approaching its close.

Again, the high cost of labor and all material, notably structural steel, and the uncertainty of delivery, even at current prices, have put a temporary embargo on important new operations, most of the builders and operators whose enterprises have kept the market active positively refusing to assume the risk of building at present. While there is plenty of money for new operations, there is comparatively little demand for it. This however, cannot continue. Architects' offices have numerous plans for new improvements which owners are only waiting for safer conditions to develop. New York is constantly growing and will grow still more rapidly with the influx of population expected at the close of the war. The people must be housed and have places to transact business. All kinds of property will be in increasing demand. The renting conditions, now greatly improved, will improve further, from the owner's standpoint—new buildings will be put up for commercial and residence purposes, and they will be readily financed.

Lenders are now, as a rule, very discriminative in the class of security selected, and conservative as to the margin of security required. No one will question the wisdom of either quality, but there is such a thing as carrying both too far for the good of either lender or borrower. A tendency has been noted to cut appraisals of property below the point of apparent safety. It is natural that an appraiser for a lender, having in mind his clients' interest, should err, if at all, on the side of conservatism; and it is much easier to go below the safety point than to fix a value absolutely and equally fair to both parties. If it be true, however, that a point of stability in real estate values has now been closely approximated, there will be less difficulty about appraisals.

The tremendous accumulation of money with banks, insurance companies and investors generally, must have an outlet. The present high price of bonds, while increasing the value of such assets already held, discourages purchases at present prices, as the return will be correspondingly low. The large offerings of foreign loans will probably not materially effect the amount of money available for mortgages nor the rate of interest. The volume of money in this country is too vast and too rapidly increasing to be seriously depleted through this channel, aside from the fact that it is not an outlet generally favored by the investors who are relied upon for real estate mortgages. The stock market at present attracts the funds of private investors, but, if past experience is a criterion for the future, the time is not far distant when the advantages of mortgage investments, so often pointed out and so generally recognized, will again assert itself. There is no investment so safe and which yields so large a proportionate return as a well-selected mortgage on centrally located real estate in large and representative cities. The ultimate effect of the Zoning Resolution has yet to be worked out, but, in the opinion of those most competent to judge, it will be to still further stabilize values and thereby increase the confidence of borrowers and lenders. Owners and builders will feel safer, as the future of their surroundings will be more certain; and lenders, being less apprehensive of a shrinkage in values, will be more liberal in their views.

The opening of the new transit lines now seems to be at least approaching realization, and, when an assured fact, will open a field for building and investment of funds which cannot fail to be improved, to the great advantage of the mortgage market. The great activity in the Bronx along the lines of projected transit has been phenomenal.

Thus, looking backward, we note a steady, and gradual, improvement from the strenuous times of 1913-1914. At the present time we see conditions making for a greater stability of values and a more assured basis for the lending of money, and though the market at the moment is somewhat restricted, indications are not wanting of a natural and healthy expansion.

Looking forward, we apparently expect with confidence a continuation and acceleration of the improvement which we have seen in progress. No such reckless undertaking of new operations, such as preceded and largely caused the depression of the real estate market generally is looked for; nor do we anticipate the almost equally reckless loaning of money which resulted in the innumerable foreclosures, now happily decreasing. Nor do we share the belief of some in very cheap money in the immediate future,—it will probably come, but not very soon. Investors are not likely to be hurried into making loans either excessive in amount or very low in rate, even by the pressure of funds behind them, nor are borrowers likely to be able to accept the moderate loans which would justify a lowering of the present current rates.

What we do anticipate is a safe and sane increase of the demand for money to carry out new building operations and to refinance existing obligations and a corresponding response of funds for mortgage investment on a more liberal basis both as to amount and rate than has prevailed during a period when values were very uncertain and a discretion wise perhaps under the circumstances demanding an ultra conservatism which may now be reasonably modified in the interest of all concerned.

LEGISLATIVE WORK.

(Continued from Page 15.)

most economical; yet annually the tax outgo is higher.

Almost invariably when an attempt has been made to get new taxes, the taxes, while new, have come from the same source—real estate. "New" sources are confused with "other" sources. And the taxes, like the Scriptural new wine in old bottles, are rapidly spilled out on new objects of official or reform solicitude.

Therefore, while encouraging the search for taxes from sources other than real estate, the Real Estate Board will probably endorse a State income tax, a substantial proportion of the proceeds to go into the city treasury. This, assuredly, will dampen the ardor of those who have contracted the habit of administrative spending with little or no concern as to who will pay the bill.

It is impossible within the limits of this article to go further into detail; but it would be a serious omission not to call attention to the responsibility of property owners in this whole matter. Real estate, being physical, tangible, not able to be concealed, is obviously a shining mark for taxation. New conditions created by the complexities of modern life have directed thought into new channels. New ideals have developed as to the respective responsibility of the community and the individual.

This changed sentiment demands more of the employer for employees, notably in the industrial field. Greater safeguards have been thrown about the life and health of industrial workers. Where, a few years ago, little attention was paid to these matters, safety, sanitation and fire preventive methods are now among the chief considerations in the scheme of building construction and building inspection.

It is this change in sentiment (and it is practically world wide) that underlies the startling increase in the cost of municipal government. Here in New York it is reflected in alarmingly large city budgets and in multitudinous orders for physical improvements and structural changes which fall so heavily upon real estate owners.

It is no longer a tendency. It is a condition that good citizens approve. But the change, like all others, has shown the perfectly familiar human tendency to go from one extreme to the other. And it is the radical, the extreme and therefore unreasonable manifestation of this tendency that it is the duty of all rational citizens to combat.

Real estate owners are today suffering from many injustices largely because they have failed at the psychological moment to sense the change in sentiment, to analyze it, to meet it halfway and to take the initiative in doing what ought to be done and so shaping this sentiment that extreme and unreasonable opinion would not be enacted into law.

That is why the task of undoing what should not have been done is so difficult. Nor will this task be accomplished, or even be in a fair way of being accomplished, until this point of view is generally accepted among real estate owners. And not even then, unless this knowledge is capitalized through effective organization for accurate study and analysis of conditions, to be followed by constructive, correctional work before State and local bodies.

This course, and no other, will ultimately restore, as between real estate and other forms of property, the balance so rudely disturbed, by a conversion of the virtue of solicitude for the public welfare into the vice of unfair exactions from a part of the community for the benefit of others in the commun ity.

It is along these lines—to give practical expression to this estimate of the situation—that the Real Estate Board of New York is working. It is only by thorough organization, and representation that will command respect, that real estate owners can hope for relief.

This seems an excellent reason for believing that the campaign for larger membership just arranged by the board will be a pronounced success.

THE BUILDING LOAN MARKET OF 1916

Broader Market Last Year—Savings Banks Showing Disposition to Loan Funds

By GEORGE M. HUBBARD, of Wm. A. White & Sons

GEORGE M. HUBBARD.

THERE has been a somewhat broader market for building loans during 1916 than for the past three years. One encouraging feature has been the loans that have been made by some of the savings institutions. These loans have been made with building loan payments during the construction of the building and the mortgages have been allowed to remain as permanent loans after completion. It is needless to say these mortgages are very desirable from a builder's standpoint. These loans also prove to be good investments for the savings banks, especially as a number of savings institutions still withhold making loans of this kind, thus placing those banks that do make them in the position of having very little competition.

Banks making building loans are able, in many instances, to get much better mortgages than they would if they waited until the building was completed, when the competition of the whole market would have to be met. The reasons pleaded by many savings banks as an excuse for not making building and permanent loans are that they have not the adequate equipment to supervise the construction of the building, and, also, that they do not wish to be bothered with building loan payments. As offsetting this, however, it can be said that nearly all of the life insurance companies make building and permanent loans, with marked success.

The past year has seen fewer new buildings started than might have been expected from the large amount of mortgage money that has been available. This has been due, largely, to the high cost of construction, which cost the appraisers have not, as yet, seen fit to offset by sufficiently increased valuations. This cost has made it impossible for a builder to build, for instance, a twelve-story apartment house on a one hundred foot Park avenue corner without investing upwards of half a million dollars in the property over and above his loan. Few builders are able to put such a large proportion of cash in a building operation of this size. Builders who are financially strong enough, have, in many cases during the past year, accepted two-payment loans from savings institutions, the ground payment being made before the building is started and the final payment being made when the building is completed. These loans are inexpensive to procure and assure the builder of the permanent financing for the building. Only builders with large cash resources can accept loans of this kind. During the first part of 1915 the insurance companies made comparatively few loans, but the present indications are that they will lend much more freely in 1917.

The zoning regulations have also had some effect on the building loan market, especially in the case of properties that might be readily financed if tall buildings were permitted, but which, owing to large land values, are now somewhat harder to finance with the smaller building. Some readjustment in values is bound to result from the new zoning regulations, and when these adjustments have taken place, the mortgage market will probably be more stable than it has been heretofore.

It is hard to forecast with any degree of certainty what any single year will bring forth, and it is hard to say definitely what the 1917 building loan prospects will be. A general money stringency throughout the country would, of course, effect the market for building and permanent loans in New York, and the effect, while it might be brought about only in an indirect way, would be just as certain. The opinion of many well informed persons, however, is that 1917 will see a very easy mortgage market and possibly considerable 4 per cent money. Should this prove to be the case, it is almost certain that a great deal of building and permanent loan money will come into the market attracted by the higher rate of interest for loans of this kind, and it is very possible that more building loans may be made by savings banks than before.

The greatly improved renting condition in all classes of property would seem to indicate that the coming year will find a heavy demand for new accommodations and will be one of the best building years we have had for a long time.

THE ZONE PLAN.

(Continued from page 21)

can be no maintenance of healthful conditions of light and air and no stability of values if each individual owner is at liberty to build to any height and over any portion of his lot without regard to his appropriate and reasonable contribution to the light and air of the block.

The zone plan accordingly establishes zones for the purpose of regulating the height of buildings and the area of yards, courts and other open spaces. Five classes of height districts are established, limiting the height of the building at the street line to a varying multiple of the street width. The districts named in accordance with the multiple applied are: One times districts, one and one-quarter times districts, one and one-half times districts, two times districts and two and one-half times districts. The multiple of street width rule limits the height of a building at the street line only. The building may be carried higher by means of mansards or vertical walls, provided such extended portion is set back in a prescribed ratio. As an exception to the general height and setback rule special regulations are provided for dormers and towers. If the area of a building is reduced so that above a certain level it covers only 25 per cent of the area of the lot, a street wall above such level may be carried to any height provided it is distant 75 feet from the center of the street.

The zone plan also establishes five classes of area districts: A, B, C, D and E, with varying regulations as to size of yards and other open spaces. Except in A districts, any building that is back to back with the rear of another property and is more than 55 feet back from the nearest street must have a rear yard. The requirement for a rear yard is reciprocal. No building is required to have a rear yard unless a similar obligation could be imposed for any building hereafter erected immediately behind such yard. In addition to a percentage requirement as to depth of the yard at its lowest level, the yard must increase in depth with the height of the yard, being not less than one inch, two inches, three inches, four inches or five inches in depth for each foot of its height, according as it is located in the B, C, D or E district.

Many American cities have had more or less experience with certain phases of the zoning principle. Boston and Washington have established height districts; Los Angeles has created residence and industrial districts; Minneapolis has created districts from which stables and other designated uses of a nuisance character are excluded; various other cities have experimented with the imposition of restrictions based on the petitioned or consent of the property owners in a particular block.

The New York zone plan differs materially in scope and method from any of the above attempts to regulate building development. The New York plan is complete and comprehensive. It covers the height of buildings, the area of courts and yards, and the location of trades and industries. It is applied throughout the five boroughs of the city. It is the result of a conscious, intelligent effort to direct the building of the city in accord with a well-considered plan.

Moreover, the New York zone plan differs notably from these other partial applications of the zoning principle in the very great care given to its preparation. It is the result of some three years of careful research and investigation.

The entire work has, moreover, been based on a strict adherence to the purposes for which the police power may be exercised, i. e., the public health, safety, order and general welfare. The testimony taken by the commission is filled with statements by experts showing the great importance of the various features of the zone plan to the public health, safety and general welfare. While, however, these considerations have been basic, there has gone hand in hand a careful weighing and estimate of all the economic factors that must have a bearing on the reasonableness of any specific regulation. Moderation and proportionateness of means to ends which are the essence of reasonableness have been secured by a most careful consideration of existing conditions of building development and of existing economic tendencies.

CITY PROBLEMS.

(Continued from page 11).

in the City's prisons has been abated, prison stripes have been abolished and the Farm Colony for Misdemeanors has been established at New Hampton. Legislation has been secured creating the Board of Parole and extending the indetermine sentence to workhouse and penitentiary inmates.

To summarize, the campaign of retrenchment has resulted, (1) in reducing the annual authorizations of corporate stock more than $75,000,000 below the average amount authorized in previous administrations; (2) in establishing a sound financial policy which will ultimately reduce the City's debt; (3) in reducing the budgets for all departments over which the Board of Estimate has effective control $1,840,580.36 below the appropriations for this group in 1914 without depriving 20,500 employees of the City of an increase in wages, made necessary by the recent change in economic conditions; (4) in formulating a program of legislative relief for the City from unjust burdens which the State has imposed upon it and for giving the City more complete control over its expenditures and the enactment into law of four of the items in this program. All this has been accomplished without impairing the work of the City departments, each of which has established a new record for efficient and satisfactory service in the public.

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BOROUGH GOVERNMENT'S WORK DURING 1916

Some of the Important Accomplishments Touched Upon—Will Have Far-Reaching Effect on Real Estate

By Hon. MARCUS M. MARKS, Borough President, Manhattan

IN order that some of the accomplishments of the Borough President's office during 1916 may be understood, I have enumerated them in the following article. These accomplishments are only touched upon and their full import cannot be dwelt upon in an article of this length, but the readers of the Record and Guide can see at a glance what the department has striven to accomplish, and how far it has succeeded.

First. For the safety and convenience of pedestrians, we have constructed in conjunction with our repaving of Park avenue, crosswalks at the ends of each block of park area. Formerly pedestrians were forced to cross in the midst of vehicular traffic.

Second. Another improvement much appreciated by the public has been our general conversion of upper Manhattan earth roadways into paved thoroughfares.

Third. As a means of reducing congestion and delays to vehicular traffic in turning street corners, we have proceeded as rapidly as possible with our program of changing sidewalk corners from a six foot to a twelve foot radius. This gives the roadway increased width where it is most needed, and permits a much easier turn for vehicular traffic.

Fourth. We have made considerable progress in our work of building receiving basins with inlets fifteen or twenty feet back from street corners, in order to intercept the flow of gutter water before it reaches the crosswalks, which are thus rendered dry for pedestrians. Alterations of basins and inlets to accommodate the new twelve foot corner radius are paid for by the city. All new basins and inlets are paid for by assessment after approval for their construction has been given by the property owners affected. The Fifth Avenue Association, composed of leading merchants of the business section of that avenue, has endorsed this policy by petitioning for the installation of additional basins and inlets along Fifth avenue within their district.

Fifth. Through an arrangement which we have made with the Public Service Commission, we have provided, without cost to the city, an entirely new section for men in the Greeley Square public comfort station, a portion of which had been cut off by the new Broadway subway.

Sixth. Through the efficient work of our janitorial force, the City Hall, the Municipal Building, and all the other public buildings and offices under our control have been kept in a condition of exceptional cleanliness. Favorable comment in this connection has been general and exceedingly gratifying to us.

Seventh. The open air floating baths were patronized during the summer by 1,408,941 bathers, an excess of 84,600 over the patronage in 1915. This increase indicated unmistakably the necessity for additional floating baths, and was a large factor in our successful fight to secure an appropriation in the 1917 budget for two additional floating baths, which will give us a total of eight in operation during 1917. When, according to our estimate, there will be a patronage of over 2,000,000 bathers.

Eighth. We have prepared plans for the construction of a pedestrian viaduct connecting the subway station at 215th street and Tenth avenue with Park Terrace East in the Isham Park section. As a result of this improvement, step climbing will be reduced to a minimum, and pedestrian traffic between these two points will be rendered safer and more agreeable.

Ninth. There have been reported to us this year sixty elevator accidents, over 90 per cent. of which were caused by

HON. MARCUS M. MARKS.

carelessness either of the persons injured or of the elevator operators. For the purpose of reducing to a minimum the number of such accidents, we have formulated rules, a copy of which is posted in each passenger elevator in the Borough of Manhattan. General co-operation in our work of enforcing these new rules is being given by building owners and managers.

Tenth. Early in the year, the Board of Aldermen passed a new ordinance which we had formulated giving us the power to require all buildings to be marked by street numbers. Under the old ordinance, we could require only residence buildings to be so numbered.

Eleventh. Gratifying results have been accomplished by our new plan of placing on streets which are to be repaved signs notifying property holders and sub-surface companies, several weeks in advance, of the proposed repaving, and cautioning them that within a year thereafter no cuts in the new pavement can be made, except in cases of absolute emergency.

Twelfth. We installed 1,110 street signs of the new type which we have devised, and have contracted for 1,518 more, in order to complete the installation throughout the borough. There are a few street corners, however, along highways torn up on account of subway construction, or where electric light poles have not yet been placed, at which we have retained signs of the old type. These we will replace with signs of our new type as soon as the subway work is finished, and new electric light poles are erected. Our new type of sign has been adopted in other boroughs, and in Brooklyn and the Bronx, installations have already been made.

Thirteenth. Our efforts to remove and prevent as far as possible encumbrances on the highways and sidewalks have been continued. The general installation of new electric light poles by the Department of Water Supply, Gas and Electricity has caused the use of about 10,000 gas lamp posts to be abandoned. In the removal of these "dead" posts both that department and this department had a common interest and problem. Commissioner Williams actively co-operated with this department in working out a plan agreeable to both departments, and the removal of the posts is now under way, at a minimum of cost and inconvenience to the public.

Fourteenth. The adoption of a type of combination post or "twin post," suggested by Commissioner Folks of our Department of Public Works, to accommodate both the electric illuminating and the fire alarm system has obviated the erection of about 1,600 separate posts for the fire alarm system, and the making of as many cuts in the pavements. Thus, another substantial saving of expense and inconvenience to the public has been effected.

Fifteenth. After protracted negotiations, we have finally effected an agreement between the conflicting interests for the erection of a ramp on the easterly side of Fourth avenue between 32d and 34th streets. We have prepared contract drawings therefor, and expect to begin actual construction in the spring. This improvement will permit uninterrupted north bound vehicular traffic along the east side of Park avenue, instead of forcing both north and south bound traffic to use the west side of Park avenue in this section as at present. The plan also provides for the carrying of 33d street across Park avenue at grade instead of terminating at the easterly side of Park avenue. It is confidently expected that this opening up of Park avenue for uninterrupted north and southbound traffic will divert some of the traffic volume from Fifth avenue, and thus relieve that congested thoroughfare.

Sixteenth. An unusually delicate piece of engineering work was completed in the repairing of the Riverside Drive viaduct. Without interruption to the use of this viaduct, we raised six of its supporting columns whose foundations had been sunk, and we further insured its safety by encasing the bases of the columns in concrete. Engineers not connected with this department urged, as the only feasible method of doing this work, a plan calling for an expenditure of $100,000. We did the work for about $11,000, thus saving the city almost $90,000; and occasioned no traffic inconvenience such as would have resulted from following the other plan.

Seventeenth. After numerous revisions and modifications necessitated by changes in the subway situation at 42d street, plans are now ready for the construction of the 42d street viaduct to carry Park avenue from 40th street to the upper level of the Grand Central terminal.

Eighteenth. After careful studies, we have formulated a plan to open up the Harlem River Speedway to general vehicular traffic in order to increase the utilization of this roadway, which at present is of comparatively little value to the public. Our plan also includes the construction of short extensions of Seventh and Eighth avenues, connecting these highways with the present speedway. Thus, a practically level arterial route from the Battery to the Dyckman street ferry and to the Riverdale section would be obtained, the great advantage of which is obvious.

Nineteenth. For repaving this year, we secured from the Board of Estimate an appropriation of $1,400,000 against a requested amount of $4,000,000. Despite this insufficient appropriation, we have repaved substantially nineteen miles of old streets in Manhattan, among the most important of which are Broadway from 92d to 121st streets; Park avenue from 72d to 96th streets; Third avenue from 34th to 60th streets; Lexington avenue from 23d to 32d streets, and Columbus avenue from 84th to 110th streets. We are at present in the process of repaving Park Row and the Bowery from Broadway to Grand street.

Twentieth. The Park Department has transferred to this department the four transverse roads through Central Park. These are: Road No. 1 at 65th street; Road No. 2 at 79th street; Road No. 3 at 85th street; Road No. 4 at 97th street. Of these, the 85th street transverse road is in fair condition. The others will be

(Continued on page 76.)

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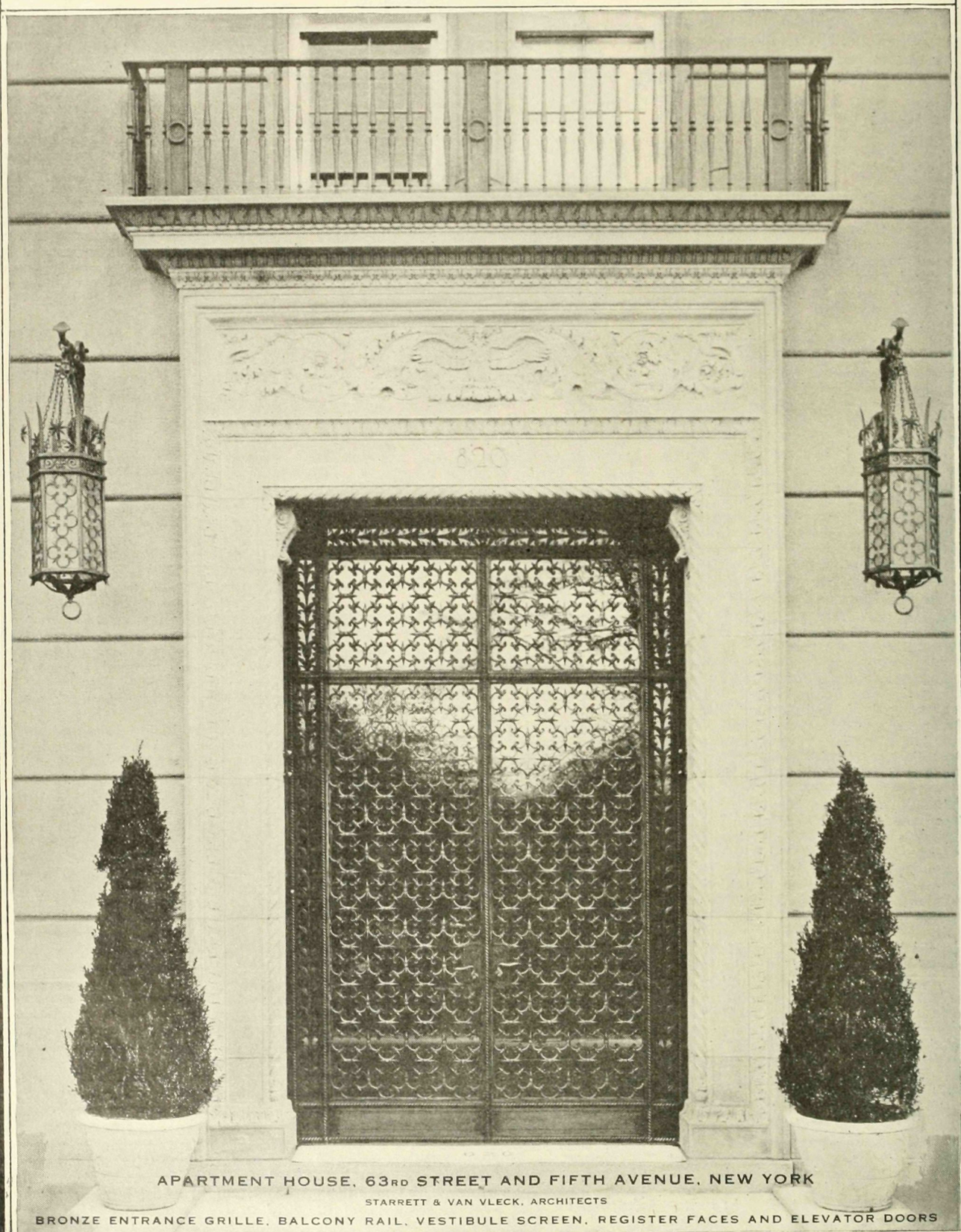

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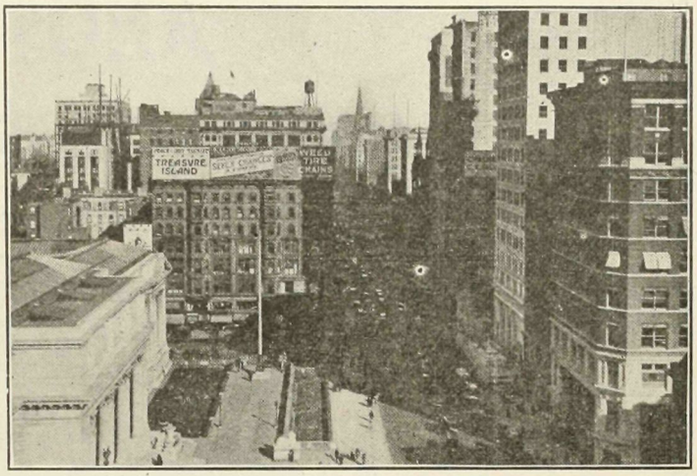
MARKED CHANGES IN FIFTH AVENUE SECTION

Line of Demarkation at 34th Street—Retail Shopping District Compares Favorably With That In Any Other City

By CHARLES GRIFFITH MOSES, Vice-President J. Romaine Brown Co.

LOOKING SOUTH ON FIFTH AVENUE.



LOOKING NORTH ON FIFTH AVENUE.

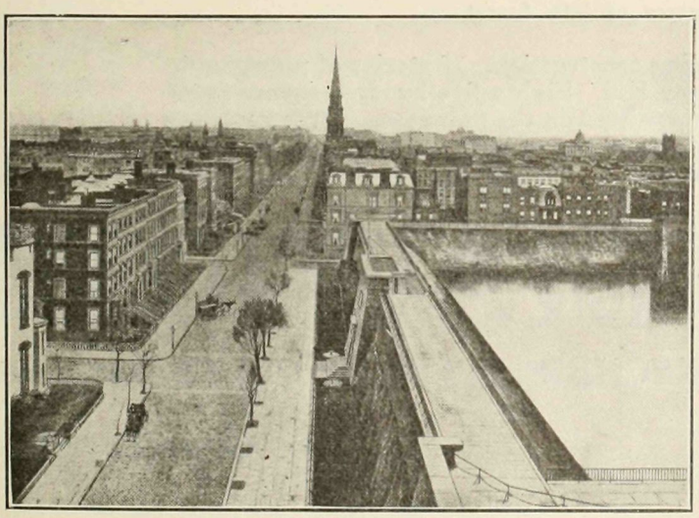
IN the past few years, an entirely new phase has entered into the consideration of New York real estate from the investor's standpoint. Before the present decade, the natural tendency of values in substantially every part of Manhattan was in an upward direction and for the most part, showing marked increases in all parts of the city year by year and period by period. The city was growing so rapidly and increasing in population and business by leaps and bounds, that it was safe to buy properly improved real estate in almost any part of the island for investment with a feeling of absolute security in the knowledge that such investments would probably increase in value, or, at the very worst, hold their own in competition with any of the newer and more recently developed parts of the city.

During the past eight or ten years a marked change has taken place in conditions which have materially affected basic values, especially in that part of the city south of 34th street. These values have shown a marked tendency downwards and many investments which were considered conservative, solid and substantial have shown a decided shrinkage. Now, this comparatively new development has introduced a very important feature into consideration in the purchase of real estate for investment. This feature is the one of permanency of value. Thus, when the investor is seeking the acquiring of high class improved real estate, an important factor in determining his selection is that of safety from the lessening of land values and consequent depreciation in income and sale value.

In order to guard against such dangers for the future, it was necessary to study to some extent the causes producing this effect. As far as the depreciation in value of the central and lower business section of the city is concerned, there are five basic and determining causes: One, the lack of adequate modern buildings to supply the needs of increasing business; two, the disinclination or inability of the owner himself to reimprove or alter existing buildings to meet such requirements; three, the somewhat drastic and far-reaching requirements of the Factory and Building Departments; four, the natural northward trend of retail business, followed very closely and rapidly by wholesale business catering thereto, and fifth, the desire and necessity of many manufacturers and merchants to get closer to the hotel and amusement centres for the benefit and convenience of the out-of-town buyer.

The new zoning regulations and the voluntary and public-spirited actions of those participating in the "Save New York" movement have improved conditions materially, and have probably prevented a further shrinkage of value, but it is to the section north of 34th street and along Fifth avenue, including the territory a block or two east and west of this thoroughfare, that the investor may turn today with confidence and a secure knowledge in the fact that a purchase made substantially anywhere in this district at prevailing prices will not only be sure to hold its own, but will probably enhance in value materially in the future. The highest class retail trade in the city of New York has centered here. The Hotel McAlpin and Waldorf-Astoria, together with the Altman store, have made 34th street the substantial southern bulwark of this district. The retail dealer in high class commodities can afford to and does pay the highest rentals obtainable for business property. The numerous increases in our resident as well as our transient population consisting of those who have money to spend calls for a constant enlargement of the area for such trade. At the north, Central Park presents an impassable barrier to the northward movement of trade. The natural physical conditions of the island preclude the spreading of this business further east or west than but one block or two in either direction, so that we have but a comparatively small area which must be limited to high class retail trade for practically all time to come in New York. Gradually, but none the less surely, retail business has encroached on the former residence section of this zone and one by one, from the palace of a Vanderbilt on Fifth avenue to the more humble dwellings of the adjacent streets, has residence given over to business, and even today, with the entire development incomplete, Fifth avenue from 34th street north presents the most wonderful and beautiful shopping district in the world, and it is here that we may look for the rehabilitation and return of confidence in the substantiality of real estate values in the City of New York.

While it is quite true that this section is not the only one, by any means, where stability of value is the key note, yet one thing seems to be certain. At the present writing, in no other part of Manhattan is there likely to be the demand for space by the retail dealer in high priced commodities at top notch rentals that must prevail in the future, as well as now, in that marvelous mile and a quarter of Fifth avenue from 34th to 59th streets.



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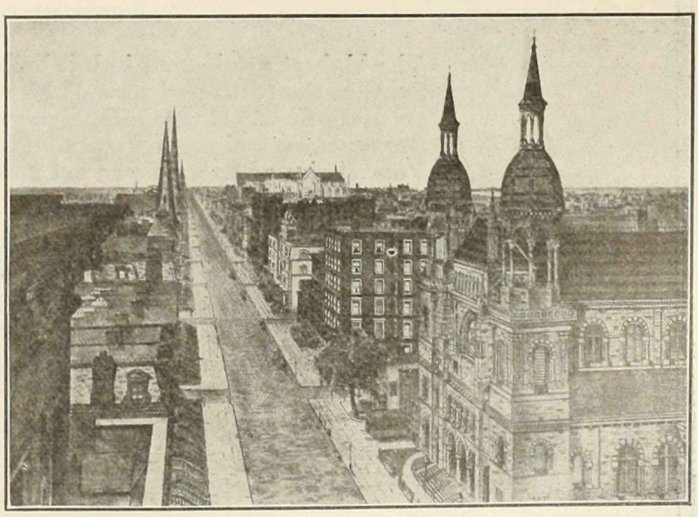
SOUTH FROM 42ND STREET IN 1879.



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NORTH FROM 42ND STREET IN 1879.

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BOTH BUILDINGS

SHORTAGE OF RENTABLE SPACE IN DOWNTOWN OFFICE BUILDINGS

By GEORGE T. MORTIMER, President Equitable Office Building Corporation

THAT "history repeats itself" is perhaps one of the oldest "bromides" extant. During an experience of twenty-one years in various branches of real estate activity I have been through three periods of acute real estate depression. I am therefore constrained to believe that the trend of realty can quite properly be illustrated by a wheel which is not quite true and which jolts the car every time an obstacle in the road is encountered. As I see it we get these jolts just about every seven years. The most recent one, however, has been a little harder to recover from, for the underlying causes are more numerous than usual.

Some time last March in these columns I predicted real estate recovery, predicating the time of such recovery on more reasonable rates for mortgage money and the absorption of the large amount of unrented space which was then available.

Since that time money rates have been reduced—the lending institutions are in fact having a hard time to obtain desirable loan applications. As to the absorption of space, never has there been a period when such a demand for space of all sorts existed as during the last twelve months.

Real estate depression always brings forth the cry of overtaxation, bad administration, waste of municipal funds, etc., but, as I see it, wildcat speculation in land and overproduction of buildings is more nearly the correct reason for the condition.

Probably no section of land in the entire country has been so abused by lack of foresight and overproduction as the district which lies south of the City Hall, and more especially that part of the section which is contiguous to Broadway, and which is more aptly described as the Financial District.

From the beginning of the "Skyscraper period" haphazard and "spotty" development has proceeded in this district. The early buildings were successful for a time, but they were pioneers; and as improvements were made in methods of construction as well as in equipment these early buildings were superseded by more modern structures and their income became impaired by the consequent competition.

Perhaps the crest of the skyscraper wave of prosperity was reached during the year 1905, when rents in first-class buildings of this type reached an average of more than $3.00 a square foot. Subsequently, early in 1907 a natural period of depression was reached, accompanied by overproduction of an intense sort. Rents dropped as a consequence and even the violent slashing of prices was not always sufficient to keep space, even in the newer structures, fairly filled. The following eight years saw the downtown renting market operated about on the same lines as the old time Bowery clothing store. Any old price went, and tenants were yanked from building to building in a "rob Peter to pay Paul" manner.

There is no profit in operating a modern first-class office building with rents less than $3.00 a foot. It is easy to see therefore that when space was rented at $1.50 and $1.75, with no possibility of making a corresponding cut in interest rates, taxes and operating expenses, foreclosure and disaster was the only outcome for those properties which were owned by those financially weak.

It would be cruel to enumerate the actual happenings. They are a matter of record and he who reads will remember building after building in the Wall street district which dropped back to the unwilling hands of the lender. Nor are these happenings so long ago. A few months, a year, two years at the outside.

But the wheel continues to revolve. The bump is passed. Real estate, much maligned for several years, is rapidly coming back to its own. Space that was vacant has been absorbed. Owners are stiffening up in their prices. Tenants are prosperous, and are expanding into larger quarters and have ceased to dictate the rents they will pay and the terms of their leases.

When the war started the shipping industry went into a blue funk. But within a few months every man who owned a ship, or a charter, was spreading out into larger space. Try to rent an office down at the Battery and you will have a hard job before you. In the same manner the exporters further uptown and all those many trades and professions who have, directly or indirectly, to do with munitions of war, and its many ramifications, have spread out until vacant space today is as scarce as it was plentiful but two years ago.

At the same time we have a banking condition, so far as abundance of money is concerned, which is unprecedented. This overabundance is slowly but surely drifting into the mortgage field, with the result that rates, already reduced, will be still lower.

The fact also that the purchasing power of the dollar is rapidly decreasing alone assures higher rents, added to which the new Zoning and Districting Law is bound to restrict the old tendency to haphazard and uneconomic development. Then too the present price of building materials is so high as to have a deterrent effect on the prospective builder. With these facts before us it would seem that we were assured higher rents and less competition for some time to come.

The fundamental conditions of real estate prosperity having therefore been reached we await the investor. And here again history will repeat. It is a well known fact that those who make large sums in other fields, eventually seek the "real" form of investment. It may be because real estate in the long run is safer or it may be the inherent desire of every man to some day own a piece of mother earth. But be the reason what it may, the fact remains that sooner or later they settle down to conservative investment, and in many cases seek well selected business properties.

The one great cloud which confronts real estate today is the danger of too quick a recovery. The ease with which we slide into booms is remarkable. The memory of the burned seems short and transitory. Real estate is entitled to an advance and there is every plausible reason why present low prices will soon be increased. But I would rather see this movement a reasonably slow and steady advance governed by normal conditions than see anything of the boom nature.

BUT FEW CHANGES HAVE OCCURRED IN OLD CHINA AND GLASS SECTION

By JAMES H. CRUIKSHANK

FULTON and Canal streets, from West Broadway to the North River, is one of the few districts in the city which did not enjoy the advance, or affliction, of a "boom" during the halcyon days of rapidly climbing values. Hence heavy recessions in values and consequent foreclosures are unknown. It doesn't have to "come back" for it never "went." It has pursued the even tenor of its way, and values are justifiably steady and unaffected by the depreciation in other parts of the city.

With one exception, the character of the tenancies has remained the same year after year, and it is not of the "fly-by-night," "follow-your-leader" type, which has made and unmade values in some sections of Manhattan. The one business which has to some degree migrated further north is that of china and cut glass, which has departed to the 23rd street section. The buildings vacated by this trade have been well rented to other lines.

This district embraces a large number of businesses, the chief of which are wholesale groceries, meats, produce, fruits, butter and eggs, cheese and kindred lines. Renting in the buildings occupied by these purveyors to the inner man is most excellent and the rents, particularly in the fruit and produce districts, are being greatly increased. The rapidly growing butter and egg business is bursting its Chambers, Reade, Duane and Jay street shell, and is making a noise like a spreading northward movement. The shoe trade has overflowed its Duane and Reade street confines and has invaded Hudson street, two of the largest jobbers having ten and twelve-story buildings on this splendid 100-foot thoroughfare. In the wholesale grocery district, space is almost at a premium. The storage warehouses between Beach and Canal streets are all leased and are money-makers for the lessees. Business of all kinds in this section has been prosperous, and this is reflected in the excellent renting conditions.

Sales during 1916 were, as usual, small in number. In this section of stable realty values, it is a question of buying rather than selling, as so little property is for sale and what little realty is on the market is held at very stiff figures. Financially strong ownerships; immunity from the exactions of the Labor Law and the Fire Prevention Bureau, and the high-grade character of the tenancies are among the reasons for the firmness of values in this favored zone.

Few other buildings were erected during the present year, the principal operation being the twelve-story Underwood Company Service building now in course of construction at the corner of Vesey and Greenwich streets, covering a plot of about 10,000 square feet.

There is demand enough for space below Chambers street to warrant the erection of a number of modern loft buildings; but the abnormal increase of 50 per cent. in the cost of such buildings prevents such needed operations. The same condition is true of the wholesale grocery district.

In New York City.

There are two fires every hour in the city.

There are 1,090 churches of all denominations.

There are 586,000 telephone calls made each hour.

A passenger train arrives every fifty-two seconds.

A ship leaves New York Harbor every forty-eight minutes.

Four transient visitors arrive in New York every second.

Each year New York sends out 27,000,000 tons of freight.

There are 800,000 working people employed in these factories.

New York increases in population at the rate of 150,000 people a year.

It has been estimated that each night in New York City $1,200,000 is spent in the hotels and restaurants.

The foreign commerce in New York amounts to $2,772,000,000, or 75 per cent. of the total commerce of the United States.

One-tenth of all the manufactures of the United States are made in 38,000 factories in this city, which turn out products with an estimated value of $3,000,000,000.

New York City carries annually about 97,000 employes upon its payrolls, of which about 82,000 are regular. On the basis that two other persons are dependent upon the earnings of each city employee, it seems that nearly 300,000 people are supported by funds coming from the city treasury.

MANY LARGE TRANSACTIONS ON FIFTH AVENUE

Character of Buying Has Been of the Best and Shows Confidence of Monied Interests in Real Estate

By LAWRENCE B. ELLIMAN, of Pease & Elliman

THE so-called Park Lane section of Fifth avenue, running from 59th to 110th street, has not been especially active during the past year, but there have been certain developments, as an indication of the future trend which have been most interesting to watch. During the past year three new apartment houses have been constructed because of the very great success in the rental and final sale of the first fine apartment house at the corner of 81st street and Fifth avenue, which was built by Lee & Fleischman, and sold by them to Commodore Arthur Curtiss James, at a very attractive profit.

The next plot which was purchased for this purpose was at the southeast corner of 72d street and Fifth avenue, is also of a high type and has been well rented to a very desirable class of tenants. The plot this building occupies is smaller than the one at 72nd street, as it is only 100x100.

The third building is the one erected by the Sadie Trask Sturges Estate, adjoining Mr. Phipps' dwelling at the northeast corner of 87th street and Fifth avenue. This building occupies a plot 50x125, and has an outlook over the reservoir at this point. So far no leases have been actually closed in this building, although it is understood that several are contemplated.

In the two former cases the properties were taken over by shrewd operators who believed that the property could be adequately improved so as to yield an attractive return on the investment in cement was used to a large extent instead of mortar. This building will be ready for occupancy in the late summer of 1917 and will have one apartment on a floor.

As to whether there will be many more such sites improved in this manner is a question which it is difficult to answer. Park avenue is rapidly attaining a position which is hardly second to Fifth avenue. The class of tenants which are coming into these Park avenue apartments is of the highest type, many who formerly owned and occupied Fifth avenue houses, so that the chief difference between Park avenue and Fifth avenue, in fact the only difference today, is the view over the Park, which is certainly worth a good deal to some tenants, and also the feel-

FIFTH AVENUE, NORTH OF 59TH STREET, SHOWING NEW APARTMENT HOUSES.

which we sold to a syndicate organized by J. E. R. Carpenter, the architect who has designed so many prominent east side apartments. This property was purchased from Cornelius Vanderbilt and the Burden Estate; the plot has a frontage of 115 feet on Fifth avenue and 125 feet in 72nd street. The Vanderbilt property, which was vacant, was formerly used by the Interclub Baseball League and was the scene of interesting games on Saturday afternoons until this date. The corner was occupied by the Burden house, which was an unusually well constructed dwelling, but for which there did not seem to exist any market, although the Burden Estate made every effort to sell it to some private occupant. The building erected on this property is one of the finest twelve-story apartments which has ever been built and has been very successfully rented to very high class tenants and will show a gross income of approximately $280,000.

The next building of this character to be undertaken was at the northwest corner of 63rd street and Fifth avenue; it was occupied by the former Progress Club, which was purchased some years ago by the late James B. Haggin. Mr. Haggin carried the property vacant during his ownership and his estate sold it at a very reasonable price to a syndicate that was organized by Goldwin Starrett, the architect. This building no way as successfully as by an apartment house. The demand for dwellings on Fifth avenue has been extremely limited, and while ten or twelve years ago a few speculative builders were willing to risk their capital in erecting private dwellings on speculation, the market has been so poor, especially during the last five or six years, for such private dwellings, that no speculative builders have been found willing to undertake this risk. At both 72nd street and 63rd street the judgment of these operators has been more than justified by the return which has been secured in rental, and both of these buildings will show a net return considerably in excess of ten per cent. on the investment, which no private house could possibly have hoped to equal.

As a result of the success of these two large buildings, and also of the one at 81st street and Fifth avenue, we were successful in selling the southeast corner of 74th street and Fifth avenue for the Rev. A. Duane Pell to a very prominent builder who is now erecting the one building for apartments on Fifth avenue which will be completed during the coming year; this involved the removal of a landmark in that section, as the Picard house stood there for a great many years, being one of the original dwellings erected north of 72nd street, and in tearing the building down it was found particularly well constructed, as ing of some tenants, especially those coming from out of town, that Fifth avenue carries with it greater prestige than Park avenue, but when it is taken into consideration that the land on Fifth avenue brings at least twice as much as a similar plot on Park avenue, it is questionable whether the additional cost is worth the risk, as it means that so much higher rentals must be obtained. One house a year on Fifth avenue could probably be filled advantageously, but there is a question as to whether there would be a demand for more apartments than would be contained in one house.

There are still several good corners on Fifth avenue, especially north of 79th street, which would be desirable for an apartment house development and which are still vacant, but the market for private dwelling sites is improving very rapidly and it is an open question as to whether these sites will not now be improved with private dwellings, rather than apartments.

One of the most satisfactory signs of the improving condition and demand for private dwellings was the sale of the Burden house at the southeast corner of 92nd street and Fifth avenue, which showed that there is still a market for fine dwellings. Some of the other dwellings which have recently been completed are the Jennings house, between 69th

(Continued on Page 76.)

From N. Y. Herald, July 9, 1916

Every Real Estate Owner, Bank, Trust Co., Insurance Co., or Trustee

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One of the first, if not THE first real estate brokerage organizations to put its business on a strictly co-operative basis.
Every employe of the company is a partner and interested in building up the service of the company. Seven years of co-operation has created an organization second to none in efficiency.

May 1st, 1916, as Compared with May 1st, 1909

*Increase		
	in number of owners	390.62-100 per cent.
	in number of properties	437.25-100 per cent.
	in number of tenants	927.81-100 per cent.
	in amount of rents	755.53-100 per cent.

These Transactions Show Scope of Our Work in the Brokerage Field for 1915:

1. Interested as brokers in the Clarence Payne-Postal Life sale of $7,500,000 worth of real estate. The biggest single realty transaction negotiated.
2. Promotion, sale and financing of the World's Finest and Most Luxurious Apartment, "Fifth Avenue and 63rd Street."
3. Sale of 8 inches of ground at 49 Walker Street. The year's smallest transaction.

¶ NOW and then new clients ask us, "Do you really run the power plants of office and mercantile buildings or do you employ a supervision company?" OUR answer to this question is that we have for years specialized in the operation of power plants and there are none more competent or skillful. WE apply scientific principles to the operation of buildings under our charge and our clients receive without cost the benefit of the work done by the building management engineers which head our agency staff.
¶ OVER 275 buildings on Manhattan Island are under our management. Some of these buildings rent for as much as $250,000 annually.
¶ OUR Agency Department is especially equipped with our own experts to comply with the recent requirements of the Labor Department and Fire Prevention Bureau.
¶ OUR Renting Department is undeniably the strongest downtown.
¶ THE highest bank and financial references furnished, or **ask any professional real estate man downtown as to our qualifications to handle business property.**

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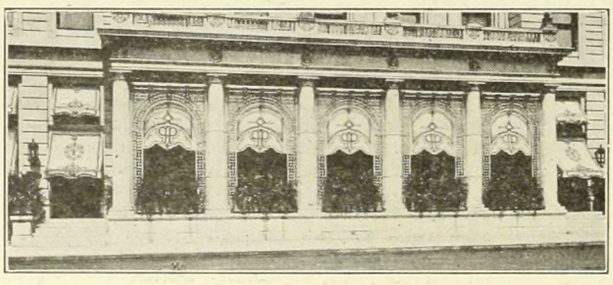
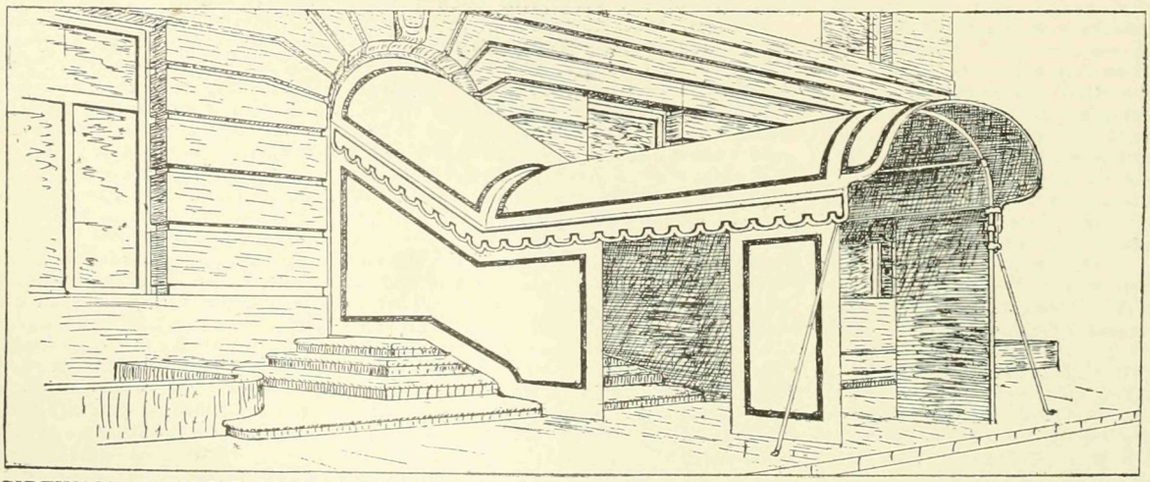


HOTEL PLAZA New York



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243 CANAL STREET NEW YORK

HEALTHY CONDITIONS PREVAIL IN THE "SKYSCRAPER" SECTION

By CHAS. F. NOYES, of Chas. F. Noyes Co.

IN no neighborhood have conditions improved in the real estate field more than in the financial district and along Broadway south of City Hall. To one who left New York two years ago only

LOOKING NORTH IN BROAD STREET.

to have returned last week the improved conditions would be unbelievable were they not accomplished facts. Our large skyscrapers—which were erected a comparatively few years ago with such frequency that many thought there would never be tenants to go around—are comparatively full. The "Equitable," the "Woolworth" and the "Adams" are now producing the income which stamps each as a financial success.

The other large buildings, such as the "City Investing," "Trinity," "United States Realty," "Singer" and "Manhattan" are well rented, successful downtown office structures; and even the twenty-story, 50 Broad street building—largely vacant a year ago—has been well rented during the last twelve months and is rapidly taking its place among the more profitable investment properties of this type.

The financial district has received the greatest stimulus during the last twelve months. Vacancies have disappeared as snow before the sun. Banking houses and brokerage firms have taken additional space, new firms have been organized, banks have increased their facilities, and many large corporations have come into existence requiring large space facilities. Added to this demand has been that of many importing and exporting concerns. Never was our business as good with the South American countries, and never was there a more healthy demand for good office space in the financial district.

Among the new operations of the past year may be mentioned the opening to the public of the twenty-eight-story Western Union Building, at 195 Broadway, corner of Dey street, which has been filled 100 per cent with the very best of tenants. So successful has been this building, and so well satisfied are the owners, that they have purchased practically the balance of the block front on Broadway to Fulton street, and several additional parcels on Dey and Fulton streets. Those who say there is no logical demand downtown for properties of this type—the better type—know not of what they speak. Vincent Astor's new building at Broadway and Vesey street is also a success, and nearly filled with tenants.

Among other notable changes and developments during the past year may be mentioned the lease of L. E. Waterman Company for twenty-one years with renewals of the $1,200,000 southwest corner of Broadway and Dey street from the Oceanic Investment Company; the purchase by Andrews & Co. of the former Kuhn Loeb Building at 27-29 Pine street, a property for which $1,000,000 was asked; the lease of 38 Pine street, a building long vacant, but taken by the Banks of the Americas from J. G. Hilliard and John A. Eckert, and the handsome new banking quarters opened by the Empire Trust Co. and the Liberty National Bank in the new Equitable Building; the recent lease to the Metropolitan Trust Co., at 60 Wall street; the obtaining of its new home in the Singer Building for the Chatham & Phenix National Bank, and last, but not least, the persistent and successful effort of David A. Schulte to secure prominent locations in this downtown field. There is no better judge of prominent locations for business purposes than Mr. Schulte, and analysis of his operations during the past year shows that he has figured in more than $3,000,000 worth of leases in this neighborhood under discussion.

The new fire insurance district in William street, between Maiden Lane and Fulton street, never has been depressed. The insurance buildings in this district never did suffer any curtailment of income. They always have been well filled—except possibly a few of that vintage of years ago which must make way for more suitable improvements—and it is in this district that more buildings are required to meet the demand for space by insurance interests. The Woodbridge Building, 100 William street, is the pioneer and still one of the favorite fire insurance buildings. Others that are popular, and practically 100 per cent. rented, are the sixteen-story "Hilliard," the "Wyllys," the twenty-two-story "80 Maiden Lane Building," and the Underwriter's Building at 123 William street.

Before this interview is published I expect that a public announcement will be made regarding a new insurance building that will be erected, and shortly after the first of the year a second announcement will probably be forthcoming in regard to a twenty-story office building that will be erected, covering a plot of

INSURANCE DISTRICT IN WILLIAM ST.

11,700 square feet, at the northeast corner of William and John streets. This large plot is the last corner plot remaining in the insurance district of large area. Plans have been filed for a twenty-story building and the operation has advanced to active construction.

FERTILE BUILDING FIELD EXISTS IN SECTION WEST OF CENTRAL PARK

By CHARLES S. KOHLER

CHARLES S. KOHLER.

EXCELLENT renting conditions prevail in apartment and flat houses in that section bounded by 80th and 125th street, and Central Park West and Broadway. The private house situation in this same area is not so good, although owners have been able to find tenants for modern dwellings, where the rentals have been re-adjusted.

These conditions have been brought about to a large degree by the tendency, within recent years, for people to adopt the apartment house as a place of residence, in preference to the private house. The reasons for this attitude have been defined in various ways, but the principal considerations which have influenced this decision have probably been the solution of the servant question, the additional convenience of having all the rooms on one floor, and the elimination of the vexations attendant upon heating, garbage removal and stair climbing.

We are experiencing in this section a splendid demand for apartments, ranging in size from two to five rooms, and calling for rentals from eight dollars to seventeen dollars a room. The demand has already outstripped the supply, and there is scarcely a day but that we receive inquiries in our office for space which we cannot furnish. In all the elevator buildings of this type within our charge, we have no vacancies at this time, and have had the buildings entirely rented since October 15. The same situation prevails in the non-elevator houses containing suites of this size, and the few vacancies which we have concern themselves with apartments of six rooms and up. There are still apartments of this character in non-elevator structures that are for rent.

In view of this encouraging situation there is an opportunity for the builder who will erect modern apartment houses arranged in small suites. There are many sites available within the area mentioned suitable for improvement along these lines, and in my opinion, it would not be difficult for a builder to assemble plottages at prices that would enable him to make a profitable investment.

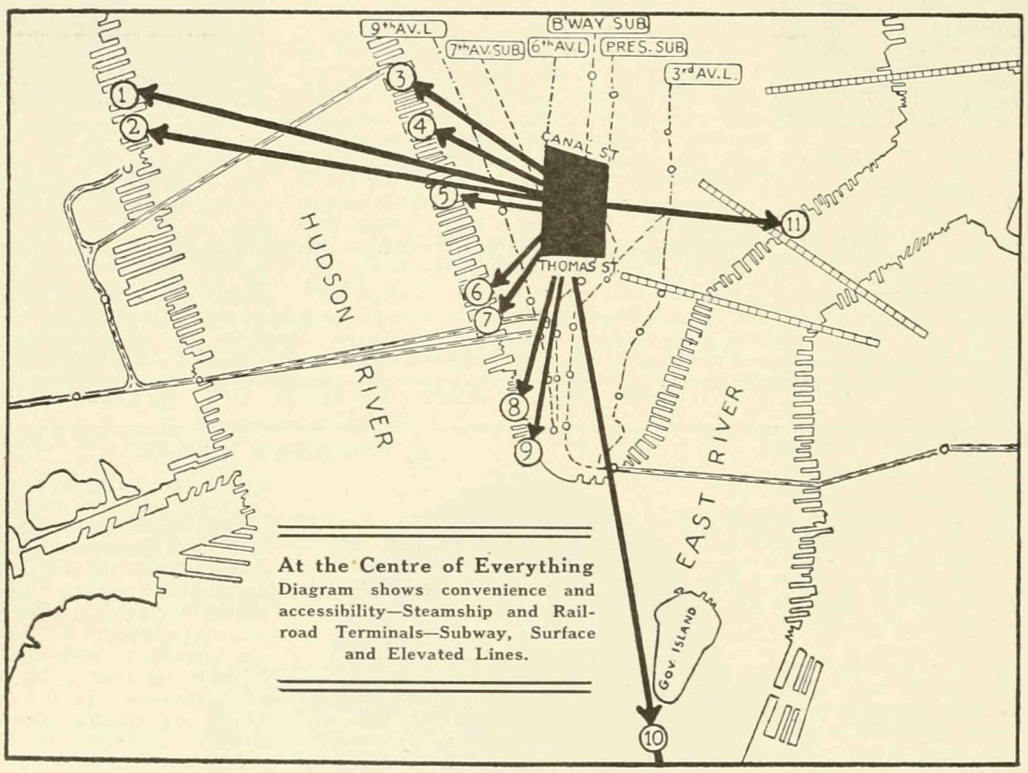
Rentals in these houses have maintained their former standards without the old-time rebates and allowances. If present conditions continue to exist, it is probable that in some locations, owners will even raise the rents, as a result of the present high cost of taxes, coal, labor and the supplies required for the proper maintenance of apartment houses. In order to conserve their equities and realize fair returns on capital invested, it may be necessary for many real estate owners of multi-family houses in this district to obtain a larger gross income from their holdings.

(Continued on page 71.)

THE WHOLESALE DRY GOODS CENTRE ASSOCIATION

Thomas W. Slocum, President
John C. Eames, Vice-President
Edwin H. Schenck, Treasurer
Charles G. Edwards, Secretary
317 Broadway, New York

A Cooperative Organization composed mostly of Wholesale Dry Goods Merchants who are tenants in the buildings they occupy in the Downtown Dry Goods Centre.



At the Centre of Everything
Diagram shows convenience and accessibility—Steamship and Railroad Terminals—Subway, Surface and Elevated Lines.

1. North German Lloyd
2. Hamburg-American Line
3. New Bedford Line
4. Savannah Line
5. Old Dominion Line
6. New York Central Lines
7. Fall River Line
8. Pennsylvania R. R.
9. Pennsylvania R. R.
10. Bush Terminal
11. Maine Steamship Line

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Established 1860

HOLDINGS MUST BE MODERNIZED IF TENANTS ARE TO BE KEPT

By CHARLES G. EDWARDS, of Daniel Birdsall & Co.

TEN years ago the American Woolen Company, then located in a modern office structure situated at the southeast corner of Leonard and Church streets, announced its intention of moving uptown and simultaneously the papers reported a lease of several floors in a building at Fifth avenue and 18th street to this large and important drygoods corporation. Thereupon began a movement of similar concerns located in the drygoods center to an entirely new district occupied chiefly at the time by retail concerns. The reasons given for this movement were many: the new district was more centrally located with regard to the hotels; its proximity to the great railroad terminals in New York made it apparently easier of access and convenient for the buyers from other cities to reach the salesrooms of the large and important drygoods firms. The principal reason and the one in which can be found more concrete evidence of the advisability of moving so large a trade was the desire for modern quarters that could only be obtained in a district where property owners were ready and willing to improve their holdings with desirable and modern quarters which the great needs of the drygoods trade demanded.

Before this movement assumed proportions the drygoods district of the city comprised that section between Duane and Bleecker streets extending from West Broadway to Elm street. There were few if any houses in the wholesale drygoods business located outside of this zone. It had taken many years to build a neighborhood suitably adapted to the needs of this business, requiring as it does extensive storage facilities and nearness to the railroad and steamship freight terminals located downtown; the buildings were occupied in their entirety and it was difficult to obtain space in which to transact business. When the first wholesale drygoods houses moved uptown the merchants wondered what advantages there were that induced such prominent concerns to move. The rents charged in the new buildings, built at a time when real estate values were high and the cost of building materials greatly in excess of what they were twenty years ago, were much higher than those charged in the downtown buildings, and it was impossible to foresee in any one restricted zone, where this drygoods business could be housed conveniently. Notwithstanding their wonderment, the movement continued until today practically all of the manufacturers of woolen goods and of silks and of laces are located north of 14th street, and in fact almost as far north as 34th street.

The large commission merchants and cotton goods concerns refrained from moving from the downtown district and are still located in that part of the city, although persistent efforts have been made to transfer these interests to an uptown location. The Wholesale Drygoods Centre Association, which had its formation during the early part of 1912, signified clearly the desire of these merchants to remain downtown and today more than two hundred of the principal cotton goods merchants of the city are members of this association which has for its purpose the conservation of the drygoods district.

With relation to the continuance of this section as the drygoods district it must be borne in mind that the buildings are old and although suitably adapted for the business which they house there is considerable room for improvement. The drygoods merchant is entitled to modern plumbing, first class elevator facilities and the other conveniences offered to tenants in the more modern structure built today. The property owner must realize the importance of this and should bend every effort to satisfy his tenants and to induce them to remain downtown, because nothing better can be obtained elsewhere nor gained by moving.

The association has done considerable work in an effort to bring home to the property owner his duty with regard to this tenant, but there is still more to be done. The landlord who feels that because his property has rented advantageously for twenty-five years, it should rent as well for the next quarter of a century, is standing in his own light and must be educated to the doctrine of improvement or suffer the consequence of vacant property.

It is to be hoped therefore that the landlord will use every endeavor to improve the buildings, so well built and so well adapted to the needs of the drygoods business, as to permanently retain the trade identified with this section for twenty-five years in its present location. Many concerns have moved northward, but the old drygoods center still is and doubtless will retain the most important wholesale drygoods and jobbing houses in the country. These trades which remained downtown are deriving more benefits than those who have gone further north. They have not lost business; they pay low rents; they have streets and sidewalks undisturbed for their wholesale business; they are near the wharves and railroad terminals built especially for them; and have the subways and surface transit facilities at their very door.

A definite fight therefore must be waged by all interested in this section of the city to prevent a further exodus and to preserve the famous old drygoods center. During the present renting season a large number of leases have been made both to old concerns and new ones at rentals in excess of those at present paid, and the outlook for the coming year promises to show a larger list of tenants in this vicinity than have been housed in the drygoods district for some years.

In justice to those property owners who have always maintained their buildings at a high standard, it must be said that there are many buildings which contain the modern improvements that the drygoods merchant is entitled to, and property kept up in this manner always has the first call on tenants looking for space.

Geographically, the situation of the downtown drygoods center is such that it appeals to the wholesale merchant, and if more improvements are made and the present buildings renovated so that business not only can be kept in the neighborhood but attracted to it, a reoccurrence of the movement uptown would be impossible. Tall buildings with their numerous elevators and confusion of shipping are not desired in the wholesale business. Low buildings such as are in this vicinity are better adapted for the purpose of the business they house, provided the conveniences offered are equal to any to be found.

Among the larger interests which have been in the neighborhood for some time and shall continue for an indefinite period are The H. B. Claflin Corporation, James H. Dunham & Co., Lawrence & Co., Minot, Hooper & Co., A. D. Juilliard & Co., William Simpson's Sons & Co., Parker, Wild & Co., and hundreds of others too numerous to mention. With tenants of this character expressing their willingness to remain downtown, through their association, the opportunities offered the owner are so great that he cannot afford to overlook them.

REALTY VALUES WILL BE ADJUSTED TO SUIT PRESENT-DAY CONDITIONS

By CHARLES W. MIX, of Frank L. Fisher Co.

REAL estate on the West Side, particularly from 72nd street to 110th street, is in a healthy and satisfactory condition. Values in this section have held well and have shown a steady improvement during the so-called real estate depression. The past year has witnessed an unusual renting season, and there are fewer vacancies in apartments and private houses in this section than for a long time. Many people appreciate the unusual advantages of this section, and it seems to be the general opinion among people who have given the matter serious consideration, that West End avenue has proved to be, and is, one of the best residential streets on Manhattan Island. It has all of the advantages, including excellent transportation, high elevation, unusual quietness and refinement and environment. There has been a large amount of new buildings erected in this section during the past two years, and this in face of the unusual high cost of labor and material. Rents have shown a decided improvement, and practically every apartment is rented.

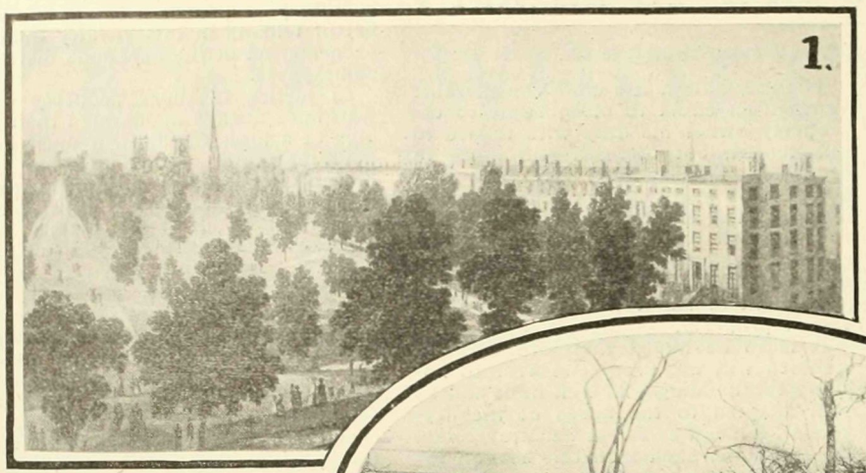
During the past year or two, there has been a tendency towards small apartments, but in my opinion if this trend continues it will be overdone and, as an investment, will not work out satisfactorily to the investor, unless he has long leases to responsible tenants. Builders, as a rule, do not stop to analyze the situation, but build a structure which they think can be readily rented and to return a satisfactory income. To a careful purchaser, this ought not to be the controlling feature. I am quite willing to predict that we are about to adjust ourselves to a new order of things, on account of the increased cost of labor and material. We will have a greater scarcity of high class investment properties for some time to come, owing to this great increase of cost to builders, therefore, the buildings erected previous to this high cost certainly will enhance in value. The builder therefore will be entitled to the natural increase in value by reason of this difference in the cost. Already many builders have advanced their prices as well as the rents. From my viewpoint, I do not believe the cost will decline within the next three to five years, even if the war should cease immediately. The steel mills will turn their energies to making material for buildings instead of munitions, and this alone will maintain prices.

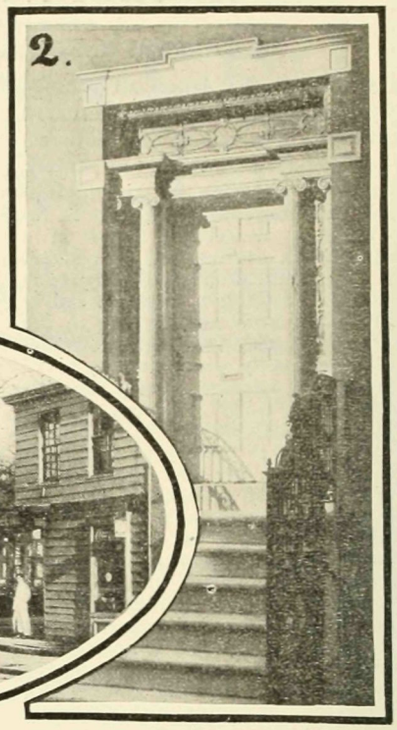
Great credit is due the committee which has given up so much of their valuable time and services in framing up the new Zoning Law. This is bound to be of great value in the future development of Manhattan Island. Also, great credit is due J. H. Burton, who has done so much in the "Save New York" movement. Few people realize just what has been done along this line and will not until it is put in actual operation.

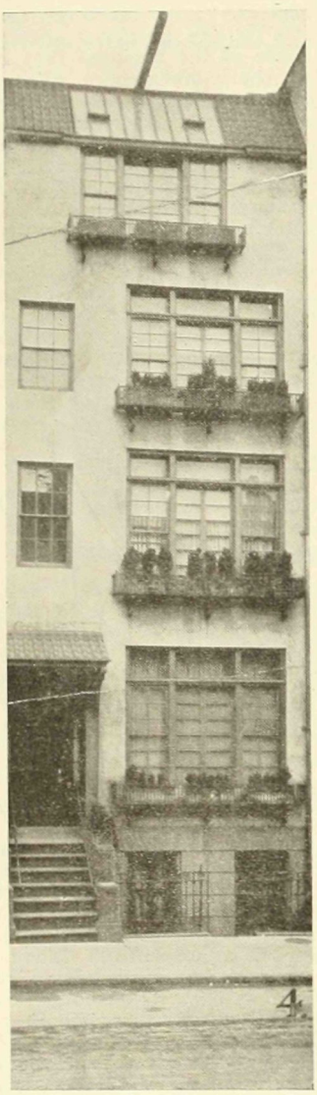
Investors will have to undergo a change of mind as to future values of high class investment properties, because for some time to come we will be confronted with a higher level as to values. Everything except real estate has already experienced this rise and realty must follow of necessity.

New York City is the greatest metropolis in the world, and in my judgment has just commenced to realize its power and position in connection with the whole country. We must go ahead with great strides and developments. Capital from all over the world is directed to this great city. When the transportation problem is solved, as it will be shortly, we will appreciate more fully its greatness.

Riverside Drive, with its natural beauty, affords a wonderful location for apartment houses. It has not an equal in the whole world. Boston thinks its location facing Back Bay is wonderful; Paris with its beautiful Seine; Geneva, Switzerland, with all the beautiful apartments and houses facing the beautiful Lake Geneva, cannot compare with this wonderful Hudson River. Riverside Drive will come back again to its own.







No. 1—Washington Square in Civil War times. No. 2—Typical Example of Colonial Doorway in Greenwich Village. No. 3—Washington Square of To-day, Showing Arch and One-time Home of Grave-digger. No. 4—How 124 Waverly Place Was Modernized. No. 5—Attractive Stoop of Olden Days.

Relics of Old New York of Which Washington Square and Greenwich Village Are Proud

ONE of the facts about Greenwich Village, not generally known, is that its celebrity was not due to the hospitable character of its inhabitants, or the exclusiveness of those who resided within its precincts, but to an epidemic of yellow fever. There had been visitations of that disease in 1791, 1795 and 1798. In the spring of 1799 the Bank of New York and the Branch Bank of the United States purchased two plots of ground in Greenwich Village, in what is now Bank street, and erected two structures on the sites. In 1819, 1822 and 1823 there were other epidemics, the latter being the most serious of all. It had an effect of almost depopulating what are now the lower sections of the city.

Those who could not go far away, on account of business, moved to Greenwich Village, a small settlement on the border of the Hudson River, about two or three miles from town. Very few people were left in the confined parts of the city, except the very poor classes. Boomed by the incident of the yellow fever epidemic, Greenwich Village became a place of residence for many well-to-do New Yorkers, and for almost a hundred years since has retained many of the characteristics then first secured for it.

Washington Square was once a Potters' Field. How many of the present generation remember this fact, and yet today there still remains the house which was tenanted by the grave digger. Tradition has it that this grave digger was named Peter Maggie, and that he paid $500 for the corner. The building was subsequently occupied as a tavern, and from one of the windows on the second floor General Lafayette witnessed the execution, in the square, of several highwaymen.

These few reminiscences serve to recall some of the history of the section, and intensify interest in it. As years passed many of the older families moved further uptown and houses became sadly in need of repair. Property values shrank. Owners were forced to rent to whom they could, principally boarding house keepers, so that some income might be obtained. The situation became serious until suddenly there was an awakening, and a number of artists and other professional people invaded the section, which again brought it into prominence.

Today there is an urgent demand for small apartments in Greenwich Village and Washington Square sections. Several improvements have been made, and in each instance striking results have been obtained—results which were not thought possible, and with only a moderate outlay. The secret of these successes lies in the fact that the sections are accessible, being only a few minutes from both the downtown business district and the shopping and theatrical centers.

Another important factor is that the houses were honestly built and will stand alterations and modernizing. Illustrated on this page are several doorways which were placed in some of the old houses, and are typical of the architectural treatment of the day. These features lend themselves to the improvements called for by the present demand and help the making of artistic buildings which go to create a "City Beautiful."

Owners of buildings will do well to watch the trend. Builders should look over the situation and modernize old structures. Investors should investigate the section and learn for themselves what can be purchased and what splendid income returns are possible—what others are getting, and what it has cost them.

Property is available at moderate prices, and the possibility for future enhancement is assured. At the present time the demand exists and it will be a long time before such an opportunity again presents itself in New York City. Communicate with me, Mr. Builder, and let me show you some of the properties which are ripe for improvement, and you, Mr. Investor, let me submit propositions which will net splendid results.

Pepe and Brother

40 South Washington Square, New York

CHANGES IN WASHINGTON SQUARE STARTLING IN CHARACTER

By VINCENT C. PEPE, of Pepe & Brother

WASHINGTON Square is experiencing activity along well-defined lines. From present indications, it is probable that the growth will continue and a new era inaugurated for a section which has contained many properties operated on a far from satisfactory basis. It has been found unusually profitable to remodel the old-fashioned dwellings to meet modern demands and a number of projects of this character have recently been undertaken and completed.

The five houses at 13-15 West 12th street have been altered at a cost of about $35,000, into twenty apartments of two rooms and bath each, which have been leased at an advantageous rental ranging from $70 to $80 a month, bringing in a total rental of about $16,000 a year. The rooming house at 23 West 12th street was altered last summer by Albert Adams into apartments of similar size, and the rental has been increased from $2,100 to $4,300, as a result of the expenditure of about $6,000. An outlay of $6,000 by John H. Henshaw of 49 West 12th street has increased the income of this building from $1,500 a year to $4,300.

The improvements in Waverly place made last year, similar to those in West 12th street, have also created a demand in that section. The house at No. 112 has been altered by Mrs. Catherine D'Anglemont, of Paris, France, and the former rental of about $1,300 a year will probably be advanced to $4,500. No. 77 Washington place has also been sold and its alteration is expected to show an increase in rental from $1,500 to $5,000 a year.

No. 132 West 4th street has been leased for a long term to Mrs. Bella Croft for alterations into studios, and rentals will advance from $1,400 to $3,000. Other alterations of similar character include the house at 129 West 11th street, remodeled by Mr. Bevans, into studio apartments, and 23 Washington Square North, which is being altered by Max Schoop for his own residence.

This tendency for remodeling old private houses, which have outlived their former usefulness, may have said to begun about eighteen months ago with 50 West 12th street and 124 Waverly place, which were remodeled into studios. The former house, No. 50 West 12th street, was a four-story and basement residence on a lot 21x103, containing six rooms to each floor. It was used as a rooming house, and returned a rental of about $1,500 a year. This property could be purchased for about $20,000, $5,000 being required in cash. The location was excellent, and well adapted for alteration into studios. The estimated cost of the alteration was placed at $5,000, and figuring on a conservative basis, we estimated that the rental for the building in its altered condition would be $3,100. These calculations showed that an outlay of $5,000 would result in the increase in rentals of 60 per cent.

The house at 124 Waverly place was of the four-story type, on a lot 22x97 feet, also occupied as a furnished room house. The tenant had been in possession for about eight years at an original rental of $1,600 a year, but on account of the deterioration, rentals had dropped to $1,000. The house was on the market for $20,000 in cash. The estimated cost of the alteration was $10,000, and we figured that the rentals could be increased to about $4,000 a year.

Efforts to interest clients in these projects were in the early stages attended by absolute failure, and the contention that rentals could be increased to such a large extent, were declared to be impossible. When, however, enough money was raised for the purchase of 50 West 12th street and the alteration was actually begun, immediate success resulted. Before the building was half finished the house was entirely rented

VINCENT C. PEPE.

to three tenants at a rental of $3,640, showing that my original figures, which had been declared impossible, have really been conservative.

The same results were obtained in the remodeling of 124 Waverly place, where one month before completion, four apartments were rented to desirable tenants on one and two-year leases, or about $4,700 a year, about $700 a year more than the original estimate.

The next experiment was made on 108 Washington place, a three-story house west of Sixth avenue, which I had had on my books for sale for nearly a year and which I could not sell. The principal objection to its alteration along the lines similar to those at 50 West 12th street and 124 Waverly place, was that the property was west of Sixth avenue. The closing of the deal regarding this property was also handicapped by reason of the fact that foreclosure was threatened, but this matter was finally adjusted and the alteration was undertaken. The property was at that time rented to three tenants at $73 a month. No sooner was the house vacated and work started when applications began coming in, and in two weeks it had been entirely rented to three different tenants on two-year leases. The alterations were, in general; new plumbing, steam heat, electric light, new floors and plain decorations. The rentals now are as follows: the parlor floor and basement that formerly rented for $23, now bring in $65. The second floor, formerly rented for $21, now returns $65, and the third floor, which brought only $23, now rents for $75; the entire rental indicating an increase of $134 a month.

In former years the principal renting season was October, but the exceptional demand which has shown itself, has brought about a situation where people rent residential space at all periods of the year. The same interest which is being shown in space in the remodeled private houses is also being manifested in the apartment houses in this section. The new building at West 10th street and Sixth avenue, built on a plot 100x100 feet, by Dominick Abbate, accommodating sixty families, was entirely rented before completion at a higher rental than was anticipated. A similar structure at 207-209 West 11th street, erected by the Fogliasso-Clement Company, was also rented before completion, and the same success attended the effort of Samuel Lippman with his house at the corner of West 11th street and Waverly place, which was entirely rented one month before it was finished.

Important apartment house operations are contemplated, which will add further prestige to this section of the city and reflect its growing importance as a residential neighborhood of high rank. A nine-story high class apartment house, with all modern improvements, will be built at 44-48 West 10th street. Plans have been filed for another large structure at the corner of Thompson street and Washington Square, on a plot 75x116 feet, to involve a cost of about $800,000. The old residence of General Daniel Sickles will also furnish a site for an improvement at the corner of 9th street and Fifth avenue, on a plot 110x110 feet. The improvements now being made by the trustees of the Sailors Snug Harbor, when completed, will also tend to attract a great deal of attention to this section on account of their attractive and artistic design. An important operation now under way affects the plot at 90-92 Grove street, which is being improved with a studio building by Andrew Foreman.

In spite of the absorption of so great an amount of space in this section the demand is still continuing for small suites, and we are receiving inquiries, not only from artists, writers and sculptors, but also from professional people, for apartments ranging in size from three to six rooms, and calling for a rental of $50 to $150 a month.

The demand for apartments and studios began originally from artists and writers, who were attracted for sentimental reasons to the old-fashioned dwellings, which had been built in the early part of the century and which were still standing as reminders of the old-time residential supremacy of the section. These tenants, however, besides wishing to retain the old-fashioned features of the houses, including the large rooms, fire places, old mantels, Colonial mahogany doors and the old-time locks and door knobs also demanded the modern conveniences, such as electric light and steam heat. They were willing to pay a good price for two and four-room apartments. The growth of this artists' and writers' colony has been considerably augmented by the new attitude of property owners, and the general experience has been, practically without exception, that the old-fashioned houses which have been modernized and which yet retain many of their old characteristics, have been successful.

Owners have even been able to capitalize the old-fashioned details of Colonial construction, which has a great value in the opinion of the artists. I did not attach much importance to these details, but it seems that the mahogany doors, with silver knobs and old marble mantels and columns, possess particular charm. About fifteen months ago, when I was altering the house in Waverly place, I had made arrangements to remove the Colonial door with its columns, and had discarded the old brass knob. When one of the artists, who had hired a studio in the building, discovered that I had removed these products of the by-gone generation, he made such a vigorous protest that the old door and knobs were saved, and instead of being a detriment to the property, actually added to its value and charm.

This state of mind on the part of the class of tenants, who are seeking space in this section, may continue to be capitalized by enterprising owners. There still remain in the Washington Square and Greenwich Village districts a number of old houses, which in their present condition, may not be considered as particularly desirable investments. The recent alteration and remodeling, which has characterized the activity in the neighborhood, offer practical examples of what may be done toward placing these properties upon a substantial basis.

The reason for the early lack of interest in alterations at that time was the impression among property owners that the growth of the loft building movement west of Broadway, even as far over as Washington Square East, had destroyed the residential desirability of the section, and had been responsible for the removal of many of the old residents from the section.

My contention is that many of these residents can be held in the neighborhood if the owners would modernize their buildings, and that property may be well rented on a good paying basis to desirable tenants.

MANY SITES IN LINCOLN SQUARE SECTION RIPE FOR IMPROVEMENT

By P. S. TREACY

YEARS ago builders and investors realized the advantages of the Lincoln Square section. Unfortunately, the structures which were erected, while they supplied the requirements of the time, are now, for the most part, out of date, and not suited to present day demands. Apartment house builders in those days confined their efforts largely to the five-story "walk-up" type of structure, and a house was considered modern if hot water and steam heat was supplied. Those who improved business properties erected the "taxpayer" type, which, at best, is only a "stop-gap."

Times have changed. To-day people demand thoroughly modernized buildings, whether they be apartments, offices or stores. This demand far exceeds the present supply and this statement is borne out by the fact that there is hardly an apartment to be rented, and stores, especially on Broadway, are at a premium. The owners of the Hotel Marie Antoinette realized this condition, and stores have been installed on the lower half of the Broadway frontage. Though this improvement has just been completed, there is only one small space unoccupied to-day.

Lincoln Square has the advantage of practically every transit line, both completed and projected. The Sixth and Ninth avenue elevated roads cross the square with a station at 66th street, while only a few feet distant is the station of the subway system, which also transfers to the Third avenue elevated road in the Bronx. As to the surface lines, every section of the city can be reached, for both the "Green" and the "Red" lines operate in this section.

Not for years has renting been as good as at the present time. Flats containing six and seven rooms are held at from $5 to $5.50 per room. No new houses of this type have been erected during recent years, and naturally the older ones are deteriorating. Land values are so high in this section that it will not pay to erect old style flats on plots, and when the time comes these old buildings will be demolished and business structures will be erected on the sites. It is difficult to place a front foot valuation on land in this section, and about the only thing to do is to stand off and guess what the owner wants.

There has been considerable building of the better type between Central Park West and Columbus avenue. The Hotel des Artistes is in course of construction in West 67th street, between these thoroughfares. The building is of the studio type, fourteen stories high, having non-housekeeping suites. In the south side of 67th street an eight-story studio apartment is in the course of construction. This latter building is arranged for housekeeping. In the north side of 70th street, just west of the park, another non-housekeeping apartment containing small suites is in course of construction, while in the south side of 69th street a nine-story apartment house with kitchens is now being built.

At 109 to 123 West 64th street a plot 148x100.5 is now being improved with a twelve-story building. Six lots on Columbus avenue, northwest corner of 62nd street, were acquired some little time ago for future use by the Cadillac Motor Company.

But little has been done in the private house situation. Most of the dwellings which were erected for private occupancy have been leased for boarding house or lodging purposes; some are slightly altered for business. The sales market is quiet, but what the section needs is new buildings, for they can be readily marketed on account of the renting demand.

Ownerships of property are divided, and plots are hard to obtain, except from different owners, and the values placed on these different properties frequently show considerable variance.

The express station recently completed on the elevated system at 66th street has been a material benefit to the section, but what is urgently needed is interchangeable transfers between the underground and overhead rapid transit lines.

BUYERS AT AUCTION CAN BE FOUND FOR WELL LOCATED PROPERTIES

By BRYAN L. KENNELLY

IN view of the remarkable and unprecedented conditions existing throughout the United States, and taking into consideration the various elements usually attendant upon the local real estate situation, I should say that the real estate auction market for 1916 has been good and worthy of encouraging reflection. There is a well defined disposition on the part of buyers to purchase New York City and metropolitan district real estate, provided the price is within reason.

The suburban auction sales have as a rule been successful this year, Westchester having been the particular bright spot. Business in this section at both public and private sale has been excellent for the last two years, and I anticipate for the coming year an even better season.

While there have not been so many offerings during the year as in former years, yet those properties which were put up were fairly well absorbed by a desirable class of purchasers, and this year has demonstrated, as have former years, that well located real estate of any character may be offered at public sale with a certainty that some one will make an offer for it.

There are many new faces in the salesroom, and the bidding is becoming somewhat more spirited. We are receiving numerous inquiries for properties in various sections of the city, from buyers representing practically every class of purchaser, from the small investor who seeks to make his first plunge into real estate, to the tried and experienced professional trader who has been actively in the business for many years.

While the election has not been considered as a retardent to real estate activity, the outcome was nevertheless awaited with keen interest by those identified with real estate, and now that the issue has been settled, there may be a tendency for the beginning of the slow and sure growth of interest in real estate, which we all feel must come very soon.

Undoubtedly real estate trading has been handicapped by the enormous amount of speculation in the stock market and the diverting of huge sums of money into these channels which normally seek an outlet in real estate. This tendency has continued and from present indications there will be no abatement. It is probable, however, that speculation will be lessened when stocks reach a point where they yield less than 5 per cent. on the capital investment.

With the steady and consistent rise which has been characteristic of stock trading within recent times, it may be that this point has already been reached. When it is reached, a tremendous amount of money will be available for permanent placement in real estate bond and mortgage, a development which is always the forerunner of increased activity in all branches of the real estate market. I look to see a splendid revival in all the divisions constituting the real estate market. In my opinion the outlook for 1917 is one of the most encouraging and optimistic in many years.

HOW A REAL ESTATE OPERATOR ANTICIPATED THE DEMAND

By HARRIS MANDELBAUM

ANTICIPATING the advance in the cost of building construction about two years ago, we started in buying lots on Washington Heights in the two sections that we considered as being best adapted for improvement with a good class of six-story elevator apartment houses, for which we knew there would be a big demand, and were successful in accumulating about 175 lots in the vicinity of 157th and 169th streets subway stations, along the lines of Fort Washington avenue and Riverside Drive.

We bought, for the most part, lots that had a great deal of rock and were not particularly attractive looking to the average builder in their rough condition. We took advantage of the dull lot market and were fortunate in securing our land at very reasonable prices. We put a large force of men to work immediately in clearing these lots of rock, excavating, completing streets and putting in sewers, and then started in a campaign of selling to good builders. The result has been that these builders have now completed about twenty-five high class houses, many of which they have sold and every apartment in them being rented. As most of these houses were either finished or completely contracted for before the advance in the price of material and labor became operative, the builders are in a position to sell their finished product at a profit, at less than the actual cost of construction to-day. Of course, this required the investment of a very considerable amount of capital, but inasmuch as our judgment of market conditions has turned out correct, the outlay was justified in every respect.

It is really quite a remarkable situation to have built up two entirely new sections with high class houses and populated these two districts with thousands of families, in the face of what was otherwise a dull and inactive market. While the other parts of Washington Heights are in fairly good condition as regards the occupancy of existing buildings, these two sections above referred to are the only parts where there has been any considerable amount of building in the last year or two, and from all present indications the builders who have put their money, time and energy into the up-building of these sections, will, in the coming season, reap a very satisfactory reward for their foresight.

It is not likely that there will be very much new building this winter and spring on account of the excessive cost of such construction and inasmuch as the demand for moderate priced apartments keeps on growing larger and larger and the supply is so limited, there must, in consequence, be a substantial increase in rentals next season, resulting in satisfactory sales of finished product. It is difficult for the investor with from $20,000 to $50,000 cash to put in improved real estate, to find anything that will yield so substantial and satisfactory a return as can be realized in these two localities on the Heights at the present time.

Our first undertaking in this section was in the spring of 1912, and during the past four years we developed about 150 lots which we purchased from the Estate of Loyal L. Smith, which operation is now fully completed, and at the present time of writing our builders are completing a number of buildings on the former holdings of the J. Hood Wright Estate.

GRAND CENTRAL TERMINAL ZONE FERTILE FIELD FOR INVESTORS

By ROBERT E. SIMON, President, Henry Morgenthau Co.

THE Grand Central Zone so-called, the midtown section of the city in the vicinity of Grand Central terminal, is one of great interest from a real estate standpoint. Within a period of twenty years it has been developed from an exclusive residential section into the geographical as well as the actual commercial centre of Metropolitan New York. It is the only district where there can be found representatives of the best of every phase of our great city's life: Residences, clubs, theatres, hotels, retail shops of every description, department stores, banks, trust companies, stock and bond brokers, office buildings whose tenants are types of every class of profession and business.

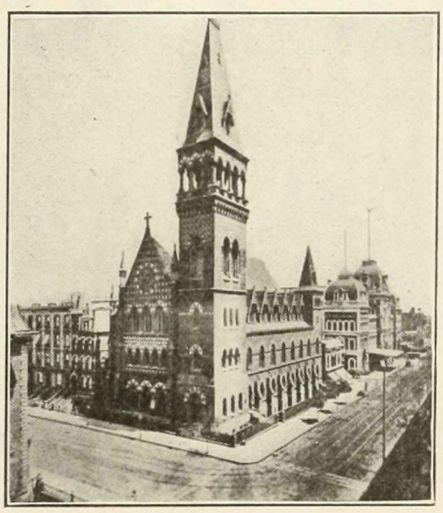
As a transportation center it is unrivaled. At Fourth avenue the street will be used six times: by the Steinway tunnel, Broadway subway, Lexington avenue subway, surface cars, Fourth avenue overhead connection and elevated railroad, in addition to vehicular and pedestrian traffic. When all of these transportation facilities are in operation and completed there will be a greater concentration of traffic in the Grand Central Zone than in any other part of the city.

Each generation in the past and our own has seen a movement northward, beginning with the early settlers who went beyond the wall of the stockade at what is now Wall street. It is fairly safe to assume, however, that notwithstanding the experience of the past, no such radical shifting of trade centres will take place in the future. The city, due to new bridges and tunnels, is rapidly rounding out, and the shops have at last located in the physical, logical and most accessible centre of the greater city and its environs.

The two great railroads, the New York Central and Pennsylvania, which bring an army of visitors into our midst and the big hotels which house them, are anchorages difficult to break away from. The zoning of our city has safeguarded this great mart from invasion by the undesirable needle trade and other manufacturers. Central Park is an effective barrier to the north.

If we are correct in assuming the above it is inevitable that the future will see a continuously increasing intensive use of the available space in this zone from 34th to 57th streets, from Lexington to Sixth avenues. The interesting question is, "Where will values cease?" Rents are only limited by the purchasing power of the community and the maximum volume of trade of a specific class that can be done in a given space. We have some great surprises in store for us in both these conditions. Our population, resident and floating, will continually increase and will not in centuries to come decrease; therefore nothing need be feared for lack of customers. Methods of business will no doubt have to change.

Within the last decade we have seen the upper portions of buildings used more and more for purposes which formerly were believed would only thrive on the street floor. Therefore, one result will be that the upper floors will be more in demand for a greater variety of purposes and command higher prices. Stockrooms will probably have to be located in nearby localities where rents



OLD GRAND CENTRAL TERMINAL.

are cheaper, the shop in the zone being more of a show or sample room permitting of a greater volume of business.

Economies of space will intensify the volume of business and increase the amount of rent payable, all of which will naturally tend toward higher rents and higher land values.

We have witnessed some astounding rises; for example, a building in 42d street, which twenty-one years ago was rented for $5,000 net per annum, has just been leased for a further period of twenty-one years for $25,000 net, an increase of 400 per cent., and the premises have been unchanged and are being used for the same purpose. Staggering as these figures may be, the top has not yet been reached.

As the stability of land values becomes more and more assured, the rate of interest on capital demanded by investors in this district will decline. The combination of increasing rents and decreasing demand for return on capital will produce land values never before dreamed of.

As the wealthy class in this country increases, trade in the Grand Central Zone will become more exclusive, which will, no doubt, have the effect of lesser important shopping centers springing up in various parts of the city. This will be hastened by the ever increasing number and kinds of chain stores, which have had such remarkable growth and development in the past ten years.

The most serious problem is the one of handling the traffic. When Fourth avenue is bridged over 42d street and the grade at 34th street corrected, considerable relief will result. In all probability, however, the day will come when the Sixth avenue elevated must come down and the trains operated in a tunnel in order to furnish an additional unobstructed artery for travel.

Land in the Grand Central Zone will be like paintings by the old masters. You cannot make any more originals; the supply of the genuine copies is limited and the demand for them is increasing.

WEST SIDE TERMINAL FACILITIES SHOULD ENHANCE REALTY VALUES

What Central Railroad's Project Means

GREAT progress during the present year toward a final and satisfactory solution of the New York Central Railroad improvements on the West Side of Manhattan has been made. The question of primary importance has been the discontinuance of the use of the streets and avenues at grade for railroad purposes. Inseparably connected with this question has been that of the enlargement, reconstruction and improvement of the terminal facilities. Not less important than either of these has been the desirability of so carrying out the necessary changes as to result in the greatest municipal improvement with respect to public streets, avenues and parks.

Intelligent co-operation on the part of the city administration, through the Board of Estimate's Committee on Port and Terminal Facilities, and the officials of the railroad company has been directed to accomplishing all of these results. Under the plans, which have been made public, all of the crossings of the tracks at grade by streets between 72d street and Spuyten Duyvil will be discontinued. South of 59th street the tracks will be taken out of Tenth and Eleventh avenues, West and Canal streets, and carried on an elevated structure to a new southerly terminus at Canal street. The tracks through the new park at Inwood Hill, through Fort Washington Park and Riverside Park, will all be covered over so that the area now occupied by the tracks through these parks will be added to the park area.

The freight stations at Manhattanville, 60th street and 33d street will all be enlarged and reconstructed, and the new terminal at Canal street will take the place of the present St. John's Park. All of these stations are at the present time inadequate and out of date. Under the new plans, an effort will be made to make them adequate and so arranged as to best meet the requirements of shippers and consignees. Provision is made for providing facilities to industries along the line.

Without question much of the real estate through which these improvements will be made has been held back by the lack of

(Continued on page 61)

GRAND CENTRAL TERMINAL AS IT IS TODAY.

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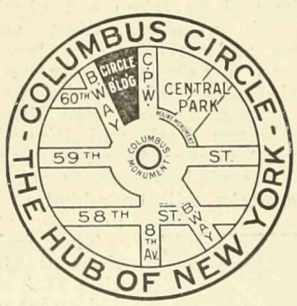

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STRAUS SQUARE SECTION IN HEALTHY STATE

Renting Conditions Better Than Ever Before—Demand Far Exceeds Supply—Fine Opportunity For Builders

By THOMAS J. O'REILLY

THE section of the West Side from the south side of "Straus Square," 106th street and Broadway to West End avenue north to Morningside Heights and West 125th street has more than held its own with the other sections on Manhattan Island during the past year. It is true that there were fewer new building operations during the year, which had its effect materially upon the general renting throughout the section. But two new buildings were erected this autumn, the "San Domingo" on the west side of "Straus Square," near 107th street, and the "Rutherfurd" at the northeast corner of 108th street and Riverside Drive, both of which are fully rented. The results obtained by real estate agents and property owners were beyond all expectations and a good conservative rental value was maintained throughout, and in many instances substantial increases in rentals and longer term leases were obtained. There were fewer changes in tenancies than experienced in many years.

VIEW OF STRAUS SQUARE.

An unusually large demand as in other years was for apartments of three, four and five rooms (a floor-plan which builders in recent years seem to have entirely overlooked); but notwithstanding this fact there was a larger demand for apartments of six to ten rooms than there has been for several years. The demand far exceeded the supply, a condition which we have not experienced in many years. There are continuous inquiries for apartments, and at this writing I have but one apartment for rent, this I was compelled to take possession of this month due to unforeseen circumstances.

The stringency of the money market up to a year ago and the withdrawal of the title companies and several of the insurance companies from making building loans to builders was an important factor in the re-establishing of the excellent healthy conditions which now exist in this section. The keen competition between builders of new buildings and owners of the older structures has always created an unsettled condition which has usually resulted in the vacating of the older buildings. It is my belief that there will be fewer apartments for rent in the renting season of 1917 than ever before, such conditions will naturally have their effect upon the sale and mortgage markets and will prove an impetus to their general activity.

Sales in 1916 were fair, but not what might be considered normal; there were many exchanges which of course tended to have a good effect upon a dull market, but with the tremendous wealth which is now at this country's command its vast sums will logically find their way into the real estate market. I look to the daily return of the investor who is desirous of investing his money in the modern type apartment house, whether it be on the side street or on the avenue.

Store property is also strongly in demand. Stores along Broadway and Amsterdam avenue have been fully rented and in many cases waiting lists, of desirable firms, seeking desirable locations, are in hand.

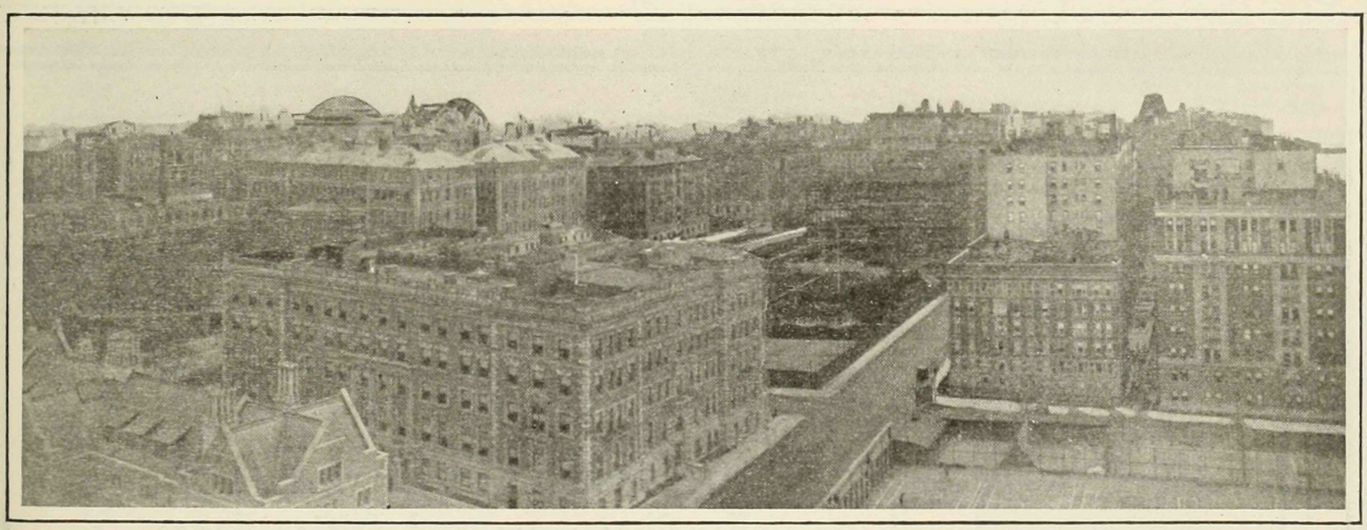
It is important to note that the vicinity of 110th street and Broadway is gradually becoming the busiest centre on the West Side of the city north of Columbus Circle; the demand for stores in this particular vicinity is far in excess of the supply and it may be interesting to know that the rents obtained there, I now refer particularly to the building at the northeast corner, average better than $300 a front foot for inside stores and in proportion for the corner. One of the active thoroughfares is 110th street. It is the first crosstown street north of 59th street which runs from river to river. It is the northerly side of Central Park and consequently makes it a prominent highway to Riverside Drive. It may be interesting to know lots on this street near Broadway, which ten years ago were valued at $20,000 apiece, are now held at better than $40,000.

Farther north we have the section familiarly known as "Morningside Heights," a large portion of this area being occupied by the "Cathedral of St. John the Divine," "St. Luke's Hospital," "Columbia University," and its allied institutions, including "Barnard College," "Teachers' College," "Horace Mann School" also the "Union Theological Seminary," and "Institute of Musical Art."

Barnard College is now erecting north of 116th street a new structure, which is to be known as "Student's Hall," made possible by an endowment from Jacob H. Schiff of $525,000, which amount is to cover the erection and the complete equipment of the building.

All of these institutions have been great factors in contributing to the increase of the tendencies of the apartment houses and the dwellings in the Morningside section. The yearly increase in the number of students attending the various institutions in the autumn and summer sessions really offer the opportunity for the erection of apartment houses offering a special accommodation to the demand of the faculty and students.

I have always believed that the builder has in this vicinity an open field to erect a building of this type. All desirable apartment houses in the college section are now fully rented; and this very fact suggests the unquestionable necessity of having a subway station somewhere between 116th and 125th streets to accommodate the continually increasing transient population and the people living between 120th and 124th streets from Morningside Drive West to Riverside Drive. Land values have held up strong under the pressure of a generally poor market; and I look for a healthy and continuous increase in values.



LOOKING SOUTHEAST FROM RIVERSIDE DRIVE OVER COLUMBIA UNIVERSITY.

Large estates and institutions are desirous of placing their money in this part of the city, but it is seldom that a mortgage changes hands, therefore making desirable loans a great scarcity. Money for bond and mortgage is plentiful and the tendency because of this condition is to force the rate to 4½ per cent. I find that this condition not only prevails on the upper West Side, but throughout every section of the city as a whole.

Taking into consideration the vast accumulation of wealth in this country in the past two years, a goodly portion of which New York City shares, I can only see a great reflection of prosperity on the general real estate condition.

The large sums of money spent by the city government in municipal improvements and particularly in extending the transit lines has added a decidedly stimulating effect upon real estate in general. I look to 1917 to be the most active in every department of the business we have had in years.

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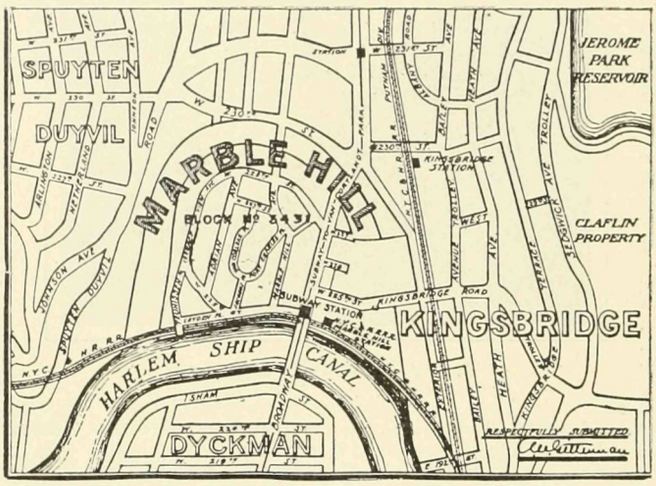

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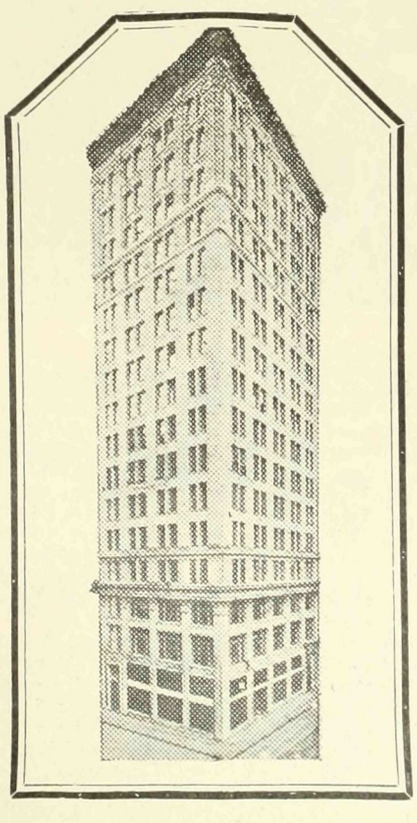

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LOW LAND VALUES PREVAIL ON HISTORIC MARBLE HILL

By A. N. GITTERMAN

THE passing out of existence of the bridge over what was once known as Spuyten Duyvil Creek, which from time immemorial was the important connection between Manhattan Island and the mainland of North America, is the event which stands out pre-eminently as most important in the annals of Upper Manhattan for the year 1916. The regulating and grading of Marble Hill avenue, between West 228th street and West 230th street was the occasion by which this old landmark fell victim to the progressive march of city improvements.

It is such incidents that cause one to pause in the consideration of modern projects such as interest the real estate fraternity, and by retrospection note the progress of events from the days when the land about the 225th street and 231st street subway station was the quarry which yielded the marble still found in old houses or other improvements in this city; when Fort Prince Charles stood at what now are city lots on the south side of West 227th street, between Van Corlears Place and Fort Charles Place, and resisted the further invasion by the English redcoats; when Jacob Hyatt picked the fruit from his orchard extending from Broadway, then Kingsbridge Road, west to the old Spuyten Duyvil Creek and included Terrace View and Adrian avenues, Van Corlear and Fort Charles Places, and Marble Hill avenue and drove his wagons over Farmer's Bridge (now 225th street) to the market at Fordham.

From those days to the present is the span of time during which our city was transformed from a village to the metropolis of the world, and Marble Hill to a community, the value of whose land is assessed at $1,623,900, and where unsurpassed transportation facilities are provided by means of the municipal subway, the New York Central Railroad and the trolley cars.

The total area of Marble Hill is equivalent to 610 city lots, of which 196 city lots are included in the street system. This constitutes 32 per cent. of the entire area. The remaining 414 city lots are available for development. This entire area is twelve times as large as Madison Square Garden, which sold for $2,000,000 last December, about the assessed value of Marble Hill and the improvements in their entirety. There are 111 houses erected, of which 95 are frame dwellings built many years ago. These houses have a total assessed value of $173,000, which is at the rate of $1,820. The sixteen masonry buildings are dwellings having an assessed valuation of $339,300, which is at the rate of $21,206. The assessed value of the 414 city lots is $1,623,900 or an average of $3,920 a lot.

Attention is more particularly directed to Adrian avenue. This street will become a thoroughfare of importance not only to Marble Hill, but also to the entire city. It is a well known fact that the bridge at Broadway and the Ship Canal can no longer accommodate the ever-increasing traffic over it. Relief can come only by placing an additional bridge about 1,000 feet west of Broadway and connecting Seaman and Adrian avenues. The former street already has a width of 80 feet and the latter named street, now 60 feet wide, should be made 80 feet and extended north to West 230th street. This can be done cheaply, as no improvements stand in the way of the widening or extending of the street.

To establish the fact that the territory with its varying elevations is exceptionally well provided in regard to street grades, it may be pointed out that while the maximum gradient is 13.6 per cent., the total averages but 4.46 per cent. The distribution of these grades over the hill is clearly illustrated by the following figures: Out of a total of 10,064 linear feet of streets, 5,128 linear feet has a gradient under 4 per cent., and averages 1.57 per cent.—2,283 linear feet has a gradient over 4 per cent. and under 6 per cent. and averages 5.24 per cent.; and 2,653 linear feet has a gradient over 6 per cent. and averages 9.34 per cent.

The street system now existing on the hill was adopted by competent authority in 1892 and title to each and every one of these streets is vested in the city. For the most part all the streets are graded, paved and sewered, and have all the other improvements furnished by the city and the public utility corporations. The average cost for grading, paving and sewering the streets was $500 a lot. There is 14,000 linear feet of frontage and the average plottage a foot front is 74 square feet. These facts are called to the attention of the real estate operator, and comparison with other parts of the city is invited.

An intensive development of this section will yield more light, air and view than is possible on flat country with a rectangular street system. In the usual city block having dimensions of 200x500 feet surrounded by 60-foot cross streets and 100-foot avenues, the streets occupy 56 per cent. of the total area and each foot of frontage has 72 square feet of plottage. In Marble Hill the streets require 32 per cent. of the total area and each foot of frontage has 74 square feet of plottage. This remarkable condition is caused not by narrow streets, but by reason of a more scientific layout than exists in the rectangular plan. Schools and churches are in the immediate vicinity, and a post office is already located here. Ample fire and police protection is afforded.

The exceptionally low values now prevailing on Marble Hill will exist not much longer than the time necessary for the full meaning of the facts herewith presented to become impressed upon the minds of the interested public.

Some are appreciating the necessity for additional housing at Upper Manhattan, as is evinced by the sales made to and by the Marble Hill Development Corporation of plots on Marble Hill avenue and the purchase by the Loyal Building Company which is about to improve the corner of 227th st. and Adrian ave.

LOWER EAST SIDE OFFERS TODAY OPPORTUNITIES FOR BUILDERS

By JOHN H. HALLOCK

JOHN H. HALLOCK.

IN discussing present day real estate conditions on the Lower East Side it is necessary to go back several years in order to trace the beginning of the development which had its inception in 1907. Prior to that time the demand for residential space was greater than the supply, and, as a general rule, owners, with but very few exceptions, were realizing excellent returns on their investments, and there was every indication that this condition of affairs would continue.

After the opening of traffic on the Williamsburgh Bridge, and the actual operation of new transit systems in the Bronx and East New York, the upbuilding of several sections of the Bronx and Brooklyn became more marked. The opening of bridges, subways, tunnels and other mediums of transportation induced many families to leave the Lower East Side, and it may be safely said that a great majority of the residents in these new districts that have been created within the last ten years came originally from the Lower East Side.

Nevertheless, real estate values on the Lower East Side held steady, and although some sections suffered more than others, as a general rule property owners retained confidence in their holdings and conditions remain fundamentally unchanged. The great Lower East Side still remains a residential district, housing a vast tenement population and has many buildings used for their religious, educational and recreational needs.

In 1914, when real estate was beginning to show signs of a revival in many sections of the city, the war was declared and a complete shutting off of immigration followed. This situation meant not only the loss of thousands of new arrivals who were being added to the Lower East Side population, but it also meant the return of many people to their native countries.

Other factors have also tended toward encouraging the removal of families to the outlying sections of the city. One of the most important among them was the shortening of the hours of labor, which has affected practically all lines of manufacturing in which present or former residents of the East Side are interested. There was a time when the length of the working day made it almost impossible for the working man to live an hour's ride from his place of employment, but with a shorter working day he has been enabled to move to the Bronx or to Brooklyn and spend an hour, or even more, getting to and from his shop.

In the face of this keen competition property owners on the Lower East Side have realized that the chief hope in conserving their equities lies in the modernization of their holdings. An effort is being generally made not only to retain the old families which still remain, but also to encourage former residents to come back into modernized buildings. The owners are complying with all the regulations of the various city and State departments. They are installing, even in the cheapest tenements, hot water supply, new ranges, white enameled sinks and other improvements of various kinds.

In spite of the exodus of population, there is no question but that the Lower East Side still retains a good deal of its old-time favor, and the new attitude of owners, coupled with the desire of many tenants to remain downtown, provided that housing conditions are made more modern, should go a long way towards strengthening the rental situation and, as a direct result, land values improve accordingly.

As a fundamental investment proposition there are few mediums more attractive than a well-located and well-paying tenement house. The Lower East Side offers today, in many streets, a splendid opportunity for investors in tenement property. In some streets rents are as high or higher than ever before, such as, East Broadway, Canal, Division, Grand, Delancey and Rivington streets, and some thoroughfares running north and south. To my personal knowledge the East Side has recovered from two bad slumps, and though this depression has lasted much longer than heretofore, caused by the panic and finally by the European war, I still believe it will again be one of the most active locations in the city.

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OLD RETAIL DRY GOODS SECTION BECOMING WHOLESALE DISTRICT

By AARON RABINOWITZ, President of Spear & Co.

FROM a real estate point of view 1916 was an interesting year, principally on account of the transformation of the point of view of both the public and the owner. There has been created a new mental attitude toward the property in the district. Heretofore the owners were a depressed group of individuals, and the depression reflected low rentals. They valued but little their holdings and mortgagees promptly demanded large reductions on the mortgages. Today, the owner is expecting a rental that will comfortably carry his investment. This has been a splendid renting year and increases of from 15 per cent. to 40 per cent on old schedules were procured.

An interesting chain of circumstances has been simultaneously operating to cause these increases. First, the extraordinary high cost of building material has made impossible and unprofitable the erection to any extent of new structures. Second, the Zoning Laws in prohibiting buildings for manufacturing purposes above 23d street, from Fourth avenue to Seventh avenue, has helped much to confine the building area. Third, the "Save New York Committee," though an unofficial body, has been a powerful influence on the entire manufacturing district.

The owners' optimism is supported by the slow but sure rehabilitation of 23d street and of Sixth avenue. He witnesses building after building on 23d street rented to the most representative merchants in the city; hundreds of thousands of square feet rented on Sixth avenue to such large manufacturers as the Bijou Waist Company; the Deuparquet, Huot & Moneuse Company, manufacturers of French ranges; M. Neuberger & Company, furriers, and E. J. Wile & Company, cloaks and suits, renewing their lease at 21st street and Fifth avenue, at a substantial increase. He notes the erection, by Michael Coleman, of a twelve-story building in spite of the high cost of building materials, on the old Eden Musee plot and the success he meets in renting it from cellar to roof at 50 cents a square foot to largely a non-manufacturing type of tenant; also, the interesting group of tenants that have rented space in the Albemarle building. In this building, 100,000 square feet was rented to Marshall Field & Co.; 100,000 square feet to Emery Beers and several other concerns of similar importance. These are a few of many concrete instances where firms previously felt that they could not conduct their business anywhere else but in the upper thirties.

The "Save New York Committee" has been remarkably successful with the gigantic task it has undertaken to move the 220 manufacturers still above 32d street. It proposes not only to persuade these merchants to move out of the restricted zone, but goes a step further and is attempting in a very practical and constructive manner to supply new quarters by the erection of several buildings necessary to house the leaders of the several industries. It recognizes that these two hundred firms will require over 1,250,000 square feet and that they cannot be asked to go back to quarters that are less desirable than those they occupy at present further uptown; that they will not compromise the standards the Joint Board of Sanitary Control have set for them with regard to light and air, service and accommodations.

The time is past when manufacturers will rent buildings unsuitable for the purposes for which they were erected or are soon unsuited by the growing needs of the industry. The new buildings contemplated will therefore have incorporated in their construction all the modern appliances. The manufacturers themselves have definite ideas under which they can best produce their product and the legitimate demands of an industry that did $550,000,000 of business in 1916 should be consulted. One cannot escape from the basic fact that the manufacturers who are to desert their splendid establishments above 33d street on account of the appeal to their civic pride must be supplied with quarters of similar character.

AARON RABINOWITZ.

The representatives of the "Save New York Movement" are in active negotiations with large interests for the erection of a group of buildings for purposes as already stated. One of these buildings, it is planned, is to have the Manufacturers' Club and also offices to be used as a general meeting center for the many manufacturers' associations. It is hoped that all these ideas and plans will bear fruition. This is the opportunity for all those who are interested in the success of the plan to rehabilitate the mercantile property of New York to come forward and do what they can to help. The lending institutions have declared their readiness to bear much of the burden that will mean success.

The manufacturer finds himself in the unpleasant position of being obliged to move from one district and only a negligible quantity of suitable space to meet his requirements in the other. He has manifested a willingness to stand loss and inconvenience to centralize his business in a section that will not hinder or interfere with a sightly and orderly growth of the city.

Should these plans fail; should the men who are behind this movement be unable to provide new buildings to take care of the two hundred firms who have agreed to move below 32d street, a serious blow will be dealt to mercantile property. There is a plan advocated by the Degnon Contracting Company to move the entire cloak and suit industry to lands owned by them in Long Island City. They propose the erection of a "Garment City." They agree to construct modern, fireproof buildings, designed for the particular needs and pecu-

(Continued on page 152.)

CHELSEA DOCKS A BIG FACTOR IN UPBUILDING OF SECTION

By LOUIS SCHRAG

DATING from the early period of the Revolution to the year 1850, the Chelsea district was farm lands, with a few select country residences. Then, from 1850 to 1885, it changed to a high class residential section, where many of the most influential families of Manhattan resided. Later, from 1885 to 1910, it became the leading retail drygoods district of our city. Since 1910 it has undergone a severe change—the drygoods interests having moved further north. From the effects of this change it is now recovering, and developing into the most important manufacturing and wholesale district of the "Greater City." Many large loft buildings have been erected, and there is no doubt but that further development in business will take place within the next few years.

The restriction upon manufacturing above 34th street has had a splendid effect on the Chelsea section in general.

The Zoning Resolution will also tend to enhance the values in the Chelsea section. Most of the district is unrestricted, which will create a field for builders in the erection of manufacturing buildings. There are a few restricted blocks for residential purposes only, such as 23rd street, between Ninth and Tenth avenues, known as the London Terrace; 18th and 19th streets, between Eighth and Ninth avenues; 20th, 21st and 24th streets, between Eighth and Ninth avenues; 20th, 21st and 24th streets, between Ninth and Tenth avenues, and 28th, 29th and 30th streets, between Eighth and Ninth avenues. In the said restricted blocks there have already been erected a number of new apartment houses, which are well rented, and the building of others will follow.

The opening of the Seventh avenue subway and the Broadway subway, which should take place during 1917, will unquestionably be of great value and benefit to the entire Chelsea section. It will mean the recovery of real estate values, also the construction of large mercantile buildings along the line of Seventh avenue, similar in character to those now on Fourth avenue.

The situation of the Seventh avenue subway line is far superior to that of Fourth avenue. A general activity will be distributed in the entire district, creating a wide field for the development of real estate by speculators and investors who will grasp opportunities in the rising market. Also, in addition to the Seventh avenue subway, there is to be a crosstown subway through 14th street to Brooklyn, connecting with the Seventh avenue line. There is also the Hudson tube, the Sixth and Ninth avenue elevated with its express service, and the Pennsylvania railroad station.

Nine of the finest steel piers in the world are now located along the river front between 14th and 23rd streets, to accommodate the steamships belonging to the American, Red Star, White Star, Atlas, Trans-Atlantic, Campagnie Generale Transatlantique, Cunard, Anchor and Panama lines. The Chelsea piers will again stand out prominently when steamship service is resumed at the close of the war.

Also, there are the following ferries at the foot of West 23rd street: Hoboken, Delaware, Lackawanna & Western, Central Railroad of New Jersey, and the Erie Railroad.

There are three prominent organizations active in developing the conditions of the district: The Central Mercantile Association is doing much in bringing before the merchants and manufacturers the desirability and benefits derived by locating in the Chelsea district.

The Chelsea Neighborhood Association is working for the welfare of the people living in the district, and established recreation centres, making it wholesome and convenient for working people to live within walking distance of their business.

The West Side Taxpayers' Association is working for the interests of the real estate owners in that it endeavors to see that the taxpayers' money is expended to the best advantage, and that they receive the full service and proper attention from the public employees.

In view of all conditions one can look forward to a bright real estate future in the Chelsea district, which will be a centre for active real estate speculations and investments.

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HARLEM, NORTH OF 125th STREET, HAS GIVEN SIGNS OF NEW LIFE

By FRANK A. SHAW, of Shaw & Co.

DURING the past year that section of Harlem north of 125th street has given signs of some new life. While there has not been a great deal of activity in the district, there have been a number of sales of flat properties to investors who have taken advantage of the low prices at which such holdings have been offered. These investors apparently have been influenced because of the large returns obtainable due to the peculiar conditions that prevail, by reason of the large number of colored people that have moved into the district during the past five years.

The new colored population caused the removal of many white tenants and rentals were reduced in most apartments to attract new and retain the remaining old tenants. But the reduction of rents did not succeed wholly in its object. Vacancies continued to increase until a grave problem confronted owners, more particularly in the northerly section. This condition continued until some owners, unable or unwilling to pay interest and taxes without income, rented their properties to colored tenants who had, in the meantime, increased in such numbers that it had become a great problem with them to find buildings in which they could rent apartments.

The increased demand of these tenants soon forced rents back to the schedule that had obtained before they came into the section. Ever increasing demand and higher rents offered by such tenants became too strong a temptation for other owners who were struggling to hold their properties without sufficient income, and many also rented their properties to colored tenants.

Prior to this year, investors did not seem to realize the great opportunity offered to them, from an investment point of view, due to the general impression that such properties could not be made to pay and were difficult to manage.

With the lack of demand, prices were naturally depressed, although the income power was maintained and, in many instances, increased. With the market value reduced and the income power maintained, the net return upon such investments are exceptionally attractive. This has been brought to the attention of investors and will, without doubt, ultimately cause a firmer market for such properties.

In addition to the demand for investment properties, there has been more demand and more actual private sales of private dwellings during the past year than for some years. There are also fewer vacancies in such properties and rents are firmer and slightly higher.

The unimproved land in the district, particularly on and adjoining the Harlem River water front, is particularly desirable for industrial buildings. With this fact before it, the Harlem Board of Commerce has undertaken to make an industrial survey of this section. The survey will cover the district from 110th street to 155th street, with the Harlem River on the east and the chain of parks along Manhattan, St. Nicholas and Bradhurst avenues on the west and also takes in the Manhattan valley to the Hudson River. The work of this survey is now well under way and it is expected that a complete detailed report will be ready some time in the very near future. The information obtained is being placed on file for reference, so that those seeking information regarding the section may find it available. Since the survey was started a number of industrial concerns have made inquiry at the Board with an idea of locating in the section. With this character of utility, land throughout the section should improve in value; the increase of such buildings will bring an increased population, this will ultimately compel the construction of more apartment dwellings and thus cause still more activity.

FRANK A. SHAW.

The information collected through the industrial survey has shown that the future of the real estate situation throughout the section depends largely, if not wholly, upon its development as an industrial centre. It has also shown that the section has peculiar advantages for the establishment of industrial enterprises, some of which are: Its central location, not only because it is the centre of Manhattan Island, but also because of its nearness to the thickly populated section of the Bronx.

The great expanse of water front which affords exceptional facilities for shipping, more especially because of the improved facilities that will come with the completion of the Barge Canal. Most of the principal large railroads have freight terminals at convenient points. The many transit lines which pass through the section reach out to every part of Manhattan and the Bronx. Most every kind of skilled mechanics and workmen are to be found in the section. This is a most important asset to the development of an industrial centre.

With the revival of interest in investment properties and private dwellings, together with the prospect of industrial development which will absorb the vacant land, the outlook for the future of Harlem seems brighter today than it has been for some years past.

BRIGHT FUTURE FOR REAL ESTATE IN CENTRAL AND LOWER HARLEM

By ALFRED V. AMY, of A. V. Amy & Co.

THE section of Harlem south of 125th street during the past year has survived the uncertainties of fate in a remarkable degree and has become wiser by its experience. A realization of present conditions and an understanding of future possibilities will prove advantageous to its citizens from both a residence and business standpoint. For the wise ones who know how to discount the future, many especially good opportunities for investment have been offered.

ALFRED V. AMY.

The problem of the future depends largely on improving its housing conditions and increasing its earning power by adding to its economic value to the community. Harlem's prosperity rests almost entirely upon its increase in population and this increase can alone come from the rebuilding of certain localities on the apartment house basis, with accommodations for small number of rooms. Thousands of people today would prefer living in Harlem, but are unable to do so because there are not sufficient facilities for housing them.

In its private house section, Harlem, to-day, is feeling its worst troubles, in as much as there is little or no market for this class of property, and like the older private house sections in lower Manhattan, a change is bound to come and many of its better private house blocks will undoubtedly fall into the hands of builders who will seek to remodel or rebuild after the style of the present day demand. It is a fact that its present large population could be added to by fully fifty thousand within one year's time if there were apartments of the modern type of from three to five rooms available for occupancy.

This increased population would be of the better kind and would comprise the class of people that are needed by its storekeepers and for the proper uplift of the community. New theatres, churches and schools would naturally follow.

The negro section of Upper Harlem has not to any extent made inroads below its limited area of Lenox avenue and 135th street, so that real estate values in Central Harlem have suffered little or none in this respect.

The "Zoning Law," which has recently gone into effect, touching on the limitation within defined districts of certain lines of business, is one calculated to benefit real estate interests whose properties would otherwise have been adversely affected. The districts as covered under "Residence District" and "Business District" by this law, do not, to any extent, affect Central Harlem, as the majority of buildings now existing are of the class, definite and distinct, with the possible exception of certain parcels in the dwelling section now in use as warehouses, stables and garages.

The best judges of real estate predict that real estate will take on renewed life after the war is over. In the meantime a moderate activity can be depended upon, which will be gauged by the money market and the ease with which money can be obtained on bond and mortgage.

Harlem Transit Facilities.

The new transit lines which will be added to the already large number of transportation systems now in operation in Harlem will make that district one of the most accessible in the city. Washington Heights residents may reach it by the Broadway Subway and the Amsterdam avenue cars. The New York Central & Hudson River Railroad, and the New York, New Haven & Hartford stop their local and express trains at the 125th street station. Surface cars on practically all of the north and south bound thoroughfares place it within easy access not only to lower Manhattan and the West Side, but the recent operation of the Willis avenue car lines have provided additional connections with the Bronx via the Willis avenue bridge. The other transit lines include the Third and Sixth avenue elevated and both the Broadway and West Farms Subway divisions.

LARGE CONCERNS BEING DRAWN TO CENTRAL MERCANTILE DISTRICT

By CLARKSON COWL

CENTRAL Mercantile District real estate is beginning to realize in development the bright prospects which have long been predicted for the section by those more familiar with the situation on the Middle West Side. During 1915 and even more so in 1916 building investments in the central mercantile area have been increasing to a marked degree. It is, for example, the only district offering seven rapid transit lines with six express stops, a crosstown subway to Brooklyn and East New York, a tunnel to New Jersey. Naturally business men with their eyes turned toward the future choose the central mercantile section for their factories, salesrooms and warehouses. And naturally in response to their demand the property in the section must be improved to meet the modern needs.

Another stimulant has been the proposed plan for the West Side terminal system, laid out by the New York Central Railroad in conjunction with the city. Property has been sold at excellent figures and in large parcels to the railroad already, looking toward this important improvement. It is unnecessary to detail the obvious advantages to commerce and industry which will result from the new terminal facilities.

Three main lines of realty growth have been prominent in the central mercantile district during the past year: First, the building of lofts; secondly, the building of apartments; thirdly, the centering of important wholesale firms in the section, particularly in the vicinity of West 23d street.

The need of new lofts in the district was met by the erection of such buildings as the Morimura building on 23d street, east of Sixth avenue, and by plans for towering structures such as have been undertaken by the Bradish Johnson estate along Broadway near 21st street.

The remodeling of the old Washington Mews by the Sailors' Snug Harbor Corporation will result in a real artists' colony for Washington Square. The 300-foot apartment operation by William Lustgarten on West 16th street, between Sixth and Seventh avenues, the renovation of West 24th street, near Ninth avenue, for studios, the building of many new apartments in the vicinity of 19th, 22d, 23d, 24th streets and in every corner of Greenwich Village all indicate a strong tendency toward a realization of the value of living nearer the center of Manhattan's business world.

Thousands of men who work in this great city and travel home wearily at night to outlying districts, are beginning to awaken to the fact that much needed time and strength is being wasted by them daily through this tedious journeying. They are seeking in ever-increasing numbers homes in Manhattan, homes within easy distance of where they are employed.

The third feature of the year in the Central Mercantile District, the influx of wholesalers and manufacturers into the section, particularly in the neighborhood of West 23d street, has been noteworthy. No less than six square city blocks of space (200 x 400 feet) were rented in one month recently to firms moving into the central mercantile area.

Concerns such as Marshall Field & Co., William R. Warner & Co. (purchasers of the old Altman property at $1,100,000), the Bijou Waist Co., Duparquet, Huot & Moneuse Co., Emery-Beers & Co. and the New York Merchandise Co. have been rapidly moving into the Central Mercantile District within recent months. The trend of business uptown has meant that more and more merchants and manufacturers are becoming aware of the conveniences of the central mercantile area and of the savings in time and expense incidental to these conveniences.

One concern which has shown particular faith in the district is the National Cloak and Suit Company. It has been increasing its holdings adjacent to its big plant on Seventh avenue, first by the purchase of 219 to 223 West 24th street and then by the acquisition of 226 to 234 West 25th street. Daggett & Ramsdell, the large wholesale chemists, have bought 214-16 West 14th street, where they will erect an office building for their use at a cost of $100,000.

The Central Mercantile District includes the Chelsea and Greenwich neighborhoods, fine residential sections near the business center of the city. Close by are highly developed manufacturing, transportation and mercantile groups which naturally make the district most desirable and the logical heart of an extensive real estate development. Yet the district is only now beginning to achieve its reasonable growth.

The population is found to be the lowest in density in Manhattan. With manufacturing employees alone totaling 125,000, there are only 180,000 people living in the area, showing that a large percentage of those who work in the district must live outside.

This condition spells inconvenience and waste for the workers in the Central Mercantile District and low efficiency for the plants in the section. Employer and employee alike profit by the elimination of unnecessary carfares and of weary hours of travel before and after the day's work. The heights of buildings in the district are much lower than in other parts of the city. As apartments, which are in increasingly great demand, replace low, old-fashioned structures and private houses, no longer a logical development for a teeming metropolis, the workers of the Central Mercantile District's 5,675 plants will naturally drift in larger and larger numbers into the new homes offered by Greenwich and Chelsea. During the coming year more builders will be seen erecting apartments in these areas where such structures have begun to rise in unprecedented numbers in 1915 and 1916.

MADISON SQUARE AS IT APPEARS TODAY.

The industrial survey of the Central Mercantile Association has shown that Chelsea and Greenwich, the home-areas of the Central Mercantile District, offer as low costs of living as any other parts of the greater city. These neighborhoods are daily profiting by the systematic activities of numerous civic and social organizations which are constantly bringing to the attention of the city departments projects for making Greenwich and Chelsea even more convenient and comfortable for those who live there.

In the hit-or-miss real estate development of New York City the Central Mercantile District had for a long time been overlooked. Eyes were turned to suburban booms and to the east side with its subway on Fourth avenue. These developments have reached their height several years ago. The new Seventh avenue and Broadway subways and the line to connect Brooklyn and East New York with the Central Mercantile District through 14th street are now attracting attention.

For the hit-or-miss development of New York is a thing of the past, thanks to the excellent zoning plan which has become a law. The Central Mercantile District will now profit, as it should have long ago, by well-considered improvements—improvements built upon a rock foundation of compelling commonsense.

For where else is there a district such as the central mercantile area—a district occupying one-thirteenth of Manhattan yet possessing nearly one-half of its factories; which lies within one mile of the business center and highest property values of the city and also within a mile of the hotel and transient population centers; which is the most easily reached district of the city, when all parts are considered; which is the most convenient to railroad terminals, ferries, bridges and all new rapid transit facilities.

Central Mercantile District.

THE Central Mercantile District is at the geographic, population and business center of New York. On its boundaries lie the city's hotel and financial centers.

Eighty per cent. of the people entering New York reach lower Manhattan through or near the Central Mercantile District.

The district offers the shortest average delivery distances to the New York Metropolitan area.

It is the most highly developed manufacturing center of New York. Two-thirds of New York factory employees work in Manhattan, and the Central Mercantile area, occupying 1-13 of Manhattan, has 30 per cent. of Manhattan's manufacturers.

Every railroad line but one, reaching New York City, has a freight terminal in the Central Mercantile area. The only railway system offering direct plant sidings and car deliveries in Manhattan runs through the Central Mercantile District.

New York's greatest dock developments and most concentrated water terminal traffic are on the frontage of the Central Mercantile District.

All New York subways in operation and all those building will run trains either through or near the margins of the district.

The district offers unparalleled advantages as a location for light manufacturing and wholesale concerns, for showrooms, and in low transportation and delivery costs.

It is the most accessible location for employees—within easy reach for the general trade and for general business transaction.

RESIDENTIAL IMPROVEMENTS ON PARK AVENUE ASSURE FUTURE

By FRANCIS S. BANCROFT, Secretary of Pease & Elliman

ONE of the most remarkable sectional developments in the city in the past fifteen years has been that of Park avenue, north of 42nd street. For many years prior to the accident on the New York Central Rairoad in the tunnel under Park avenue, the development of this wide highway was retarded by the smoke and noise issuing from the steam cars running out from the station. After this accident, when the railroad company announced its intention of using electric power for taking its trains out of the city, there was an immense improvement in the market for real estate along this avenue. The avenue north of 59th street was the first section to feel the improvement, and very soon a majority of available corners were improved with apartment houses and private dwellings of the nnest types.

FRANCIS S. BANCROFT.

South of 59th Street.

The section south of 59th street was slower in its development, but it immediately responded when W. H. Newman, of the New York Central Railroad Company, announced his far-sighted policy of parking the avenue, and of covering the tracks on each side south of 50th street, immediately opening this property above the tracks for buildings of the highest class. Many of these sites were taken over immediately by prominent builders and today some of the finest apartment houses in the city are situated above the tracks, between 50th and 55th streets.

One of the first men to take advantage of the changed condition was I. N. Phelps Stokes, who was far-sighted enough ten years ago to see the great possibilities, and from time to time purchased a dozen or more of the most desirable corners. Most of the properties have since sold at a large profit. Elihu Root was another of the early ones to realize the possibilities of Park avenue for private residences, and purchased the corner of 71st street and built a magnificent house for his own occupancy. Upon his being called to Washington, he readily disposed of this house, and it is today owned and occupied by Carle Tucker.

Several sections of Park avenue have been reserved exclusively for residences. This is particularly true of Lenox Hill, which has many of the finest houses in the city. Among them is the residence of Percy P. Pyne, at the northeast corner of 68th street.

Noteworthy Improvements.

The old Theological Seminary property, from 69th to 70th streets, has been entirely improved with the erection of fine private houses. At the corner of 69th street, A. Curtiss James built a residence on a plot of 100x125 feet and at the southwest corner of 70th street George Blumenthal built another on a similar plot. The adjoining 50 feet on 70th street has been improved with a handsome residence by Stephen C. Clark, and two 25-foot houses were built by C. D. Jackson and J. Harper Poor in 69th street, adjoining Mr. James's new residence.

At the northeast corner of 69th street Geraldyn Redmond and his sister, Countess Villiars Laungier, have erected fine residences which they occupy. At the southeast corner of 70th street, Robert S. Brewster has a residence, and his brother, George S. Brewster, resides at the northwest corner of 71st street. At the northeast corner of 70th street, Oakleigh Thorne built a fine house which has recently been sold to Mrs. F. Gray Griswold, and adjoining to the north is the residence of James Brown, of Brown Brothers and Company. At the southeast corner of 74th street, George Fahys has taken a residence.

One of the best plots on Park avenue is that at the northwest corner of 79th street, upon which John S. Hoyt is now building his new residence. Going further north we come to 85th street. The four corners at this point were at one time owned by Amos R. E. Pinchot. Mr. Pinchot built his new residence at the northeast corner and sold the southeast corner to Lewis S. Morris, who has improved it with a dwelling for his own occupancy. The southwest corner he disposed of to the Old Dutch Church, which moved from Murray Hill. While Mr. Pinchot does not at the present own the northwest corner, he does own the adjoining property, which he has restricted for private dwellings. On the property adjoining Mr. Pinchot's house, Reginald de Koven has built a handsome dwelling. Mrs. Adrian Iselin bought the two houses at the corner of 91st street and Park avenue and altered them into one house for her own occupancy. At the northwest corner of 93d street Frank Palmer is now building a new dwelling.

Park Avenue Residences.

George Ehret was the pioneer of the Park avenue residences, having built a large house and surrounding park on the block front from 93d to 94th streets. At 96th street the trains of the New York Central come out of the tunnel and the character of the property is different.

Among other prominent New Yorkers who have built or live in residences on Park avenue are the following: Dr. Fred T. Van Buren, Jr., Herbert G. Thompson, J. Frederick Kernochan, Judge J. F. Mulqueen, Judge Morgan O'Brien, Henry De Coppet, Frederick A. Dwight, Ashbel P. Fitch, Mrs. K. Muhlenberg Bailey, Ramsay Hoguet, T. Douglas Robinson, Dr. Nathaniel B. Potter, Alexander D. B. Pratt, Herbert Strauss, Cornelius N. Bliss, Jr., Lincoln Cromwell, Robert J. Collier and B. S. Prentice.

High Class Apartments.

The first of the high class apartments to be built on Park avenue was the one at the northwest corner of 61st street, which was finished in the year of 1909 and was readily tenanted. The success of this building prompted the professional builders to come into this section and the following list shows how rapidly they have built up the desirable corners:

375 Park avenue, Montana Realty Company, 1913; 320-330 Park avenue, Harry Fischel, 1916; 340-350 Park avenue, Potter & Mordecai, 1916; 383 Park avenue, Montana Realty Company (E. C. Potter), 1912; 399 Park avenue, S. A. Herzog, 1915; 400 Park avenue, Fullerton Weaver Company, 1911; 405 Park avenue, Robert Goelet, 1911; 410 Park avenue, Robert Goelet, 1911; 417 Park avenue, Bing & Bing, 1917; 420 Park avenue, Fullerton Weaver Company, 1916; 449 Park avenue, Tinker Estate, 1910; 470 Park avenue, S. A. Herzog, 1916; 471 Park avenue, Densmore, Compton Company, 1911; 515 Park avenue, J. J. Hearn, 1911; 520 Park avenue, William A. Boring, 1912; 521 Park avenue, Edward Corning, 1912; 525 Park avenue, Edgar A. Levy, 1915; 535 Park avenue, H. Lucas, 1910; 540 Park avenue, William A. Boring, 1909; 550 Park avenue, J. E. R. Carpenter, 1917; 555 Park avenue, Edgar A. Levy, 1913; 563 Park avenue, William J. Taylor, 1910; 565 Park avenue, Bing & Bing, 1912; 570 Park avenue, Bing & Bing, 1916; 630 Park avenue, J. E. R. Carpenter, 1917; 635 Park avenue, Fullerton Weaver Company, 1913; 640 Park avenue, Fullerton Weaver Company, 1913; 755 Park avenue, Edgar A. Levy, 1915; 815 Park avenue, S. A. Borchardt, 1917; 823 Park avenue, William J. Taylor Company, 1911; 829 Park avenue, William J. Taylor Company, 1910; 830 Park avenue, Frederick Johnson, 1912; 840 Park avenue, Frederick Johnson, 1913; 850 Park avenue, George J. Johnson, 1913; 863 Park avenue, William J. Taylor Company, 1913; 875 Park avenue, Charles B. Mayer, 1914; 876 Park avenue, Edgar A. Levy, 1917; 903 Park avenue, Bing & Bing, 1913; 925 Park avenue, William J. Taylor, 1909; 930 Park avenue, Edgar A. Levy, 1916; 955 Park avenue, Bing & Bing, 1917; 960 Park avenue, J. E. R. Carpenter, 1912; 969 Park avenue, W. J. Taylor Company, 1912; 970 Park avenue, Bing & Bing, 1912; 933 Park avenue, Bing & Bing, 1915; 1,000 Park avenue, Bing & Bing, 1916; 1,155 Park avenue, Bing & Bing, 1915, and 929 Park avenue, Charles Mayer, 1913.

Renting Situation.

All the apartments in these buildings were rapidly rented; in most cases the buildings being entirely leased before completion, and today there is not a vacant apartment in any of the high class buildings between 50th and 92nd streets.

The stability of the rental values is shown by the fact that in most cases the apartments are rented today at a higher price than the original schedule. A potent factor in the apartment building on Park avenue has been the ease and rapidity with which the professional builders were able to dispose of their products to investors. Among the prominent men who have invested their money in realty on this thoroughfare are Robert C. Tinker, Albert Freeman, William Ziegler, Jr., Clarence Payne, Morgan Howe, Minturn Estate, Miss Charlotte S. Baker, Jenjamin Stern, A. B. Jekyll, Bernhard Mayer, D. Willis James Estate and Dr. James Bishop.

William Ziegler, Jr., has purchased four of the largest apartment houses on the avenue. There are today a number of apartments in the course of erection on the thoroughfare to be ready for occupancy next autumn, and some of these are already 90 per cent rented.

ON THE WEST SIDE.

(Continued from Page 55.)

Excellent conditions also prevail with reference to store rentals which have steadily maintained their firmness. There has been neither an increase nor a decrease in the incomes derived from owners through this source, and the situation remains fundamentally sound and substantial.

We anticipate a revival of selling activity in this area within a very short time as a direct result of the strong renting market. It is only a question of time when real estate will receive the benefit of the general prosperity now being experienced in practically every line of business endeavor throughout the country. It is reasonable to assume that investment interest will be manifested in improved real estate when it becomes more generally known that these properties are being properly managed and operated and are returning a proper income upon the capital invested.

EIGHTY-SIXTH STREET DESTINED TO BE MANHATTAN'S SOCIAL CENTER

By ALEXANDER D. DUFF, of Duff & Conger

UNLESS all indications fail 86th street, from Fifth to Second avenues, is destined to become one of the important arteries in the East Side of upper Manhattan. This street is restricted, under the new Zoning Resolution, to residential purposes only as far east as Lexington avenue and will, unquestionably, be built with apartment houses or hotels of the better class. Eastward from Lexington avenue, business is permitted and it is occupied now in that manner, embracing several theatres and clubs with positive indications that shortly several of the important retail business houses of the city will occupy space for branch establishments.

One of the reasons why this street is destined to be a leader in importance on the East Side is that it is a logical center. The only express station of the Lexington avenue subway, between 42d street and Harlem is to be at 86th street. This is an important factor in the growth of any neighborhood, and especially so with this one, because it has never had any rapid transit. The convenience of being able to use the express service directly to your own destination, over that of having either to take a local train or change from an express to a local, has an important influence on the business man seeking a location for a home. The character of the residences and apartment houses in this zone, while not yet numerous, are as modern and important as those further downtown and command the same desirable class of tenants.

Situated in about the center of the longitudinal area of Central Park, and at the widest point of Manhattan Island, 86th street holds a unique position. The buildings, west of Third avenue, are, with the exception of those recently erected, old and of little value. Builders will have but little difficulty in acquiring sites suitable for improvement, and the real building movement will start next year when the Lexington avenue subway is opened. The neighborhood will then change its character and fireproof buildings will be erected. Land values will not logically admit of any other form of construction.

With this development on the East Side of the park and the enormous population that is and will be in the corresponding zone on the West Side of the park, the imperativeness of some convenient form of inter-communication will have to be adopted. I firmly believe that we will soon have a beautiful boulevard street built through Central Park at 86th street, which will accommodate the street cars, automobiles and general traffic. It will provide a short cut for pedestrians and can be built inexpensively without disturbing the park, except for the taking off of a small slice from the south end of the reservoir.

There were more than 15,000,000 people carried on the 86th street crosstown line last year. This line extends only as far west as Central Park West. What will be the number carried when the line is extended to Riverside Drive and has the influx of passengers from the Columbus, Amsterdam avenue and Broadway lines? What influence must this traffic have, from a commercial point of view, on all the transfer points touched on the East Side and along that section on 86th street given over to business? The results will be astounding. For remember the business development will continue strong from Lexington avenue over as far as the express station of the Second avenue elevated road, which has just been built at the conjunction of that avenue and 86th street. It will also receive considerable benefit from the increasing number of people crossing the 92nd street ferry who invariably take the 86th street crosstown line, having its easterly terminus there. This traffic is increasing fast as that portion of Queens adjacent to the ferry on the Long Island side is building rapidly.

LOOKING EAST IN 86TH STREET FROM FIFTH AVENUE.

Now I would like to call attention to the likelihood of this section eventually becoming the social center of New York City. We know that that center on January 1, 1916, was at Fifth avenue and 67th street, and that it has been rapidly striding northward. Some think it is not going much farther up town, but I believe it is for the following reasons:

The new Zoning Resolution permits business as far north as 51st street and from 56th to 58th streets, between Fifth and Sixth avenues, so that shortly all the people in that area will have to live elsewhere. There is only a small section of Murray Hill left residential. Business is invading all the streets on the East Side as far north as 60th street, between Fifth and Madison avenues. There is but little territory left except on Park avenue and to the east, in the section north of the Grand Central terminal, and outside of the Park avenue frontage, one can hardly expect much development, as people prefer living as near Fifth avenue as possible.

Therefore, the question arises where will the homes of the wealthy classes be located? As they apparently give preference to the East Side of the city, and the area in which they will live is limited to between Fifth and Third avenues, they must of necessity go north. Most people believe, as there are four avenues west of Third avenue on the east side, this section must of necessity include a large building area. In this, they make a great mistake, as the blocks between the avenues are very short, only slightly more than 400 feet in length. As the building units are increasing, in most instances there probably will be only one apartment house on each of the corners and one in the side street, therefore in a short time, this desirable section as far as 96th street will be all built up and the accommodation for families will not be equal to the demand. This will very soon compel the building of fine houses north of 96th street and extending the territory so far north that 86th street will be not far removed from the social center of the city.

Another pleasing feature, and one that will add to its attractiveness, is that this entire section will be built with new buildings which will preclude any unsightly fire escapes on the front of structures such as we find in so many other parts of the city, where old semi-fireproof apartment houses remain and which are too valuable to be demolished. There will be a greater uniformity in height and no freak construction, as the new Zoning law has taken care of that. Pre-eminently this is the one section of New York where $25,000 apartments are rentable, and this one fact tells its own story.

Property owners in the eighties and nineties have seen their tax rolls increasing and their incomes diminishing and many of their best tenants lured away by the conveniences of the West Side subway. They feel that they have been badly treated.

Sections of the city grow as transit facilities increase and the 86th street zone will, I believe, grow more rapidly during the next five years, in a residential way, than any other section in the city. Between Lenox Hill and Carnegie Hill will be the show place of New York homes, not marred by any unsightly buildings, but one charming protected section, away from the poise and traffic of the busy city, yet convenient through the subway and quite within walking distance of the best clubs, hotels, theatres and shops.

High Rents in Old Buildings.

In many cities there are numerous storerooms and downtown buildings untenanted. Why? Because the rents asked for them are more than anyone is willing to pay. It may be asked, "Why won't they pay them?" Because while the locations are good the quality of the buildings is bad. The owners of the properties expect tenants to pay on ground values rather than on building values, but with tenants the suitability of buildings is just as important as the locations of them.

Does an old and poorly arranged building even on the best retail street appeal to a merchant who wants a building suited to present-day mercantile requirements? Why should he be asked to pay a fancy rent for a ramshackle building on a valuable lot?

Every valuable property should have a good building on it, and when it has not the property owner should not aim to secure a rent that will give a return commensurate with the value of the ground and building. But that is what every owner of business property tries to get, and it isn't fair to the tenant. The small merchant, even when housed to best advantage in a business way, has a hard time competing successfully with the big and modern department store.

Many a small merchant who rents a business place is given no encouragement by his landlord. The latter is too timid or tight-fisted to provide an up-to-date building, so he complains that his property will not rent, or if rented, that it is not paying. That is his fault. If he cannot afford to put his property in a condition that will make it pay he ought to sell the property to someone more enterprising.

At best a repaired and repainted old building is not satisfactory to the progressive merchant.

FOURTH AND LEXINGTON AVENUES AND THEIR FUTURE POSSIBILITIES

By WRIGHT BARCLAY

FOURTH avenue, now the greatest wholesale commercial thoroughfare on Manhattan Island, has attained this distinction in a little more than ten years. The avenue laid dormant for a great many years and it was not until 1904 when the Fourth avenue subway opened that the avenue began to receive recognition and believed by a few to have a possible future. But in 1907 a boom seemed to strike the avenue all at once, values rapidly increased, all the old properties that for so many years stood in the same name, were sold principally to operators and then to builders who erected modern twelve and sixteen-story store and loft buildings, which, as I have said before, has made Fourth avenue the greatest commercial thoroughfare on Manhattan Island.

This great building movement was made possible, by the large loaning institutions who, also recognizing the value of property on Fourth avenue, and believing in its future, made liberal building and permanent loans to responsible builders; of course, this resulted in many new buildings being finished at about the same time and, although many of these buildings rented quickly, still there was more space on the market for rent than could be absorbed upon the completion of the buildings. Therefore, the large loaning institutions decided not to make any more loans to builders for Fourth avenue projects, until such time as the demand should catch up with the supply. This has now been accomplished. Many

WRIGHT BARCLAY.

of the buildings are 100 per cent. rented and others have but few vacancies.

The property that still remains unimproved on Fourth avenue, I recommend as a good purchase to anyone, for as soon as the European war is ended this property will be in great demand. There is now need for more new buildings on Fourth avenue, but building is held up on account of the high cost of building material, the scarcity and high price of labor and furthermore the loaning institutions will not make building loans until the building conditions again become normal.

The recent zoning of the city should have a beneficial effect on real estate in Fourth avenue, for should manufacturing have established itself in the modern buildings along this avenue, the value of the properties would have been materially decreased, for the renting rate in the manufacturing buildings is only about 50 to 60 cents per square foot, while in the non-manufacturing buildings the rentals range from 70 cents to $1 per square foot.

I should also like to say a few words regarding the present state of real estate on Lexington avenue, south of 42d street.

This avenue received a great shock when it was finally decided that the new subway was not to go further down Lexington avenue than 42d street. The property owners had long been looking forward to the line of transportation which would have greatly helped develop lower Lexington avenue. Now that this subway line has been abandoned, there is still another means to develop lower Lexington avenue and this is, not to shut it off at Gramercy Park. Extend Lexington avenue, through the center of Gramercy Park, and cut a street from the south side of 14th street (opposite Irving place) and join Fourth avenue at about 12th street. At this point uptown traffic could be diverted either up Fourth avenue or up Irving place into Lexington avenue, and southbound traffic could be diverted either down Fourth avenue into the Bowery or down Fourth avenue into Lafayette street. The surface cars now running on Lexington avenue could be continued south through Gramercy Park, Irving place, Fourth avenue and then down the Bowery or run southwest through Astor place and then down Broadway.

This cut through Gramercy Park would in no way injure that section as two small parks could still be maintained on each side of the street opening. The expense to make Lexington avenue continuous as herein described would be comparatively small, and would not only greatly increase the real estate values on Lexington avenue, but would also do much to relieve the present traffic congestion.

BUILDING RECORDS OF THE BOROUGHS.

1907.		
Manhattan	931	$73,028,350
Bronx	1,923	20,070,544
Brooklyn	8,079	61,864,763
Queens	3,929	15,944,259
Richmond	840	3,055,490
1908.		
Manhattan	607	$79,209,826
Bronx	1,797	20,015,555
Brooklyn	6,138	36,206,272
Queens	3,895	13,842,000
Richmond	763	2,644,221
1909.		
Manhattan	940	$122,139,062
Bronx	2,241	37,776,210
Brooklyn	9,844	54,572,042
Queens	4,758	19,407,921
Richmond	730	2,367,276
1910.		
Manhattan	781	$92,925,369
Bronx	2,026	44,034,405
Brooklyn	5,613	33,402,172
Queens	4,133	15,144,377
Richmond	841	2,975,190
1911.		
Manhattan	840	$98,537,275
Bronx	1,557	22,837,060
Brooklyn	5,288	32,595,240
Queens	5,374	22,212,255
Richmond	910	2,281,070
1912.		
Manhattan	757	$116,325,135
Bronx	1,310	34,644,400
Brooklyn	5,105	36,472,377
Queens	4,821	19,642,222
Richmond	1,008	3,153,255
1913.		
Manhattan	553	$70,074,585
Bronx	823	20,057,689
Brooklyn	3,712	31,556,611
Queens	4,602	17,293,810
Richmond	956	2,987,914
1914.		
Manhattan	396	$44,615,165
Bronx	708	16,259,782
Brooklyn	4,333	37,456,031
Queens	4,388	18,703,891
Richmond	1,067	1,839,761
1915.		
Manhattan	489	$64,652,869
Bronx	942	27,922,200
Brooklyn	5,352	43,513,540
Queens	5,608	20,015,145
Richmond	1,197	2,318,047
1916.		
Manhattan	564	$114,690,145
Bronx	650	16,725,582
Brooklyn	4,946	35,397,480
Queens	5,331	20,009,382
Richmond	1,378	4,248,134

The foregoing tabulations are the totals of the plan filings as printed in the Record and Guide each week, in which no account is taken of plans subsequently withdrawn or estimates revised.

FAMOUS GRAMERCY PARK SECTION STILL RETAINS INDIVIDUALITY

By HERBERT LUCAS

"And when the evening mist clothes the riverside with poetry, as with a veil, and the poor buildings lose themselves in the dim sky, and the tall chimneys become campanili, and the warehouses are palaces in the night, and the whole city hangs in the heavens, and fairy land is before us—"

THAT was written of London. But have we not all thought much the same of different aspects of this wonderful city—and regretted that we could not express it.

Such at any rate has many times been my thought, when looking out over Gramercy Park, with the great buildings twinkling with thousands of lights before me, the beautiful Metropolitan tower in the middle ground and even the Edison Company chimneys, mysterious and picturesque in the distance.

To many, knowing of the park by repute only, it might seem that its glory departed when the town's extreme wealth and fashion moved farther uptown—but this is far from being the case.

The charm is still there—also many of the old residents—indeed there are many who have lived in the same house for over fifty years—people who were friends and neighbors of Samuel J. Tilden, John Bigelow, Cyrus W. Field and his brother, David Dudley Field, Abram S. Hewitt—the names could be continued indefinitely of the prominent men who have lived there from time to time.

To my mind it is a most practical answer to much of the criticism that has arisen over the new Zoning Laws recently put in force, as here is a community that has kept its own individuality for over three generations—owing solely to the imagination and far-sightedness of Mr. Ruggles, its founder, and it is now like an "oasis" in this big town.

It was thought by some that the advent of the apartment house would change it—and while it has changed the sky-line and brought more people there, it remains otherwise very much the same—and very much the same kind of people live there.

I believe the land values are about the same as they have been for years, and not being effected by the possibilities of business upsetting them, it seemed an ideal place to work out the principles of the community apartment dwelling, or if you prefer, the co-operative apartment, though the latter name has suffered somewhat under the exploitation of the speculative builder.

The idea has, however, been successfully worked out in at least three of the buildings on the park, showing that careful financing and management can make this plan successful.

As an instance, take one owner of whom I knew. The location, arrangement and decoration just as he wants them, a voice in the management of the building with broad-minded and congenial associates, his apartment costs him about one-third of its real rental value, after all assessments are paid and after allowing for 5 per cent. interest on his invested capital.

Does not this go far toward solving the problem of living here for many people?

It seems to me that it does show that for a moderate investment—much less than would be necessary to own one's own house—it is possible to live approximately where one would like to live, and be surrounded by one's own kind.

In many instances old houses have been changed into small apartments, and very successfully too, as the designer has kept them in harmony with the surroundings so they could easily be mistaken for private houses. These apartments are usually of from two to three rooms and are very attractive and much sought after.

FLUCTUATIONS OF REALTY VALUES AS RESULT OF MANY CONDITIONS

By H. NELSON FLANAGAN

IN endeavoring to give even a brief review of the conditions existing today in property on the East Side of the city, between Canal and 14th streets, Third avenue or the Bowery and the East River, it is necessary to go back a few years, to 1907, in order to account for the great changes that have taken place in this section since that date.

Up to that time, real estate on the lower East Side was in an unusually flourishing condition, so much so, that it was difficult to buy property, the owners refusing to sell, having every reason to expect a continuance of the rising prices. Then suddenly, and without warning, the slump came, and the panic of 1907 precipitated itself upon the country. Prices tumbled, and exactly as fast as realty values decreased, the troubles of the property owners increased.

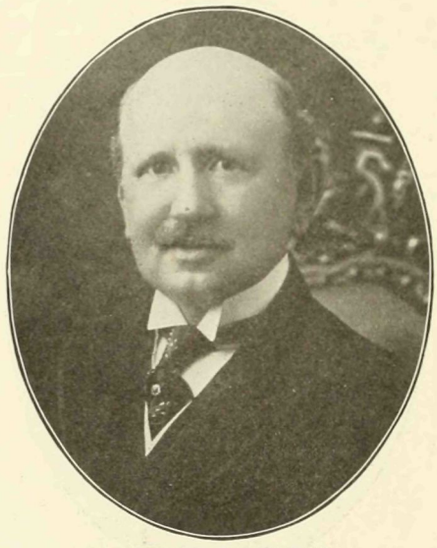
In the first place, this section is composed largely of tenements, chiefly of the old style, and of small factory buildings. Many of the manufacturers, who now occupy large lofts on Broadway, started in this section in a very small way. As their business grew, they moved to larger quarters, further west, their original lofts being, in turn, occupied by small concerns, newly started. However, after the panic started, many of these smaller manufacturers, instead of finding it necessary to move into larger quarters, were forced either to move into smaller places or to suspend business entirely; and there were no others with sufficient courage to take their places.

Many families, who had formerly occupied apartments alone, were compelled to give them up and crowd in with parents or with other relatives, or friends, in order to reduce their expenses, thus leaving vacant many rooms, desirable, and hitherto always occupied. Then, too, the cheap rents and newer buildings, with better improvements, to be found in the Bronx and in the outskirts of Brooklyn, drew numerous families to those sections, even though, by so doing, the people were taking themselves much further away from their respective places of employment. Very soon vacancies began to be plentiful and, in some houses containing twenty apartments, it was not unusual to find eight or ten vacancies at one time. This, too, affected the business of the stores in the neighborhood and caused many shopkeepers to vacate, in consequence of which there were a great number of stores to rent.

After the war started, conditions became still worse. The immigrants, who formerly came in by the tens of thousands, not only practically stopped coming but also a great number of the men already in this country went back to join their colors, thus still further depopulating the already half empty tenements. The tenants who remained, perhaps not unnaturally, became exacting, and, if the owners did not immediately comply with their demands, no matter how unreasonable, the tenants were liable to move out at once.

The many new laws affecting real estate have fallen heavily on the owners of property in this vicinity, and it has also received its full share of attention from the various city departments. What with orders from the Tenement House Department, the Building Department, the Health Department, the Factory Department, the Bureau of Highways, the Fire Department, the Fire Prevention Bureau and the many vacancies caused by long-continued strikes, as well as the hard times and the consequent lack of employment, the income from property was greatly curtailed.

Like everything else, the cost of the up-keep of property to-day is also much greater than it was some years ago. Values, too, have fallen off from ten to fifteen per cent., and often more.



H. NELSON FLANAGAN.

Prior to 1902, when the Tenement House Department began to enforce its orders, the tenements in this section were practically without improvement, save for sinks in the kitchens and school-sinks in the yards; but to-day such houses are hard to find, and are increasingly difficult to rent. Certain fads have crept in among the tenants, as, for instance, the demand that has arisen for white sinks. No matter what other inducements were offered, the first question asked by a prospective tenant was almost invariably, "Are there white sinks?" and, if the owners had not already taken out the serviceable black iron sinks and installed the white enamelled ones in their places, the tenant turned away and refused even to look at the apartment. Tenants in houses which contained no white sinks often vacated them, frequently three or four families moving out at the same time. This is only one of the many requirements which have been insisted upon and which formerly were never even thought of.

One of the worst evils with which property owners have had to contend, and which has been more apparent in this section than others, is the "personal injury case," which is a suit started against the landlord by his tenants or their visitors, in which they claim that they have been injured by falling either on the stairs, in the halls or upon the sidewalks of said properties. There may be an occasional case where a really just suit of this kind may be started against the owner, but in the vast majority of instances nothing but the grossest carelessness on the part of the claimant could possibly have occasioned the alleged injuries; while in all too many cases it is nothing but blackmail pure and simple,—a dishonest attempt to extort money from the property owners.

The tenants making such claims know perfectly that the insurance companies, as well as the owners, are many times willing to settle out of court for fifty or seventy-five dollars, or even more, rather than risk the decision of a too-sympathetic jury, and to escape the extreme annoyance of litigation. The inevitable result of this procedure has been to multiply these cases alarmingly, so that the rate of insurance asked by the liability companies has risen during the last few years from ten dollars to fifty dollars a house, while in some neighborhoods in this section it has been difficult to obtain insurance, even at a much higher rate. It is most significant to note that these cases were much more numerous during the hard times than they are at present.

It is, however, a long road that has no turning. Every section comes back to its own again in time; and, with the coming of prosperity, and the supply of employment for all, this section is picking up very rapidly. There have been few new buildings put up, but, where owners have realized that tenants will not get along without improvements, as they did years ago, and have been wise enough to improve the old buildings by putting in hot water supply, the much-desired white sinks, kitchen ranges, and in some cases steam heat as well (improvements that are considered absolute necessities to-day, but which were never even thought of some years back), the houses have been speedily filled without difficulty and at increased rents. Therefore, with proper management, in two or three years, at most, the additional moneys put into these properties will be repaid with interest.

Like a child that has had all the prevailing children's diseases and recovered from them, this section has had everything done to it that can be done, and has, therefore, nothing more to fear. Like the child, its time of unhealthfulness is behind it, while ahead of it appears a period of rapid convalescence, a building up and a re-adjustment, which shall restore it once more to a normal state of health and prosperity, when the timid investor shall no longer hesitate to place his war-earned increments in its safe opportunities.

SECTION AROUND UNION SQUARE COMING INTO ITS OWN AGAIN

By STEPHEN H. TYNG, JR.

CONDITIONS on and around Union Square are improving and it would seem that the days of darkness have passed. The large areas of space that were thrown on the market, due to removal uptown, have been in a large measure absorbed and new trades have located here. Among these new tenants will be found representative houses of the highest financial responsibility formerly located in the downtown district.

The war has probably hurt this section more than any other; manufacturers' agents have been forced to give up their quarters and no new concerns have been able to start, due to the impossibility of getting goods owing to various war conditions in the different foreign countries. The clearing up of the work in the Broadway subway is now promised us with trains running in a partial service at an early date, which will have a very material effect on conditions, indeed.

We all believe Broadway will come into its own again; Union Square, from the rapid transit standpoint, has been too little thought of and I look to the locating here in the near future of large concerns who will pick out this section on account of its accessibility by rapid transit to all the boroughs and New Jersey. Indeed, the most optimistic opinions have come to me from out of town concerns who look at this question from the practical side of efficiency and economy, and are not as insular in their opinions as to real estate values and locations as we are too apt to be.

The very factors that have stopped the erection of new mercantile buildings to a large extent in this and other localities are bound to be helpful from the owners' standpoint; older buildings that have been modernized and made to comply with the various departmental requirements are being rented, and the law of supply and demand comes into its own. I doubt if a canvass were made today of the area of vacant space now for rent in the section from 14th to 23d street, that there would be found the over-supply that some people think exists.

The success of the modern buildings which have been erected in this section and of the older ones which have been equipped with the facilities that present day manufacturers desire, has demonstrated beyond question that the future of Union Square lies in the hands of the property owners, themselves.

MIDTOWN BROADWAY FIRMLY ESTABLISHED

Section Between Herald Square and Columbus Circle Scene of Structural Activity—Automobiles and "Movies" Predominate

By JOHN P. KIRWAN, of John P. Kirwan & Sons

THREE words can properly express the real estate field as it exists today in Manhattan. It is a "Big Man's Market." Deals ranging in size from $500,000 to $3,000,000 are being closed every week, but when it comes to a large volume of small business the results are more or less unsatisfactory. The market as a whole is in a healthy condition and is passing through a stage which is necessary before a broad gauge investment era is met again. Indications at the present time point to the revival of interest by the small man, but these are only indications and nothing tangible can be pointed to. The student of market conditions to be successful must see the straws and not have to wait until the storm breaks before the direction of the wind can be seen. The splendid renting conditions should be an important factor in bringing in the man of limited means, and the new subway construction will also be another factor which will tend to increase the scope of the purchasing power.

I certainly look for a better market and this statement is not made because the wish is the father of the thought, but because the market is in a technical position which warrants expansion. One of the reasons why the market should become enlivened is that the money market is easy. Loans are obtainable on reasonable propositions and at fair money rates. The loaning institutions and estates are more than willing to place their funds out on real estate, more so than for several years passed. To be sure, they have learned a lesson in over-speculation, and must be assured that the buy is a sound one, that enough equity exists to cover the possibility of foreclosure. Given these conditions, loans are easily obtainable.

Wall Street Profits.

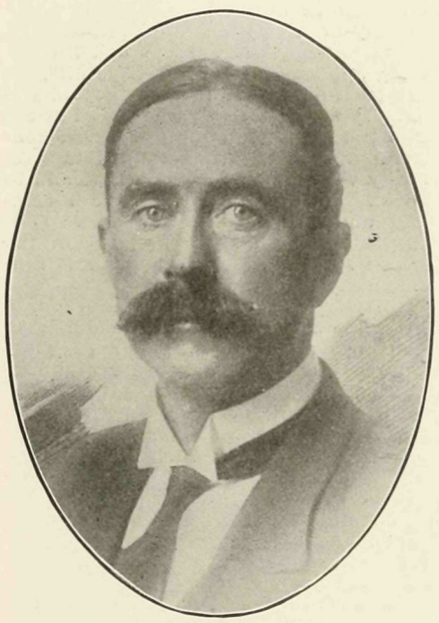
Many people have and are interested in stocks in Wall Street and have made large profits. It is only a question of time before there will be a reaction in the Street, and the little man, so often caught, has learned a lesson, and is today taking profits. A large percentage of this money will find itself invested in real estate and when this influx commences the real estate market will become much broader.

In that section of Broadway between Herald Square and Columbus Circle there have been a large number of deals, involving sales, leases and important building operations. These transactions were most important in character, as for the most part they meant permanent improvements, ones designed to remain for many years to come.

North of Times Square the automobile and motion picture industries are fixtures and a long period of time will elapse before they are ousted. The automobile has long since ceased to be altogether a luxury and today it is considered a necessity and the "movies" is a form of inexpensive enjoyment which appeals to the vast majority. The basis upon which both these industries are founded are safe, and therefore they are permanent.

The demand for lofts in the Herald Square section is splendid. There is hardly a vacancy to be found in any of the new buildings today, while the demand is still insistent. It is very hard to find large space in the district, though, of course, there are a small number of small places which can be leased.

There is a demand for more buildings in the section, but the high cost of building materials and labor have been retardent factors. These conditions will adjust themselves and in a way are benefits rather than hindrances, inasmuch as they act as curbs on over-production.



JOHN P. KIRWAN.

The opening of the new subway systems on Seventh avenue and Broadway should help his portion of the city to no small extent. At the moment the streets are in deplorable condition, but bad as they are, they look "spic and span" to those who remember the mountains and valleys in 42d street and Broadway when the first underground railroad was constructed. The work of finishing these roads has begun and within the next few months surface conditions will have improved vastly and then the real result of all the upheaval will be seen.

There has been a tremendous amount of new construction work started or completed between Herald Square and Columbus Circle during the past eighteen months, and the improvements have been of such character that the entire district has been immensely benefited.

To get some idea of what has been done along this line, the reciting of a few of the improvements might be desirable.

R. H. Macy & Company contemplate the construction of an annex to their department store property, at 149 and 151 West 34th street, through to 146 West 35th street, forming a plot with a frontage of 47 feet in 34th street and 50 feet in 35th street, wih a depth of 197.6 feet. Robert D. Kohn, architect, is preparing plans for the project.

The Greeley Square Hotel Company is building a $500,000 annex to the Hotel McAlpin at 46 and 48 West 34th street, on a plot 50x100 feet, to meet increased demands.

The Johnson Building, occupying the entire block front on the west side of Broadway, from 35th to 36th streets, was completed early in the year by William Everdell, Jr., and Henry Barnum, from plans by Clinton & Russell. This project, which gave Herald Square one of its largest buildings, involved in its various phases a total outlay of about $6,000,000.

The ten three and four-story tenements, known as 469-479 Seventh avenue, and 158 to 164 West 36th street, forming a plot 140x98.9 feet, were purchased by Haas Brothers, silk manufacturers, as a site for a tall mercantile structure. The plot had been held at $650,000.

Near Times Square, Brokaw Brothers took possession of their new building, owned by the Pittsburgh Building Company, Henry Phipps, which was taken by them under a twenty-one-year lease with two renewal privileges, the rental for the first period approximating about $3,000,000.

At 132 and 134 West 42d street and abbutting property in West 41st street, the Bush Terminal Company is building a twenty-nine-story hotel and permanent exhibition building on land leased for twenty-one years with four renewal privileges and an option to purchase on land. The owner of the land is John Hoge, of Zanesville, Ohio. The estimated cost of the building has been placed at $1,000,000.

At Seventh avenue and 42d street, the old-time Victoria Theatre has been reconstructed into a high-class moving picture theatre, the Rialto, and the street and avenue frontages divided into stores, which have shown excellent renting results.

The Theatre Français, whose former home in West 44th street was sold to furnish the site for a commercial improvement, has leased the plot at 211 to 215 West 45th street, for a long term, as a site for a new theatre. The land is owned by W. W. Astor, and was held under lease by J. J. Schubert and Edward Margolies.

The Horn & Hardart Company, which owns and operates the Automat Restaurants, purchased at a reported price of $1,000,000 from the Finance Company of Philadelphia the three-story building at 1557 to 1561 Broadway, just south of 47th street, occupied by them under a long term lease.

The Willys-Overland Company leased from the Estate of John G. Wendel the property at the northwest corner of Broadway and 50th street, a three-story structure, which had been unoccupied for a great many years. The property has been remodeled to meet the requirements of the lessee.

At the southeast corner of Seventh avenue and 49th street, the 727 Seventh Avenue Realty Company, George Backer and Arnstein & Levy, have erected a sixteen-story building, especially designed to meet the needs of moving picture producers. This company leased the site measuring 100.5x100 feet from George W. Godfrey, of Scranton, Pa., for a long term at a rental aggregating about $1,750,000.

Big Ford Project.

The Ford Motor Company of Detroit acquired the property at the northeast corner of Broadway and 54th street, with a frontage of 129.7 feet on the avenue and 54.7 feet in the street. On this site a fifteen-story structure will be erected, the lower three floors of which will be used as an automobile salesroom for the occupancy of the Ford Motor Company. The upper twelve stories will be used as an annex to the Woodward Hotel, which adjoins on the north.

The Sonoma, the eleven-story apartment house at the northeast corner of Broadway and 55th street, was sold by the estate of Henry Schwarzwalder to Jacob Axelrod, who gave in exchange the twelve-story apartment house at the northeast corner of Broadway and 88th street, in a deal which involved about $2,500,000, and was one of the biggest of the year.

The old church edifice at 212 to 218 West 57th street was sold by the trustees of the Central Presbyterian Church to the Consolidated Gas Company, as the site for a new building, adjoining the property of the clubhouse of the American Society of Civil Engineers and the seven-story Iverness apartment house.

It can be seen, even by the uninitiated, that these important operations will be the cause of thousands of people coming into the section and it will mean the transaction of business amounting to millions of dollars annually.

Broadway is Broadway. There is only one Broadway in the world, and as long as New York City is the leading metropolis in the country, Broadway will be its principal thoroughfare.

BOROUGH WORK.

(Continued from Page 47.)

repaved during 1917 with thoroughly serviceable and adequate pavement.

Twenty-first. During the latter part of the year, work on the large tunnel relief sewer in West 46th street was suspended through the abandonment of contract by the original contractor. A new contract was let in record time, however, and the present contractor is now vigorously pushing the work forward.

Twenty-second. We have completed and put in operation the large tunnel relief sewer in East 41st street which serves the vicinity of the Grand Central terminal.

Twenty-third. The new sewage screening plant at Dyckman street and the Hudson River is now under contract, and its construction will be completed next year. This plant will eliminate an intolerable nuisance to both sight and smell which has been caused by the accumulation of sewage matter along the shore of the Hudson River in this section.

Twenty-fourth. Jefferson Market has been reconstructed and redecorated along the lines of Washington Market, which we rebuilt last year, and includes the most modern and desirable features in the way of convenience and sanitation. We have enclosed with glass windows and doors the Queensboro Bridge and Harlem Bridge open markets. We have in the Washington Market completed the installation of the refrigerating plant, which is now affording to the city revenues from stand-holders. We have constructed an improved sewage system and new pavement in West Washington Market. We have prepared plans and specifications, and are now awaiting bids for the reclaiming of the old Fulton Market, which a few years ago was abandoned.

Twenty-fifth. We have made numerous surveys, maps, studies, and estimates for the use of the Port and Terminal Committee of the Board of Estimate, in connection with the proposed New York Central west side trackage changes.

Twenty-sixth. We also co-operated with the Park Department in the matter of the Riverside Park relandscaping, as affected by the proposed relocation of the New York Central tracks.

Twenty-seventh. There were filed at our office this year plans for 487 new buildings to cost a total of over $111,000,000 and 3,397 plans for building alterations to cost a total of over $18,000,000. More than 6,500 violations and over 2,000 unsafe building orders have also been filed.

Twenty-eighth. Through improved organization and methods, and employing as far as possible our own departmental repair gangs, rather than by contract, we have maintained the streets of the borough with a very much reduced appropriation. This has been accomplished despite an unusually large amount of pavement destruction occasioned by the building of subways, the installation of a new fire alarm system, the overhauling of steam pipes and other sub-surface work. The use of a heater which softens the asphalt and permits its economical removal and replacement has enabled our maintenance force to resurface Central Park West from 59th to 110th streets, and a great many of the blocks on Seventh avenue, between 110th and 153d streets. Had it not been for the use of this heater, we should have been obliged to repave these streets by contract at a tremendously greater cost to the city. Greatly increased efficiency in the administration of the borough asphalt plant has made it possible for us to repair approximately 350,000 yards of asphalt pavement, which is an accomplishment reflecting great credit on our asphalt force.

Twenty-ninth. The installation of a new electric elevator in place of the old hydraulic one in the Harlem court house has resulted in another substantial annual net saving to the city.

Thirtieth. An improvement which will result in a very appreciable saving in the topographical and engineering work has been brought about through our establishment of a topographical base line on Tenth avenue, from 14th to 155th street. This base line connects and ties in the previously established line below 14th street with that above 155th street, and now gives us for the first time a standard base line with which may be co-ordinated all lines within these limits. We expect next year to establish a similar base line on Fifth avenue, thereby tying in the entire borough.

Thirty-first. By an improved method of controlling vault surveys and investigating applications for vault permits, we have been able to afford prompt and satisfactory service to applicants and at the same time to obtain for the city a considerable revenue from vault fees previously very difficult to determine and to collect. Furthermore, we have formulated and proposed a new system of charges for vault space in place of the present system which we believe is fundamentally inequitable.

Thirty-second. We have endeavored to develop as far as possible personal relationships and co-operation among the employees, and also between the administration and the employees. Our Welfare Committee has been very active in providing for the well being of our employees and their families. In 1914 I established this committee for the purpose of fostering good will, increasing the happiness and promoting the co-operation and efficiency of the employees of the various departments and offices under my jurisdiction. The committee has arranged outings, festivals, balls and entertainments, the net proceeds of which have been devoted to the relief of needy employees or their families. The new system of Joint Trial Boards, which I originated to hear charges against Civil Service employees, has continued to operate with increasing success. Each trial board is composed of two officials representing the administration, and two fellow employees of the one under charges selected by lot. Last year there were fifty-one trials and this year there have been thirty-one. As indicating fewer derelictions and thus fewer occasions for trial, this decrease is most gratifying. In the recommendations of the Joint Trial Boards, the employees have the utmost confidence, which has contributed in no small way to their successful operation. Another means of fostering efficiency and co-operation have been our weekly departmental luncheons, attended by about forty of the heads of our various divisions and offices. At these gatherings, we have informal discussions, the central thought of which is the improvement of the borough and city government.

Thirty-third. In order to assist me in the study of matters affected by my administration as borough president, I appointed in 1914 Borough Advisory Commissions which represent all sections of Manhattan. These Advisory Commissions have been of the utmost service as a means of affording me reliable information and advice in regard to the needs and desires of the citizens of these various sections of the borough, to the end that I might more intelligently and adequately represent them. In addition to the general information and advice which they have given me in regard to administrative or Board of Estimate and Board of Aldermen matters, they have on occasions directly aided me in connection with specific matters to be acted upon by the Local Improvement Boards. During the past year, there has been increased activity and accomplishment by our Local School Boards, in whose work I am directly concerned through my statutory power to appoint their members under the Greater New York Charter. The Board of Education and the Local School Boards are component parts of our educational system, and I have endeavored in every way possible to promote co-ordination and co-operation between them.

FIFTH AVENUE.

(Continued from Page 53.)

and 70th streets, the Blair house at the southeast corner of 70th street, while the Starr Miller and Plant houses at 86th street are now well advanced. There are also the Kahn and Warburg houses at 91st and 92nd streets.

One of the most important improvements which has been contemplated on Fifth avenue will be the building of a private dwelling on the block front between 96th and 97th streets, which we sold in 1914 to the then Mrs. John H. Flagler. This improvement has been delayed on account of negotiations pending for the restriction of the corners directly opposite Mrs. Flagler's block, which are controlled by Sumner Gerard and General Lloyd Bryce. These corners at present are unrestricted; in fact, someone representing General Bryce filed plans for an apartment house on the northeast corner of 97th street and Fifth avenue prior to the passing of the Zoning Resolutions; this we understand was done for protective measures and that General Bryce is seriously considering the desirability of restricting his property so as to insure the improvement of the block front between 96th and 97th streets with one of the handsomest dwellings ever built here in New York.

North of 96th street, a peculiar condition exists, but one which during the past year has shown signs of a revival of interest. Miss Parsons, who now lives at the corner of 40th street and Park avenue, filed plans for the improvement of the northeast corner of 108th street and Fifth avenue, which she recently purchased, with a private dwelling for her own occupancy.

Mrs. James Byrne purchased a fifty-foot plot between 98th and 99th streets, on which, it is understood, she will erect a private dwelling for her own use. August Heckscher purchased the block front between 104th and 105th streets, which had been hanging over the market for some time past, and the southeast corner of 103rd street and Fifth avenue we sold to Arthur Brisbane, who is one of the shrewdest investors in real estate. Mr. Brisbane has acquired a plot 100x175 which he may decide to improve, or probably resell if a favorable offer is made.

There are still a number of private dwellings along this, the finest residence avenue in the city which are offered at considerable concessions from prices prevailing prior to 1910, as the highest prices which were obtained in that neighborhood were probably those paid between 1902 or 1903 and 1905. Owners have shown a disposition to raise their asking prices and there is a much more hopeful feeling today than there has been during the last four or five years, and with the increasing prosperity in this country we are satisfied that there will be an active market for private dwellings of all types, including the most expensive, and that Fifth avenue will, during the next few years, show a much more active market than seemed possible before this new era of prosperity started.

This section north of 96th street would, of course, have been very differently considered had it not been for the erection of the large hospital buildings between 100th and 101st streets, and while on the other hand the highest type of improvement on Fifth avenue was not stopped by St. Luke's Hospital, then situated between 54th and 55th streets, property north of Mount Sinai Hospital can be bought for less than $1,500 a front foot, including fine corners. This figure is absurd when the advantages of the situation are considered, as the view over the Park is most attractive, and we believe before long every bit of this property, up to 110th street, will be taken up in large plots by people who will realize that they can have a plot 100x100, with a detached house, at a price which they would have to pay for a twenty-five or thirty-foot house a little further down. In these days of fast motor cars, even 106th street is not very much further up-town than the high-priced property in the neighborhood of 79th street.

BRONX IMPROVEMENTS MADE DURING 1916

Future Development of the Borough Uppermost in the Minds of Those Responsible—Some Things Accomplished and Projected

By DOUGLAS MATHEWSON, Borough President of the Bronx.

THERE is gain to be had, as the year approaches its end, in casting a retrospective glance over the months that have gone, so that one may mentally take stock of what has been done, may note what things have been taken under consideration, but not reduced to accomplishment, and with the advantage gained from such a survey, more intelligently plan for the future. In the year about to end, the Borough of The Bronx in its development, in its planning for future development, and in the application of corrective measures to existing practices, has kept step with its record of the past few years.

A survey of the situation naturally presents two distinct fields of activity: On the one hand, there must be the intelligent planning and accomplishment which builds for the future; on the other hand, there must be that careful study of existing methods which points out the way by which waste may be eliminated and economies effected, with resultant savings which may be applied to extended work without increasing the burden of taxpayers. A good development must be preceded by a careful planning made with not only the present considered, but with due attention given to the possibilities of the future.

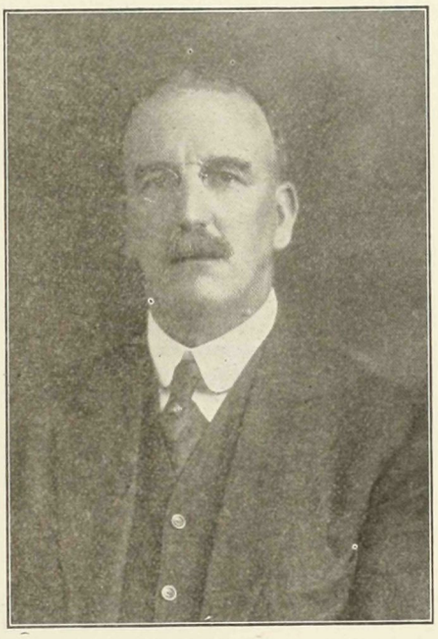
During the year 1916 we of the Bronx have endeavored to plan with the widest possible vision of what will happen in the years to come. Of course, many small matters have been studied and acted upon or are still under consideration. It is the larger plans, however, that are interesting.

During the year plans for the improvement of 149th street by the adoption of a change of grade in that part of the street between Courtlandt avenue and Morris avenue were adopted. Being so near the present center of business activity in the Bronx, the elimination of the steep grade now existing in the block will be a distinct improvement for the neighborhood, bettering traffic conditions, and in all probability the abutting property will respond to the improved street conditions. If it does, a development of a character similar to that existing in the Third avenue section of 149th street may reasonably be anticipated to extend to the west. This is the more probable by reason of the center of activity planned for the future in 149th street in the neighborhood between Park and Mott avenues. In this neighborhood active steps are being taken preliminary to the entrance upon the construction period of the New York Central station.

It is to be hoped that steps looking to the early erection of the Federal building in the same locality will soon be taken. This particular matter of the regrading of 149th street is more than planned for at the present time, because the carrying out of the work has been authorized and a contract for its execution will probably be entered into so that work can be commenced in the early spring.

Forward steps have been planned for the next main crosstown thoroughfare north of 149th street. The plans for the transverse road under the Concourse at 161st street, including therewith the approach to Macomb's Dam Bridge and the improved grading of 161st street to the east of the Concourse, are now in preparation. The general scheme of the improvement has been approved by the Board of Estimate in the appropriation of the additional necessary funds required for the carrying out of the project. So much of the work involved in this improvement as is assessable work has been initiated by the Local Board. It is hoped that actual construction work can be begun in the early spring of 1917.

Plans for the Gun Hill Road improvement between Webster avenue and White Plains road have also been progressing and are nearing completion. During the year provision has been made for the carrying of the road across the New York & Harlem Railroad by a new bridge, and plans have been tentatively agreed upon with the Bronx Parkway Commission providing for the manner of carrying the road across the Bronx boulevard and across the Bronx River. It is hoped that the plans will be perfected and a contract entered into for carrying out the physical work on this very important highway, in the early summer of 1917. The result will be of value to the eastern section of The Bronx, which uses Gun Hill road as its main approach to the south and west, in widening the somewhat congested thoroughfares, bound to be much more congested in the future, and providing easier grades.



HON. DOUGLAS MATHEWSON.

Steps have also been taken bringing nearer the actual starting of work in the Third avenue widening proceeding at Fordham road, but pending action by the Public Service Commission, which it is hoped will be had in the near future; further steps are delayed, although the local board having jurisdiction, has recently authorized the institution of the assessment work which will be required in connection with the building of this Fordham plaza.

Interesting, however, as are the plans for the future, those having to do with real estate are probably more anxious to know of accomplishments. Without going further, then, into things planned for the future, consideration will be given to what has been accomplished or progressed on the road to accomplishment through the beginning of physical work during the year.

The Fordham road improvement has been completed. The general use of the thoroughfare made subsequent to the completion of the improvement has justified the confidence of those who believed that Fordham road was destined to be one of the great east and west thoroughfares of the Bronx.

Substantial progress has been made toward supplying complete sewerage facilities to the Morris Park Estate, with its vast area and numerous individual owners. During the year contracts have been entered into for all of the sewers required in the easterly slope of the tract. The completion of these sewers is expected at an early date. Sewer construction has been progressing on the trunk lines of sewer which will drain the westerly part of the Morris Park tract, once the famous racetrack.

The great Blondell avenue sewer has been placed under construction and substantial progress made in its building during the year. This sewer will extend from Westchester square to near White Plains road and will provide a sewer outlet for the territory near the latter road, which the opening of the new subway on White Plains road will probably render ripe for development.

Progress has been made in the different new transit routes. There has been a continued elimination of overhead wires in the built-up sections of the Bronx, which is proceeding from year to year. The area of paved streets has been extended, and the streets already paved kept in a condition which seems to incur no criticism whatever—and this with economy too. The Bronx asphalt plant, notwithstanding the increased price of materials, is showing an average cost per square yard for repairs to asphalt pavements of between 80 and 90 cents, as against an average cost of $1.40 per square yard paid for patching repairs under contract during the year 1914. The installation of mechanical equipment for oiling such highways as are oiled, too, has resulted in savings, this year the square yard cost of tar surface treatment being about 25 per cent. less than in the year 1915, before the installation of the mechanical distributors.

It is not, however, the purpose of this article to be tiresome in its enumeration, and it has been the purpose of the writer to refer to those matters which were of the most general public interest.

Much could have been written of transit planning and accomplishments in particular localities, of marginal railway planning, of Barge Canal terminals, of improved traffic conditions arrived at with the co-operation of the Police Department, of checks kept upon new transit construction, of improvements in our public buildings and in the method of caring for them, of the new street sign system, in connection with which it may be remarked that we expect the contractor to commence deliveries on almost any day—of improved methods in assigning laborers on highway maintenance, of snow cleaning, and of other things which would be tiresome even to enumerate to too great an extent. Such a detailed statement would be more in the nature of a public official's annual report and not in the nature of a news article for a publication. The purpose of such an article is to indicate in a general way prevalent activities and concrete results, of sufficient importance to furnish a general picture.

Perhaps the writer has succeeded in furnishing that picture. Though he may not have adequately done so, the fact nevertheless is that the Borough of The Bronx, through its officials, through its representative civic bodies, through its citizens generally—is endeavoring to keep abreast of the times to do what is necessary, though not what is unnecessary at the present time and burdensome to the property owners who must pay the bills—but at all times intelligently and wisely to plan for the future.

Bronx Transit.

The Borough of the Bronx will receive its share in the comprehensive rapid transit system which is now being constructed, and it is expected that the actual operation of these lines will draw thousands of new residents into hitherto largely undeveloped areas. The growth of the Bronx in former years has been practically coincident with the openings of new transportation lines, and it is being freely predicted that within the next few years the Borough of the Bronx will witness even greater progress in both the real estate and building fields than has been experienced in the past.

NEED FOR IMPROVEMENT OF BRONX WATERWAYS

East and Harlem Rivers and Bronx Kills Should Be Made Navigable for Large Ships

By ALEXANDER HARING

THAT the important waterways of the Borough of the Bronx should be suitably improved, in order to meet the necessities of those doing business within its confines, has been a foregone conclusion for many years. From time to time a certain amount of agitation has been started and some favorable legislation passed. But this has only been a commencement, and if the borough is to receive a fair proportion of the amount of business which it can profitably handle it is necessary that drastic measures be taken, and immediately.

THREE of the important waterways of the Bronx are the East River, the Harlem River and the Bronx Kills. The East River, of which Hell Gate is a part is a tidal strait about sixteen miles long, extending from the Battery, New York City, to Throgs Neck, at the head of Long Island Sound. A through channel navigable for sea-going vessels has always existed, as far as depth was concerned, but, in its original condition the river was exceedingly dangerous for navigation in the part known as Hell Gate.

The first blasting of Hell Gate rocks took place in 1852. It was not until the year 1876 that the really great engineering accomplishment was achieved.

In that year a tunnel was run through Hallet's Point Reef, which extended from the Astoria shore into the East River. By means of diverging tunnels and transverse galleries the reef was thoroughly undermined. Cans of nitroglycerine were placed in the holes drilled in the rock, the excavation was flooded, and on September 24, 1876, the gigantic charge was exploded, shattering the hard rock so finely that it could be dredged from the river bed. A depth of twenty-six feet of water was thus obtained, and for many years this was considered sufficient. Now, since the necessity of a route for our battleships through Long Island Sound has become apparent, we believe that thirty-five feet of water is none too much.

North and South Currents.

About two hours after the low water of a maximum spring tide at Hallet's Point, the surface current rushes northerly at the rate of 6.7 miles an hour. Then it turns and about 2½ hours after a spring tide high water it is rushing southerly at about 6.4 miles an hour.

It is easy to understand that with such velocities boats of low power cannot stem the current and that all boats become to a certain extent unmanageable. Tows are compelled to await slack water, and many do not attempt the passage at all at night.

The tides at Hell Gate are due to the tidal waves entering the harbor through the Sandy Hook and Long Island Sound entrances. The wave coming from the Atlantic Ocean is retarded in its passage through Long Island Sound by four hours; that is, the time of high water at Sandy Hook is four hours earlier than the time of high water at Throgs Neck.

The wave arriving at Sandy Hook travels through the lower and upper bays and thence to the East River at Hell Gate by two routes, one direct through the East River, and the other via the Hudson and Harlem Rivers. Similarly, the wave from the Sound reaches the upper bay by two routes, the East River and the Harlem River. These waves produce a large river slope, which, as a matter of record, has run as high as 32.7 inches a mile.

The United States Board of Engineers for Rivers and Harbors has solved the problem of these conditions at Hell Gate. It is proposed to deepen the Bronx Kills, which flows north of Randall's Island, and Little Hell Gate, which flows between Ward's and Randall's Island, to a depth of twenty-four feet and appropriate width. The estimated cost of forming these channels is $10,980,000.

Expenditure Justified.

There are four excellent engineering and economic reasons for this large expenditure of money:

1. It assists in the reduction of excessive current velocities in Hell Gate;
2. It affords a short, direct passage for traffic between ports on Long Island Sound and the Harlem and Hudson Rivers;
3. It diverts a portion of the traffic from the crooked and narrow reach of the East River to the west and south of Ward's Island;
4. It increases the circulation in the Harlem River south of the entrance to the Kills, and reduces the annual deposit of silt in that reach.

By deepening the Bronx Kills sufficiently to afford a channel for river craft the distance from the Upper Harlem River to the East River is shortened more than three miles. This is not a matter of purely local interest; it is a matter which concerns the State, for upon the completion of the New York State Barge Canal it is the intention of navigation interests located on Long Island Sound to use the Harlem River route to the Hudson River. Why should there not be a direct water route from all the large cities situated upon the shores of the Great Lakes to the principal ports of Connecticut, Rhode Island and Massachusetts?

About thirteen miles above the Battery, the Harlem River connects the Hudson River with the East River near Hell Gate and separates Manhattan Island from the mainland. The present project for its improvement provides for a channel 400 feet wide and fifteen feet of water at mean low tide, except in two places, viz., at Washington Bridge, where the width is 354 feet, and at the rock cut through Dyckman's Meadows, where the width is to be 350 feet and the depth eighteen feet. The estimated cost of this work is $2,700,000, of which $1,712,000 has been spent.

There are obstructions at two points on this river, which, until they are removed, will always be great hindrances to navigation. I refer to the piers of High Bridge and the sharp curve at the Johnson Iron Works.

At High Bridge the horizontal clearance between piers is forty-four feet. The depth of water beneath this bridge is thirteen feet, except between two piers on the west side of the channel, where it is fifteen feet. It is with difficulty that collisions with the piers are averted when the tide is running. The channel piers of this bridge should be removed so that the full 400 feet width may be realized.

It is possible to carry the water flowing in the aqueduct over High Bridge by means of a siphon under the river. Have not the demands of commerce for a deep and broad waterway in the Harlem River reached the point where the removal of High Bridge is advisable if not imperative?

At the Johnson Iron Works, one-half a mile from the Hudson, the Harlem River makes a double reverse curve. The tidal currents in the Harlem River in this vicinity during both ebb and flood tides are strong, and considering the fact that navigation for single boats is difficult and for boats bound in opposite directions almost impossible, the amount of traffic is large. About 7,300 vessels a year pass this point, or an average of twenty per day.

Barges of 300 tons capacity are about the largest that can be towed through the Upper Harlem at the present time, whereas the new Barge Canal vessels are to be of 2,000 or 2,500 tons capacity. The commerce which would be benefited by the straightening of the channel is closely related to that of the Harlem River reported in 1913 as 18,300,000 tons and valued at $704,985,000.

The Board of Engineers for Rivers and Harbors has recommended and the National Congress has adopted a measure which contemplates an expenditure of $850,000 in straightening the channel of the Harlem River at the Johnson Iron Works. But this appropriation carries with it a proviso that a right of way shall be furnished the United States free of cost. The United States District Officer estimates the value of this right of way at $1,180,000. The State of New York has appropriated $1,000,000 to pay for it, but I am informed that Isaac G. Johnson & Co. demand much more than this amount, and here the matter rests.

It is clear that this improvement might mean the removal of the Johnson Iron Works to another site, but in the progress of the commerce and industry of this State private interests must yield to the larger interests of the community. It is hoped that in the near future a compromise plan may be reached.

Plan New Freight Terminal.

In 1905 a corporation known as The Harlem Transfer Company located a freight distributing and receiving yard in the south end of the Bronx, at the Harlem River and 135th street. It built the usual car transfer bridge, freight house and receiving tracks. This company was organized by the Baltimore & Ohio, Erie and Delaware, Lackawanna & Western railroads to handle their freight traffic in the Bronx.

Now these interests contemplate erecting a ten-story concrete freight terminal. The plans are complete and work will soon begin. The reason for the terminal building lies in an experience which the Lackawanna Railroad had recently in Hoboken. An ocean-going steamer laden with 125,000 cases of canned salmon sailed from the Pacific Coast for New York by the way of the Panama Canal. The railroad reshipped the salmon over its road to the easterly part of the Central West. The reason for the indirect route is an economic one—a matter of dollars and cents. It was cheaper to ship by water from the Pacific Coast to New York and then by rail to Ohio than to send the freight direct by rail from the State of Washington to the State of Ohio.

Pacific Coast Trade.

The Lackawanna Railroad could not handle the salmon in Hoboken and had to transfer it from vessel to cars at another point. It now proposes to do similar reshipment at this new terminal in the Bronx. I am informed that this Pacific Coast traffic is already of considerable magnitude and that it promises to increase tremendously in the near future.

Now it is perfectly plain to all that an ocean-going steamer from the Pacific cannot dock in the Harlem River at 135th street unless there is a sufficient depth of water for such a vessel; fifteen feet is not enough. Government records as far back as 1888 show that the maximum draft of vessels has increased to twenty-seven feet. At the present time freight steamships have a draft of from twenty-six to thirty feet; they sink several feet more when under way and should have at least three feet of water under their keels for steering purposes.

Lumber laden steamers from Vancouver at the present time travel to Poughkeepsie. It is a shorter route from South America to New York through Long Island Sound than through the lower bay.

EASTERN BRONX ABOUNDS WITH POSSIBILITIES

Transit Facilities Will Make Heretofore Remote Section Accessible—Money to be Made in this Portion of the Borough

SPECULATIVE and investment opportunities in the easterly section of the Borough of the Bronx present themselves to those familiar with real estate conditions in New York City. To those who have been following the trend of population within recent years, the upbuilding of some sections of the Borough has been remarkable, while some other neighborhoods have remained comparatively passive. The easterly part of Bronx borough therefore, presents an interesting study.

One entire section, known as the Hunt's Point district, and the contiguous territory has witnessed, within the last decade and a half one of the most extensive apartment house building movements in the history of the city, and vast unimproved tracts of land have been transformed into thriving residential communities. The old farm land has been replaced with block after block of rented multi-family houses, which are returning good incomes on the investment. Builders in this part of the city have been almost uniformly successful in their projects and even at this time the demand for apartments is so healthy and well maintained that new fields are still open for profitable additions to the still growing apartment house colony.

The large influx of population seeking accommodations in these new buildings has created an immediate demand for the small shop-keepers and trades people catering to their various needs and both Westchester and Prospect avenues have become important business thoroughfares. Prospect avenue has become a flourishing business street with practically every foot of possible frontage utilized, and land values on this avenue have undergone almost phenomenal increases as a direct result of the increased demand for space brought about by the upbuilding of the surrounding streets, and the resultant large traffic.

Lots that could have been purchased a dozen years ago for $4,000 are now held for $40,000. A one-story building near the junction of Prospect and Westchester avenues, occupying a plot 77x120 feet, is under lease for $16,000 a year net, creating a value of about $320,000, for a building which is practically a taxpayer. An ice cream parlor in the immediate neighborhood brings an annual rental of $6,000, which may be considered remarkable in view of the fact that ten years ago the entire district represented a small private house community in which a house and lot 25x100 could have been purchased in fee for this amount.

The unusual growth of this section of the Bronx has been practically coincident with the operation of the new subway transportation system terminating at Bronx Park. It is generally conceded that aside from the general desirability of the territory for residential purposes, the greatest contributor towards its expansion and the spectacular rise in land values has been its new transit facilities, placing it within easy riding distance of the principal business, financial, amusement and shopping districts of Manhattan for a single fare.

Adjacent to this important new community whose growth and success may be directly attributed to transit, lie two similar areas which offer the same possibilities to the enterprising investor and builder. The extension of the present West Farms subway system, which has been responsible for the upbuilding of the Hunt's Point section in the surrounding territory will be extended northward along White Plains avenue to the city line, piercing the Williamsbridge and Wakefield districts. The other important link in the new comprehensive transit system will extend along Westchester avenue through Unionport to Pelham Bay Park.

PROSPECT AVENUE, NORTH, FROM WESTCHESTER AVENUE.

It would seem logical in view of these developments that considerable interest be manifested in these sections of the city. But, curiously enough, in spite of the fact that the construction work is actually progressing on these new transportation lines, there has as yet been no response on the part of either investors, speculators or builders toward its real estate possibilities. An analysis of the situation reveals several possible reasons why there has not been building and buying activity. First, there is the attitude of the average owner, who has been holding his property for many years in anticipation of ultimate subway construction, and who has been patiently paying assessment after assessment for various municipal improvements, such as street widening charges, sewers, etc. Having waited all these years for the final realization of his hopes, he is determined to keep on holding his property in order to reap the benefit which he feels must eventually come, now that the subway has actually become a reality.

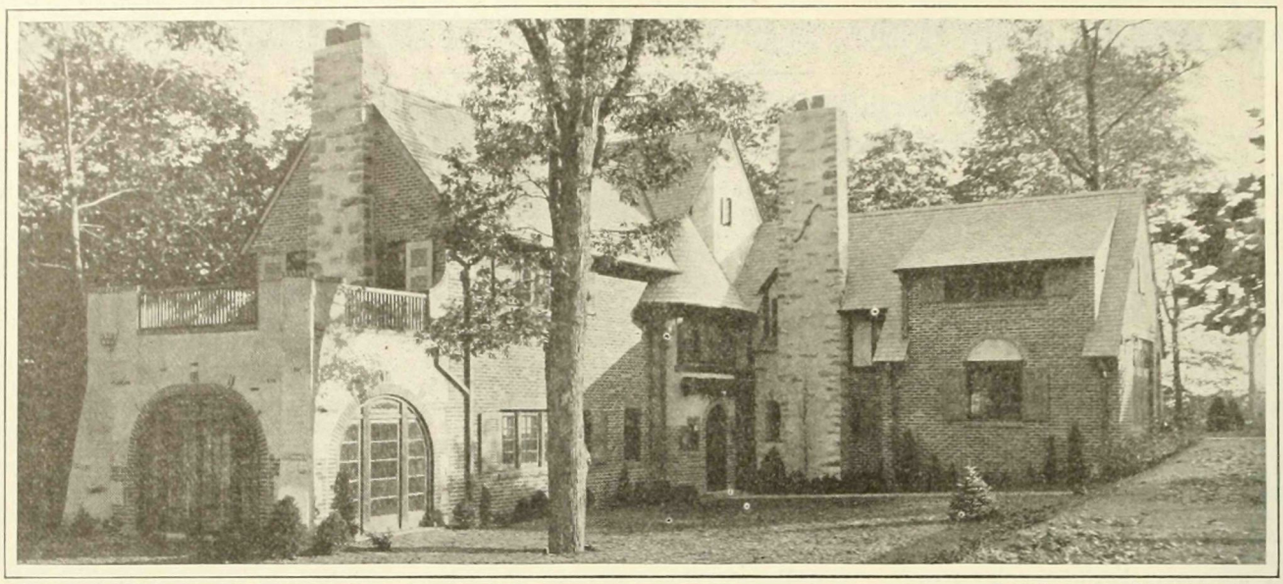
The two principal deterrents toward the upbuilding of these easterly sections of the borough has been the lack of quick connection with the more important sections of the borough and the city for a five-cent fare, and the lack of adequate sewer facilities and other street improvements, which precluded the possibility of the erection of structures other than the one and two family house, which at present represents the prevailing type of construction.

The announcement that the contracts had been favorably awarded for subway construction in the East Bronx, was received with great enthusiasm, and property owners were jubilant. The long expected real estate revival was immediately anticipated in the light of the experience of Hunt's Point and the other sections of New York City, whose transformation followed the installation of adequate transportation facilities. Curiously enough, aside from a few sporadic outbursts of buying activity, conditions have remained practically normal. One great change, however, is the new attitude of the owners themselves who are waiting for the slow and steady increment in land value which they knew is inevitable as long as New York City continues to expand. The fact that the actual undertaking of subway work has not stimulated either the building or buying markets, represents another of the curious and sometimes inexplicable developments which have characterized the growth of New York City.

The entire section is admirably adapted for residential purposes from many standpoints, and it is generally predicted that its future will lie principally in that direction. The land, as a rule, is high and dry, and has excellent drainage, averaging about 160 feet above tide water; at one point in 229th street, the land is 211 feet above tide water. Its present growth is represented almost exclusively by small one and two-family brick and frame dwellings. Great tracts of land lie unimproved and building sites are available in great numbers, not only in the interior districts, but also along the line of the principal thoroughfares. The one great drawback which has retarded its growth, namely its inaccessibility, will soon be eliminated, and this territory, with its almost unlimited possibilities, will be placed within the five cent zone.

The addition of the new transit system to the present surface lines connecting with practically all parts of the Borough of the Bronx, besides Mt. Vernon and Yonkers, is expected to furnish the requisite impetus toward buying and building. While this tendency has not been manifested through the actual consummation of many transactions, owners and brokers feel that their confidence in the future of these districts will be amply rewarded when subway trains are actually placed in operation. At that time Williamsbridge, Wakefield and Unionport and their environs will receive their share of new building operations.

If the experience of the Hunts Point district be a criterion for judging the future, these districts should be on the eve of a prosperous era.



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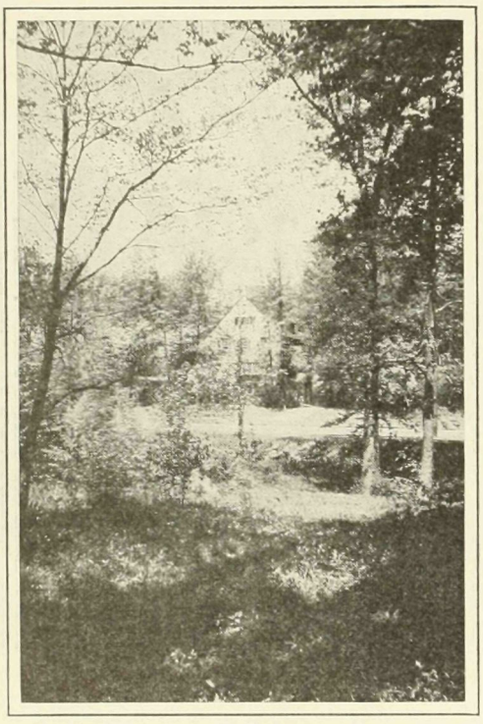
Fieldston, Riverdale-on-Hudson



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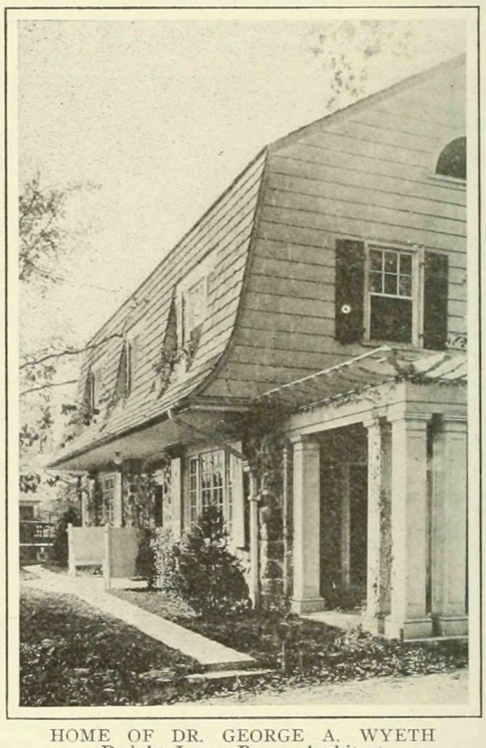

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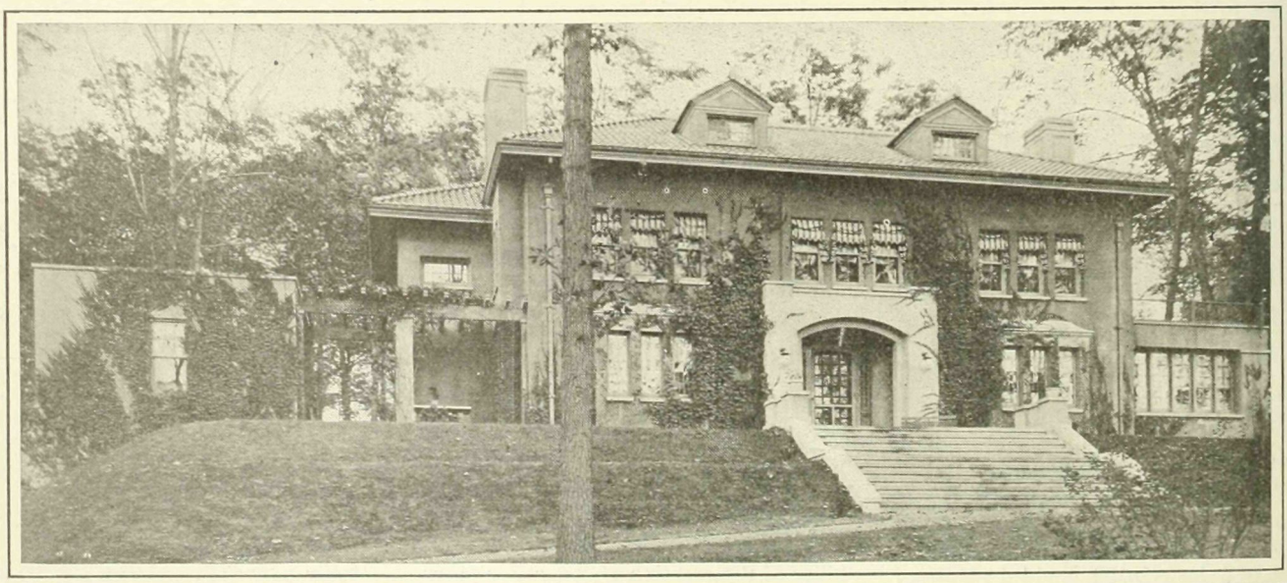


DEVELOPMENT OF RIVERDALE HILL ASSURES FUTURE OF HOME COLONY

By EDWARD C. DELAFIELD, of Delafield Estates

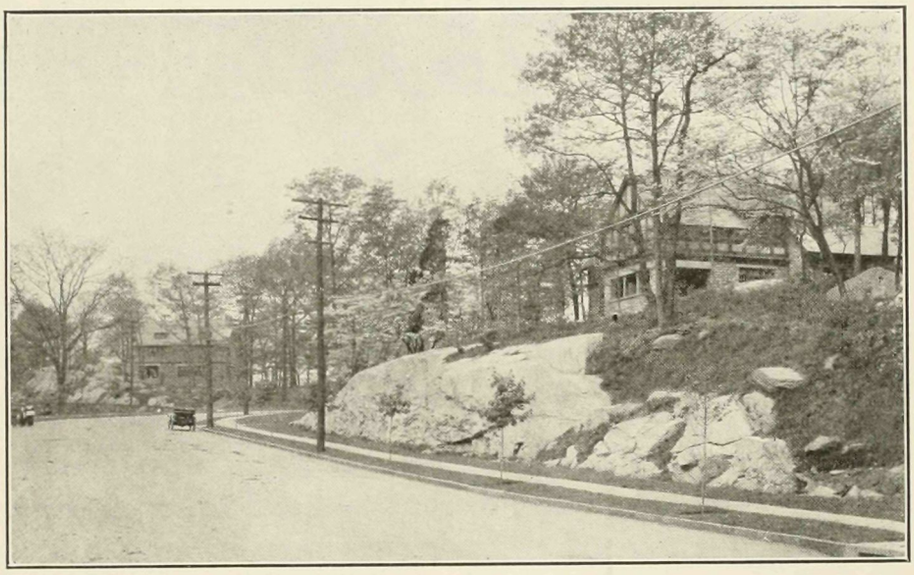
THE Riverdale Hill section, long ago a part of Yonkers and recognized even then as a residential centre, for more than thirty years a part of the City of New York and the home of many of its influential citizens, and for the past few years a part of the Borough of the Bronx, has, on account of its geographical isolation, been but little noticed and received but little mention in the realty records of the city. The district rises to an altitude of two hundred and eighty-four feet, the highest point in any part of the Greater City, and is approached on all sides by rather steep hills. Bounded by the Hudson River on the west, by Yonkers on the north, by Broadway and Van Cortlandt Park on the east, and by the lowlands of Tibbetts Brook and the Ship Canal on the south, it has always been close to, but just removed from, the line of travel.

During the past few years, through the petition of property owners, the city has made numerous street improvements throughout the district, notably in the northerly part, where the land is less rugged and where the improvements were easier of construction, at 261st street and Riverdale avenue, and vicinity. Sewers have been laid, sixty foot streets opened and paved with asphalt or brick. City sewers have also been completed in Moshulu avenue, Spuyten Duyvil Parkway and in portions of the old Hudson Estate south of the Parkway. Fieldston Road has been acquired by the city and graded at an expense which has delayed individual improvement on account of the assessments levied on the surrounding property. The lowlands near Broadway and Tibbetts Brook have been, in a large measure, filled and the objectionable features of a low-lying area near a residential district eliminated.

Private improvements have not only kept pace with but have exceeded the city improvements, and have been carried on along lines which attract the individual homeseeker, and prevent the possibility of half-finished streets lying idle for many years, which almost always occurs with city development. In the Spuyten Duyvil end of the district the Edge Hill Terrace Company and the Along-the-Hudson Company have further improved and beautified their ground, and the demand for their property has shown a continued increase. "Fieldston," the property of the Delafield Estate, has continued a development, planned several years ago, along a scientific and artistic layout and is continually opening new avenues and streets. The development there has been confined to a residential one, buildings costing from $10,000 up to $40,000, and the demand following up the hills towards the higher portion of the property.

The increase of population has been rapid for this type of development, but does not, of course, compare with the increase shown in the apartment house districts of the western Bronx, such as Kingsbridge. The community is a unit in its desire and determination that this hill district is for residences only, and therefore has been most energetic in furthering its development and maintaining its restrictions.

During the past year the City of New York has passed certain regulations restricting certain areas to a definite type of development and the largest single high class residential area thus restricted lies in this section of the city. Residents are, therefore, protected not only by the individual restrictions set upon the land by many of the largest estates, but also by the restrictions imposed by the Board of Estimate under the law, and the possibility of owning a country home within the city limits and within but thirty minutes' motor ride from 42nd street and immediately adjoining the terminus of the Broadway subway, has been accomplished.



TYPE OF RESIDENTIAL DEVELOPMENT AT "FIELDSTON."

CONDITIONS IN THE LOWER BRONX INDICATE PROSPERITY FOR 1917

By J. CLARENCE DAVIES

REAL estate in the Bronx this year has more than held its own. Population has increased in the usual proportion and rental conditions have been far better than usual so that new law flats and store properties are well rented. Confidence in its stability as an investment has been shown by the purchase by investors of new law flats and store properties while more buyers are coming into the market every day.

Owners of well located flats have no difficulty in keeping them rented and in many instances rents have been increased in this class of houses. Stores in the business centres have been leased at increased rentals. The increase in population and in building during the year has had the effect of making property in the business centres better than ever. Not alone where the leases have run out have they been renewed at increased rentals, but further accessions from downtown concerns have been made to these centers.

At the hub of the business centers of the Bronx, at 149th street and Third avenue, the Aeolian Company, Schulte Cigar Company, Willys-Overland Company, Chalmers Motor Car Company, Studebaker Company have all opened branches in this section. The Dollar Savings Bank has purchased property at the corner of 147th street and Third avenue, running through to Willis avenue, on which to erect a new bank building, and other tenants have moved into this business center. Here good locations are more in demand than ever. At present it looks as if this center were going to be still more in demand as the side streets to the south and west become more thickly populated. It is hoped that the United States Government will start building on the property acquired at 149th street and Mott avenue. There are rumors that the New York Central Railroad Company will start their station at this point at the same time, all of which will tend to strengthen this center in the Bronx.

At 163d street and Hunts Point road another business center has formed. This district is well rented at the present time, and while the tenants may not be the same class as formerly, the opening of the Lexington avenue subway, with a station on this corner, will make this in time one of the greatest business centers in the Bronx. The Community Building corner of Southern Boulevard and 163d street, a four-story store and office building, on plot 100x140, has been sold this year.

The newest and probably one of the best business centers is now forming in Fordham. During the past year there has been an enormous amount of building in this section. At the northwest corner of Fordham road and Decatur avenue the Corn Exchange Bank is building for its own purposes. A large theatre is nearing completion at the northwest corner of Webster avenue and 195th street. Rogers Department Store has purchased a large plot on Fordham road and Webster avenue for a Fordham branch.

The Tremont business center is steadily improving. A large building for city purposes has just been completed on Tremont avenue. The Edison Company purchased the northeast corner of Tremont and Monterey avenues for a Tremont branch. Several large plots on the Concourse, between 167th and 171st streets, have been sold to builders who are now erecting apartment houses on same. With the elimination of stores on the Concourse, under the new zone restriction, this thoroughfare should build up with high class apartments. The new zone restrictions will also have a similar beneficial effect on other localities.

In the industrial line, the Otto Higel Company of Toronto, manufacturers of pianola actions, purchased a plot of twenty-two lots at Bronx Boulevard and 238th street, upon which they have erected a large reinforced concrete factory. The Morgan Steam Laundry Company purchased a plot of twelve lots on the east side of Mott avenue, running through to Sheridan avenue, north of 153d street, upon which they are erecting a two-story building.

The tremendous prosperity throughout the country is bound to be reflected in real estate. Real estate is generally the last to feel prosperity. Real estate is now in the same condition that Wall Street was in 1914. When prosperity spreads among the masses and when the merchants commence to accumulate money, then if there is anything certain, it is absolutely certain that real estate will feel it.

Real estate is on a substantial basis. Good property is paying better than ever. The increased cost of building and building material has made the present houses even more valuable than what they were before. When real estate commences to feel the effect, its rise will be as sudden and as surprising as the increase in Wall Street during the past two years.

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REVIEW OF ACCOMPLISHMENTS IN BROOKLYN

Street, Sewer and Other Municipal Improvements Completed During 1916 Bring Borough to High State of Development

By LEWIS H. POUNDS, President, Borough of Brooklyn

THE people of the Borough of Brooklyn have an abiding faith in the Borough's destiny. This faith is not of the weaker sort, being mere belief, but is given vitality through active work which brings results. The destiny that we believe in is that we are shortly to be the controlling borough in the great city, so far as population will make a borough controlling. The foundation of community growth is industrial development. Brooklyn is assured of this. She has a more active, intelligent and conscious civic spirit than the other boroughs of the city. This is made manifest throughout her local affairs, but it is more effective in promoting the Borough's growth in working through and with the wider city administration. We have public sentiment and participation in borough affairs, but this force is also active and recognized in the important municipal activities. Prestige and power are coming to the Borough through the growth of its industries furthered by effective civic services.

Increase in Population.

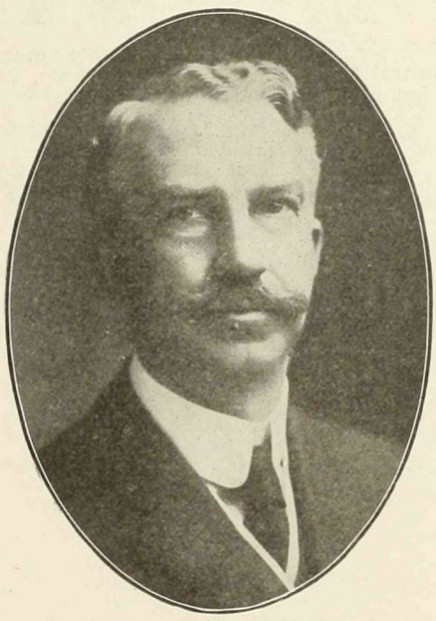
Since the census of 1910 the population of the Borough of Brooklyn has increased about fourteen per cent., having at the present time an enumeration of at least 1,900,000. The latest report of the Department of Health places the population at 1,928,432. This is greater than was accredited to New York City at the time of consolidation. A yearly increase of from 50,000 to 60,000 souls will be much greater from this time on. This statement is beyond question when we consider the early addition to our transit facilities and the phenomenal growth of manufacturing and commercial business. It must be remembered that at the present time our transportation lines are practically incapable of carrying more people. They are taxed to their utmost capacity. This has been a retarding influence. The new lines to be opened at various periods from one to two years will increase the carrying capacity at least three-fold. Brooklyn, in my opinion, will derive the greatest benefit of any borough when the Dual System of rapid transit is completed.

Industrial Development.

The development of all manufacturing and industrial units along our river front and in other sections of the Borough has been far greater during the past year than ever before. Nearly all these industries are extending their facilities, new plants are building and others are being planned. A survey of what is being done from the Bush Terminals at 39th street to the Williamsburg Bridge will be convincing proof of this statement.

The borough administration of Brooklyn has been practically the same in policy since 1910. The personnel of those directing its administration has been largely the same. The policy during these seven years has been to make Brooklyn the most convenient and attractive borough in which to live, and to extend and strengthen, through better facilities, her natural inducements to commercial trade and general business.

The past year has not been sensational or marked by extraordinary local achievement. Proper maintenance and continued development of the various borough activities, with some additions of a general character, constitute the year's work. Through a more active participation in the work of the Board of Estimate, the borough itself has become a potential factor of the Greater City and its administration has received consideration never given it before. City problems are borough problems as well and the borough's influence and control in the city administration is in proportion to its co-operation and willingness to aid in working out the great municipal problems as they are presented to the Board.



HON. LEWIS H. POUNDS.

The participation of the borough in the work of the Board of Estimate and Apportionment and the city's finances on its more technical side has been shown in the work of budget making for city and borough, and in the corporate stock committee and appropriations made for improvements. Each borough and department head has taken a personal interest in the making up of the City Budget. The Borough President and Consulting Engineer of the Borough, George W. Tillson, were actively engaged throughout the budget-making period in the closest application upon this very important work of the administration. Not only did they participate in the budget of all other departments, but they were equally careful in making up the amount of money to be expended by the borough during the coming year. The borough budgets have steadily decreased since the year 1910, and, although there is a slight increase in the budget for the coming year, due to mandatory increases of salaries and to the additional cost of materials, nevertheless the budget for 1917 is nearly $250,000 less than that for 1910, the first year of the Gaynor, and to a great extent Fusion, administration.

New Borough Activities.

During this time, too, many activities have been added to the borough administration, such as the Municipal Bath at Coney Island, meeting the payroll of the Topographical Department from budget appropriation instead of corporate stock, and greatly increasing the forces in the Highway and Sewer Bureaus to meet the additional amount of work. In other words, while the population and work of the borough has increased more than fourteen per cent., the appropriations have decreased about twelve per cent. Positions becoming vacant have not been filled, except where absolutely necessary. Reorganization of forces in the departments has been the principal factor in bringing about greater service at less cost.

The Borough probably takes more pride in the condition of its streets than any other community of the city. Partly through favorable conditions and in part through constant attention and the efficiency of the Highways Bureau, the streets have been kept in a satisfactory condition. A report just submitted by the Chief Engineer of the Highways Bureau, H. H. Schmidt, shows a remarkable condition of street surface and perhaps one that no other city ever attained. Through our district inspection, which is a careful report made block by block throughout the borough, the street surface of the Borough of Brooklyn is eighty-five per cent. without defects. About eight per cent. of the blocks show only one defect, about four per cent. show two defects, and about three per cent. three or more defects. This does not mean that certain streets should not be repaved, but it does mean for the type of pavement it is as good as can be expected.

Inasmuch as about 30,000 openings are made in the streets each year, there must always be a large percentage of the 9,000 blocks of pavement having one or more defects. I feel that emphasis should be placed upon this feature of our highway work, for I doubt if it has ever been equalled by any city, in this country at least.

Rebuilding of Streets.

Since 1910 the street of the Borough of Brooklyn have practically been rebuilt. Out of the approximately 1,700 miles of paved streets in the entire city, Brooklyn has 882 miles. Keeping in mind that Brooklyn is constantly preparing for the future awaiting her, and further, calling attention to the fact that at the time of consolidation Brooklyn had nearly 300 miles of cobblestone pavements and very little of any other class of pavement, we now have over 600 miles of asphalt and wood streets, all being smooth surface streets; about 170 miles of granite and iron slag, much of which is modern granite; about 100 miles of macadam, and only twelve miles of Belgian block and cobblestone. Preparedness is the keynote of the day. In the extent and quality of her paved streets Brooklyn is prepared for the tremendous demands made by every community for good streets.

Since 1910 Brooklyn has been paving and repaving an average of about 60 miles of streets per year. This year, due to inability of contractors to obtain material and labor, only 30 miles have been actually paved.

Highway Repairs.

The maintenance division of the Bureau of Highways is the principal instrument in keeping the surface of our streets in good repair. While our borough asphalt plant is far more limited than the borough requires, yet by working almost double shift this plant has accomplished remarkable results. Since it was established, in 1907, the cost price per cubic yard has steadily decreased from about eighty cents to a little more than forty cents. Some seventy different gangs of men are at work constantly on the streets of the borough. Although performing work different in kind, a separate cost sheet is kept by each one. Strict ledger accounts are kept in the offices of the various corporation yards, so that at all times we have an accurate account of material on hand and the cost of maintaining pavements in each block. Perhaps no such advance has been made in the laying of any pavements as in that of granite pavement, which, as traffic becomes heavier, is coming up more and more the best permanent pavement, and, as now laid, is comparatively smooth. Brooklyn was the leader in this improved type.

About three years ago the borough administration determined to rebuild the pavements on the principal streets, such as Fulton street, Myrtle avenue, Broadway, Bedford avenue, and Flatbush avenue, throughout their entire lengths. This has been accomplished except in the case of a very few blocks where subway building has prevented. One important thoroughfare affecting

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travel coming from all parts of the city is Harway avenue, from Twenty-third avenue to Coney Island. This has been rebuilt this Fall, and from now on the public will have their pleasure riding materially increased by a smooth, dustless pavement on this important link of travel.

I have dwelt upon the methods of construction and condition of the streets of Brooklyn because the condition of the streets is becoming the greatest asset of any municipality. Their maintenance affects the convenience and pleasure of the public more than any other activity. The administration of Brooklyn is not embarrassed when reference is made to her streets.

Adequate and proper drainage is most important to the health of any village, town or city. Up to a few years ago Brooklyn had been backward in this important improvement, as had been most other parts of the city. An average of sewer construction in this borough since 1910 has been about fifty miles per year. Many main outlets have been provided and the work of connecting up with lateral lines of drainage has been vigorously carried on. The southern and eastern sections of the borough are the principal territories now being provided for. The district lying between Kings Highway, Sheepshead Bay and Coney Island and extending to Gravesend Bay is now being provided with facilities which, because of the difficulty and expense of design and construction, have been retarded.

Owing to the topography of the country, the drainage problems presented are very difficult. Pumping stations have been provided, others are planned, and a modern form of sewage disposal is about to be put into effect. Protection to our ocean fronts, rivers and other waterways is engaging the best talent that can be employed. Brooklyn has been carrying on for several years advanced work in this important line. Jamaica Bay and the Canarsie sections have suffered for the lack of efforts along these lines. Within the next few months plans will be approved by the Board of Estimate which will relieve the nuisance and material injury that has affected the Twenty-sixth Ward and the Canarsie and Jamaica Bay sections because of the lack of adequate drainage and sewerage disposal facilities. Relief will be afforded the outer sections of Brownsville through a new system in Ralph avenue, Remsen avenue and lateral connections. This rapidly building locality demands the improvement. Lack of title to streets and other causes have prevented an earlier fulfillment.

Louisiana, Hegeman, Stanley and other avenues will be the locations of another extensive outlet system. These new systems are all provided with ample sanitary and surface flooding requirements. Sewers of great capacity in Maspeth avenue and North 12th street are just being completed and will give much needed relief to the extreme southeastern section lying along the boundaries between Williamsburg and Greenpoint and extending to the Queens Borough line.

There has been much discussion of the so-called Classon avenue system of sewers. This section had only old sewers built at least fifty years ago. The flooded conditions from Wallabout Basin to East New York had been a detriment to new buildings and a menace to this important business and residential section for many years. This entire system will cost upwards of three million dollars, but will bring absolute relief to the entire section from Wallabout Basin through various streets to Eastern parkway, thence to Broadway and beyond. It is to be paid for by assessment upon an area which, of course, will be a considerable burden, but years of study and consideration on the part of the Sewer Bureau and the Board of Estimate failed to present a better plan than the one adopted. It has been established as the policy of the Board of Estimate that each locality shall pay for the rebuilding of its sewer system to meet modern demands.

The paving all streets and connecting of all buildings with sewers have added many-fold to the requirements of providing for times of flooding, and it is believed that Brooklyn taxpayers can better afford to pay for these increased facilities where necessary in the older parts of Brooklyn than to bear their pro rata part in the fifteen to twenty-million-dollar assessment that will be required in Manhattan in the next few years.

Ample provision for drainage by way of large combined sewers with a double system of sewers, one for sanitary flow and one for surface drainage, has been made in the outlying sections from Bay Ridge and Bath Beach, through Coney Island, Sheepshead Bay and Flatbush, and easterly to East New York. Property owners in these localities ought not to be called upon to bear the tax burden of rebuilding old systems which originally were inadequate to the demands.

Through liberal planning and a vigorous construction policy Brooklyn has extended her drainage and sewerage facilities until she has now nearly 1,100 miles of sewers, the greater part modern, and amply able to meet the demands that will be made upon the system. The Chief Engineer of the Bureau of Sewers, E. J. Fort, is recognized as among the few leading authorities, if not the chief of them, who have studied and perfected modern drainage methods, and, we believe, he has solved the question of the most suitable and up to date methods of sewage disposal for Brooklyn.

Modern Sewage Methods.

For upwards of two years we have tested the most modern type of screens, sedimentation tanks and methods of filtration, and this borough was almost the first of the municipalities of the country to introduce and experiment with certain devices that heretofore had only been used in foreign cities. The early authorization and construction of disposal works along all our water fronts will set the pace for the entire city in this line of work and be creditable evidence of the progressive methods of our borough administration and a monument to those in charge of our Sewer Bureau.

The Bureau of Buildings demands special mention. This bureau, through the able administration of Commissioner P. J. Carlin, has given greater satisfaction affecting the great business of building and rebuilding than the borough has ever known. The business interests depending upon the work of the men in this department affect the upbuilding of the entire borough. Through legislation obtained last winter, inspections have been centralized, not in a city-wide department, but in the Building Bureau of each borough. Putting into effect the new zone districting and use of buildings resolution has added greatly to its responsibility. Late decisions of courts and rulings of the Board of Appeals, under the new districting law, have been giving more and more to the Bureau of Buildings of the boroughs.

Building Situation.

Brooklyn issues more permits than any other borough. The number of permits and the total cost of buildings has fallen off slightly this year. The first half of the year exceeded the same period for the last several years, but, through the high cost of materials and the difficulty of obtaining mechanics, the last half has not been equal to the first half of the year; hence a slight decrease in the volume of business passing through the Bureau. Remarkable success is apparent through the centering in this bureau of the various activities here referred to. Only the best of organization and close attention to and study of details has prevented confusion. Through the perfection of the work of this bureau orderly and substantial building and a great saving of time and lessening of vexation on the part of builders, architects and property owners are sure and permanent results.

The important work of the Topographical Department has carried forward the great engineering features of the Borough. The handling of public improvements calling for changes of grade, laying out of streets, and completing the mapping of the borough have progressed satisfactorily. The new work of completing the map and plan of our Borough through this bureau is nearing completion. The relocation of streets and the study of planning will always be an important part of the Borough's work. The many new features continually being adopted by the Board of Estimate and Apportionment necessitated detailed work and perfecting of the plan through the Topographical Bureau. Much additional study on the ocean front and the preservation of our beaches has been carried on by this department.

The Substructures Bureau is progressing with its work of mapping and adjusting structures below the surface of the ground. The bringing into the Borough of the vast system of subways and of new watermains has shown the value of this bureau. Here again Brooklyn is in the advance of other boroughs in an orderly placing of the subsurface structures, and many an important saving has been made through the complete mapping of what has been built in the past years and a more scientific adjustment of such improvements as they are now being made. In one particular alone the city saved more than $10,000 in the last year through the work of this bureau.

In our Bureau of Public Buildings and Offices Superintendent Lewis M. Swasey has made manifest the result of his familiarity with municipal affairs. Some twenty buildings under his department, together with the purchasing of supplies for most of the borough bureaus, make this an important part of the borough administration and the work of his office affects the comfort of those who frequent our municipal offices, our courts, our public baths and all the buildings and places which come under the Borough President. It is a department of much detail, but is now upon a most satisfactory working basis.

New improvements demanding large financial outlays have been denied all the boroughs during the last two years. The city is beginning to realize that its financial ability was overtaxed in the laying out of our subway system. This has necessitated the curtailment of many improvements almost imperative in their character. The rebuilding of our County Court House has been a subject of much concern to this Borough. The difficulties encountered have thus far been met, and it is the expectation that within the next few weeks the final contracts will be put into effect, and a rebuilt County Court House will, during the coming year, take the place of the present inadequate and unsanitary structure. This building is not designed to take the place of a new court house so imperatively needed, but with a moderate outlay will be put in physical condition to meet the demands that will be made upon it even after the new court house is provided.

A new Children's Court is imperatively demanded in Brooklyn, and by the first of the year authorization of plans for the building of this Children's Court is expected to pass the Board of Estimate. We hope to have a structure comparable with the modern Children's Court opened in Manhattan during the past year. This institution will mark a further advance in the solving of the great social problems crowding upon the city administration.

A distinct advance has been made during the past year in providing a modern, up-to-date Magistrate's Court on the Williamsburg Bridge plaza. The remodeling of the Williamsburg Trust Co. Building, purchased by the city, has been completed, and it is recognized as to some extent meeting the great necessity for additional modern buildings for our lower courts.

The borough administration has interested itself in obtaining authorization for building one wing of the magnificent public library building at the junction of Eastern parkway with Prospect Park. Bids have been received, but, owing to the increased cost, an additional appropriation must be obtained. Fortunately, only about $25,000 to the $210,000 al-

(Continued on Page 152.)

PARK SLOPE SECTION OF BROOKLYN ON EVE OF IMPORTANT MOVEMENT

By CHARLES E. RICKERSON

PARK Slope, fed by the Fourth avenue subway now in operation, the Interborough and Brooklyn Rapid Transit systems, and the Seventh avenue subway on Flatbush avenue now being constructed, will be one of the accessible districts in Greater New York from the transit standpoint. The section, however, has other advantages besides its accessibility. It is adjacent to the greater part of Prospect Park, having an altitude of 100 feet to 167 feet above the sea level, a condition which has been the principal factor in encouraging the construction of high-class one-family dwellings. These houses combining the most modern details of private house construction have given the occupants the same improvements that they would have in the up-to-date apartment houses, such as electricity, hot water heat, parquet floors and two and three baths.

This type of construction has been largely responsible for the present character of the neighborhood which has attracted many representative merchants of New York, and which is encouraging others to join in the erection of new and similar houses. This development was protected from the very beginning by the Litchfield Estate which refused to permit the invasion of multi-family houses in blocks where one-family houses of considerable value had already been built. As a result the residential character of the Park Slope has been well preserved, and there now remain only a few desirable plots available for improvement with private dwellings, and a few corner plots on the market for apartment house construction.

The Eastern Parkway section of the Park Slope or that district in the immediate vicinity of the Museum of Arts and Sciences has experienced during the past year considerable apartment house building, because of the fact that the subways are now in construction on Flatbush avenue and on Eastern Parkway. Lack of modern apartment houses west of the Park has also been apparent, since most of the buildings of this type have been four-story buildings arranged in suites of three, four and five rooms and bath, housing sixteen families, at rentals from eight to ten dollars a room. A six-story elevator apartment house containing seven and eight-room apartments with bath, and another arranged into two, three, four and six rooms and bath, have also been erected in this section. The latter house has just been completed on Eastern Parkway, opposite the Museum and has met with success. There still remain on Eastern Parkway desirable plottages especially adaptable for large elevator apartment hotels or small housekeeping apartments, which are needed in this part of Brooklyn. The excellent demand which now prevails for this kind of space and the additional impetus which will be afforded by the progressive subway construction, will warrant a good return to any builder who undertakes this sort of a project.

The entire Park Slope section offers many advantages for residential occupancy, and contains practically all of the educational, social and religious elements necessary for the upbuilding of any community. It offers to its residents not only the splendid Museum of Arts and Sciences, but also fine church edifices of various denominations, public, private and high schools, and the Riding & Driving Club and the Montauk Club. To these will soon be added the main public library to be constructed at the Park Plaza.

The autumn season, just closed, has been one of the best in many years for both one-family private houses and apartments. Many dwellings in the streets near Prospect Park West, which have been vacant for more than a year have found desirable tenants at good rentals, and the demand still continues for new three-story houses. Many rentals and sales have been made at advances over other seasons. One interesting feature in connection with the sales market of private dwellings has been the interest shown by out-of-town residents. The reduction of the mortgage rate from 5½ per cent. to 5 per cent. on fifty and sixty per cent. loans in this section, has also been an influencing factor toward a revival of activity, and this situation will probably continue to attract new capital and new residents to this part of the Borough of Brooklyn.

CHARLES E. RICKERSON.

I believe that the Zoning Resolution is the most valuable and constructive development affecting real estate in a long time. I have always felt that no damage should be permitted to high-class business or residential property of an already established character by the invasion of undesirable buildings inconsistent with the surroundings. Factories and garages should not be built in blocks where surrounding property would be damaged by their construction. I believe that there should be a revision of the Tenement House Law, so that a three-story dwelling might be converted without legal interference into a three-family house. These houses have an average depth of from forty to fifty feet and enough light and air in the yards, so that in my opinion no harm would be done if they were altered.

The outlook for 1917 appears to be very promising. I believe that when the war is over real estate will have a bigger boom than ever before.

BROOKLYN MORTGAGE MONEY RATES ARE EASY, DUE TO PRESENT SUPPLY

By JOSEPH T. McMAHON

IN singular contrast with the cost of commodities in general those persons whose business takes them into the mortgage market find that money is not held at so high a price as one might expect. This is due to the law of supply and demand. There is an unusually large amount of money available for mortgages and a corresponding shortage of desirable applications for loans.

With this condition existing the borrower, who is usually pretty well posted with reference to the condition of the money market, is surprised to learn that rates of interest have not been lowered even more and that lending institutions and individuals are not bidding against each other by offering to loan a larger percentage or by reducing the rate of interest. While rates of interest are lower than they have been, when the prevailing rate was 5½ per cent, they are by no means as low as they were in 1904 and 1905, when the institutions didn't have as much money to loan as they have at the present time. This condition seems to be explained by the plethora of gilt edge liquid investments which other investment fields offer and by the tremendous depression there has been in real estate.

For instance, the man who bought a home or building for investment some years ago for $10,000 and borrowed $6,000 on it is surprised when he is forced in these times to renew his mortgage for $4,500, not realizing that his property has depreciated in value and that he is getting a liberal loan on present values.

Both borrowers and lenders on this side of the bridge seem favorably disposed towards the plan for amortizing mortgages. Lenders generally regard the plan with favorable eyes, and the borrower, especially if the loan is an original one, has a tendency to regard the amortizing as a benefit. In the case of renewals on home property I imagine that the borrower is apt to regard paying off so much per stated period as somewhat of a hardship when the plan is first broached to him, but the prospect of paying off a little at a time, especially when the opportunity is given for monthly payments just so soon as the borrower can adjust himself to the circumstances, is made a part of the month's overhead charges and the prospect of eventually paying off the entire mortgage in this way is regarded as a happy one. With the business establishment or the factory, amortizing the mortgage is perhaps looked upon in the same light as putting aside stated sums for the carrying of one's own insurance. It is a good proposition, a sinking fund as it were, and is good business.

There do not seem to be any general restrictions against localities so far as loaning money on mortgage is concerned. Of course the favorite sections are along the lines of transportation. In the growing sections of the Borough of Brooklyn there is a steady demand for mortgage money and it is not difficult to obtain it.

The additional means of transit already provided and to come in the near future make the outlying sections a good field for mortgage investment. I think the new Zoning restrictions will have a good effect on mortgages. The tendency is to stabilize. Where residential districts are definitely prescribed lenders will have no hesitation in making loans. I think the tendency is to encourage factory building in Brooklyn and at the same time to incline sentiment towards the construction of one and two family houses of the smaller types to accommodate workers resident in the borough and the general tendency wuld seem to be a desire to loan money on these dwellings rather than upon tenement properties. The three-story and basement brownstone and brick dwelling house seems rapidly to be losing its demand.

Why Cities Run Into Debt.

There are in the United States 204 cities with a population of more than 30,000. Last year the revenues of these cities did not come within $140,000,000 of meeting the costs of city government and other outlays. The deficiency amounted to just short of four and a half dollars for every person dwelling in these large towns. No one has ever yet risen in defence of American municipal thrift as we see it practised. Our cities are governed wastefully, and the taxpayer pays on the average a high price for everything which his local government gives him.—Philadelphia Public Ledger.

WHAT THE BUSH TERMINAL MEANS TO BROOKLYN'S WATERFRONT

ONCE upon a time, so the story runs, a certain King was skeptical of the wisdom of his wise men. So he bundled them into a chamber, locked the door, but left the windows unlatched, and told his philosophers that they would have to find a way out. As was to be expected, the sages gave their minds to heavy pondering, and for days strove to formulate by abstruse processes just how it would be possible for them to free themselves.

Finally, just before they were physically exhausted, a kindly courtier called through the keyhole of the bolted door: "Why not try the windows?" Liberty was theirs at the cost of a modest push. Common sense got them out of their difficulty. All this, of course, is playful fiction, but there is a spectacular fact right here in our midst that shows how other wise men err while the man of enterprise and initiative works an industrial revolution.

The story is not a new one, but the lesson is everlastingly fresh, and to the man interested in real estate the moral of it should never be neglected. It is pertinent now when this great Port of New York must be made fit for long years to come, and every effort should be brought into play to insure our grip upon the trade we have won during the past two years, particularly. It is a matter of arming ourselves commercially against the competition of the world, and efficiency in equipment and the best uses of our water front and contiguous areas must be called to our aid.

At twenty-one years of age Irving Bush held a deed from his father to some scores of sand lots on the Brooklyn shore scarcely more than a mile from the crowded docks of Manhattan. An idea came to him: Why not turn that unprofitable stretch into piers and terminal facilities for shipping and all sorts of industrial activities. In short, why not find a way to financial independence out of those barren sand lots, and, at the same time, draw to that point traffic from the length and breadth of the country and from across the seas? The Bush Terminal of to-day is the present climax of that idea. The wise men of the great railroads all laughed at him; the sages of business shrugged their shoulders indifferently and dismissed young Bush from their thoughts; but common sense told him that he was right, and he realized he had only to push open the windows that hedged in conservatism to create a plant that would become a model of its kind. It is doubtful if the average property holder stops to analyze the set of the tide in such matters.

There was a time when locations for industrial enterprises were chosen primarily because of the nearness to water front facilities. A gradual change altered this movement, and to-day we find the demand is for sites where rail facilities are at hand. As an illustration of this point, the Twelfth Ward of Brooklyn is particularly interesting.

VIEW OF BUSH TERMINAL SHOWING WATERFRONT DEVELOPMENT.

As is well known, this ward comprises the property lying back of the Erie Basin and the Hamilton Ferry. In the early days when manufacturing industries began to locate in Brooklyn, this section was a favored one. The property was not expensive, being just on the outskirts of Brooklyn as the city then existed, and the neighborhood was within ready communication with Manhattan by way of the Hamilton Ferry. A number of the important manufactories in Brooklyn located there, and in time it became perhaps the best recognized industrial section of that city. The buildings were situated near the waterfront or within easy carting distance of it.

Competition had not then developed to such an extent that facilities where shipments could be made and received without cartage were considered necessary. No one else had direct rail connection. When a manufacturer chose a site for his plant, any place near the waterfront where he could get delivery by barge was the thing desired. For a number of years the Twelfth Ward grew.

Then came the time when the Havemeyers established what was known for years as the Palmer Docks. They are now called the Brooklyn Eastern District Terminal. They offered facilities where rail shipments could be made by any road from the Union Terminal. That section of Brooklyn immediately began to develop while the Twelfth Ward fell behind. New factories ceased to locate there, and one by one concerns already established in the Twelfth Ward began to move away to places where they could have rail facilities. A point was reached in the course of years that marked well-nigh the desertion of the erstwhile popular region contiguous to the Erie Basin and the Hamilton Ferry.

Since the establishment of the terminals that are now owned by the New York Dock Company but little in the way of a revival has taken place. And yet if one will but walk or ride through the vacant property back of the Erie Basin, it will be apparent that within a short distance of New York City's City Hall there lies a territory which might be described as one of the waste regions of Greater New York. Surely, this is a matter for serious reflection, and it is certainly within the gift of some of those most interested to see that these valuable holdings are made really profitable.

IMPROVEMENTS MADE DURING 1916 IN THE BOROUGH HALL SECTION

By WILLIAM P. RAE, President William P. Rae Co.

THE Borough Hall section may well be characterized as Brooklyn's office building center. The new tubes under the East River are fast nearing completion and will add materially to the accessibility of the district; also the new subway stations, which will provide connection with stations serving the Heights, will fill a long needed want for that fast growing hotel and apartment house section, thereby serving the Hotel Bossert, St. George Hotel, the Margaret and many other large apartment buildings erected within the last few years; also the various clubs, such as the Crescent, Brooklyn and Hamilton. The new building of the Brooklyn Trust Company, adjoining the Peoples' Trust Company building, that was erected a few years ago in Montague and Clinton streets, and the alterations made to the Real Estate Exchange to house the Hamilton Trust Company, will further tend to hold Montague street as the financial street in this section.

Many changes have taken place in Remsen street, and practically the entire block between Court and Clinton streets is now taken up with office buildings. About the only old-time residence left still unchanged is the three-story stone house adjoining the Lawyers Title Company, formerly occupied by Hugh McLaughlin, long-time Democratic leader of Kings County.

The old Phenix and Garfield buildings in Court street have undergone some changes and remodeling, which have added to the attractiveness of those old buildings, and the Dime Savings Bank has announced that it will erect a twelve-story office building at the corner of Court and Remsen streets. No doubt they have been encouraged by the fact that all of the large office buildings in this section are well filled.

WILLIAM P. RAE.

One of the important changes that will soon take place will be the removal of the Polytechnic Institute for Boys, to new new quarters, now in the course of erection at Dyker Heights. The acquisition of the balance of the block from Washington street to Adams street, by the United States Government, to provide an addition to the Brooklyn Post Office, will take away the Universal Building and Columbia Theatre and they will become memories of the past.

BROOKLYN BOARD OF BROKERS ACTIVE IN REAL ESTATE FIELD

By WILLIAM P. RAE, President.

THE Brooklyn Board of Real Estate Brokers was organized and incorporated in the year 1905, and its membership is made up of the representative real estate brokers of the Borough of Brooklyn. Its management has been under the guidance of a Board of Directors consisting of fifteen members, and the various committees made up of the members of the Board throughout the different sections of the borough.

The activities of the Board during the past year have been felt and recognized in the real estate profession and also been well recognized by the various members of the Board of Estimate and other city and State bodies wherein the Board has taken action on important matters affecting public improvement.

All bills presented in the Legislature as well as proposed public improvement in the Borough of Brooklyn have been discussed and action taken for or against, with the presentation of the views of the Board before the governing bodies of the city and State.

The Board was one of the first to recognize the great work being accomplished by the Commission on Building Districts and Restrictions, and Brooklyn was divided into thirteen sections with a separate committee conversant with conditions in each district, and the board was represented at the several hearings before the Commission and co-operation was given to this important measure.

The Board is represented by a committee on the question of New Jersey freight rate and presented a petition to the Interstate Commerce Commission, which hearings are now about to be held, and has employed special counsel to represent the board before this Commission, in the hope that due recognition will be granted to the large interests along the Brooklyn waterfront and maintain the prestige that the Port of New York deserves to safeguard its interests.

The Board has been active at all the conferences in the endeavor by all of the real estate interests in Manhattan and Brooklyn to bring about a change in the Tenement House Laws, whereby the three-story private house may be utilized for more than one family, as it is well known that in Manhattan as well as Brooklyn, the three and four story private house, which was popular in the past has long become a puzzle as to how to secure desirable tenants when so few can be found in the general changes that have taken place within the last ten years or so by the erection of modern apartment houses, which seem to appeal more to housekeepers than the private dwelling.

The above and many other matters wherein real estate in general has been attacked by over-supervision in the Tenement House Department, Building Department, and the various other departments have received the attention of the various committees of the Board Following the annual meeting held in November, a change in the by-laws was adopted to permit of associate members, with the object in view that with a stronger combination of the real estate owners united with the Board in a greater effort to bring about co-operation, city officials and the State Legislature might better understand and appreciate that real estate, bearing as it does the greater burden of the cost of government, should be more encouraged and not hampered with the various conflicting supervision of not only new but old buildings, and the annoyance to property owners, and might lessen the cost if possible of taxation direct or indirect, which to a large degree is more or less responsible for the inactivity of real estate during the past few years.

APPRAISING REALTY A PROFESSION

Each Property Unique In Itself—Experience of Appraiser Absolutely Necessary

By THOMAS HOVENDEN, Chauncey Real Estate Co.

APPRAISING real estate should be a profession. Its application and the ability to apply should be the result of close attention to and study of a subject that cannot be comprehended in a short period of time. Years of contact with any subject must result in an inherent or intuitive knowledge of that subject, provided always that one is apt to learn, has a desire to, and does. Years of association with real estate brings that knowledge and that belief necessary to equip one to appraise realty. The ramifications of real estate are vast and many of those things seen and observed are often incomprehensible. Witness the changes made in many localities, both city and country. The ups and downs are often amazing and yet most of those changes come more or less slowly; usually so slowly that they are not properly observed or comprehended and thus mistakes are made by appraisers and will continue to be made. "It is but human to err," after all. A successful operator once told me that an appraiser is a man who makes no money in real estate, he being a pessimist and not an optimist; optimism being necessary to make a success as an operator.

Many methods obtain among the many appraisers, but in the final analysis the value of a given property is the conclusion and opinion of the appraiser. This opinion is based upon his individual knowledge, direct and intuitive, and the more knowledge he has absorbed in his years of work the better that opinion, and the more weight it should carry. It is not possible to value or appraise solely upon one or more sales of nearby properties. Conditions vary as do property. Practically every sale has its own particular or peculiar environments.

I have known appraisals to have been made based upon one sale in the immediate vicinity. If one sale is a criterion of value then how apply an example such as the following: Some few years ago I sold a property for $6,000 for an executor of an estate who insisted upon a quick sale to close out and accepted the first offer made to him. Within a few months I resold this same property for $7,000, $9,000, and the fourth and last time for $12,000. Given the estate sale of this property at $6,000, this being public knowledge through recorded deed publishing the consideration, where would the appraiser be who had no subsequent knowledge of the resale of this parcel at an advance of 100 per cent. more than its first sale price?

Some years ago certain big lending corporations took auction sales as their guide for values and it was not uncommon to have a residential block with values approximating $18,000 to $20,000 marked in the $10,000 class through one foreclosure sale where the house was bid in by plaintiff, upon the first bid, taking a deficiency judgment with it; but the published sale at $10,000 marked that block for a very long time. Fortunately we have largely outgrown this condition, though such sales will always have more or less ill-effect upon nearby values.

We have constant changing conditions in our big cities and these constant changes bring variable values. Congestion makes values, relieve that congestion too much and values are materially reduced.

We cry for more and better transit continually and in getting it we build up the outlying sections partially at the expense of the mid-town sections, and while outlying properties enhance in value the mid-town values recede.

Building material and labor costs go up, and land values recede with those advances, if they are very marked. The advances of the past year or two have materially reduced land values. One well known appraiser has estimated this recession in land values in this city in the past two years at upward of $100,000,000 and he claims he can prove it.

These conditions and changes are interesting and amazing and it is hard to attempt to comprehend all these phases of a subject which is an art and a profession and not appreciated by the layman.

The life of a tax assessor is not an easy one and it is not his desire to impose an unjust burden upon the property owner. He is seeking to do his duty justly and fairly by all as he sees it; but how can he appreciate and know all, making no mistake, when he deals with hundreds of parcels in a few weeks' time, and cannot grasp or appreciate some of the changes that come, making for appreciation or depreciation, as the case may be; these changes coming often so slowly as to be not appreciated until the actual loss is only too apparent; depreciation always coming more slowly than enhancements do.

The depreciation in private house values is probably more marked than in any other class of realty. Many things have tended to bring this change about; servants; houses too large for present day families, better transit to suburban or outlying districts, and the automobile. The automobile is a wonderful machine, but it has injured city real estate values materially.

Columbia College.

Columbia College was chartered as King's College on October 31, 1754, and its unusual growth has been coincident with the development of the city. Rev. Samuel Johnson, of Stratford, was the first president and, in the beginning, the sole teacher. The first term was begun rather modestly in the schoolhouse belonging to Trinity Church, with eight students in attendance. Later, college buildings of a more suitable nature were built on land acquired on the west side of Broadway, between Barclay and Murray streets, and in 1760 possession began to be taken of the new quarters.

In April, 1776, the classes were dismissed, upon the outbreak of the Revolution, most of the students having become active on one side or the other, and the college totally suspended its activities. The sessions were reopened in 1784 and the name changed, for obvious reasons, from Kings College to Columbia College. The scope of work was largely increased and the new board of trustees began a new era. Completely reorganized, the college began work on May 19, 1784, with De Witt Clinton as the first student to enroll. Additional buildings were added in 1820 to meet rapidly increasing needs.

In November, 1856, the trustees determined to move uptown and acquired a large tract on Madison avenue, between 49th and 50th streets, then occupied by the Institution for the Instruction of the Deaf and Dumb. The buildings already on the property were available for college use and possession was taken in May, 1857. Additional buildings were erected from time to time, until by 1890 the institution had so outgrown its quarters that a new and larger home became imperative. In 1896 work was begun on the new and present Columbia College buildings on Morningside Heights. The building plot comprised about seventeen acres and the total cost of the project, at the time, was estimated at close to $2,000,000. The college grounds and buildings today are among New York's most notable architectural and structural achievements.

OPPORTUNITIES FOR BUILDERS TO INVADE BEDFORD SECTION

By GEORGE S. HORTON, of Bulkley & Horton Co.

THE Bedford section is that part of the Borough of Brooklyn which was originally known as the town of Bedford, settled in 1663, and was one of the original towns which formed the village of Brooklyn in 1816, and later the city of Brooklyn in 1834. The word Bedford probably comes from an English word of that name. Arnsbruster says "that it may have been Anglicized from Bestevaar, i. e., Grandshire Place." This section covers a large area in the heart of the Borough of Brooklyn and is one of its largest residential sections. Today the assessed valuation represents $65,478,380, and is continually increasing each year.

Numerous trolleys and three elevated and subway lines make the transit facilities in the section excellent, and the running time is fifteen to twenty minutes to Park Row, Manhattan.

In certain sections of Bedford the home seeker easily can obtain small dwellings, at an approximate price of $4,250, and those seeking higher class residences can find homes costing from $300,000 to $500,000. Among these latter are some of the borough's most palatial homes.

Today there is a real demand for the moderate-priced home. There exists also a great demand for the modern non-basement dwelling selling for $10,000 to $12,000, but these are difficult to obtain. During the next few years there will probably be a great many of the average three-story and basement dwellings altered into non-basement houses. The leasing of these dwellings has been exceptionally good during the autumn renting season, and so many of the vacant houses are now occupied that few can be obtained. The public is beginning to realize the advantages that can be obtained in a private house over an apartment. Many of these moderate-priced dwellings can be rented at almost the same price as is paid for an apartment of six or seven rooms.

Many apartment houses have been built in the Bedford section. For instance, five rooms and bath, with steam heat and hot water supply, can be obtained for $23. There are few sections in the heart of a city that can offer such an attraction as this. Then again, a modern five-room suite rents from $40 to $110 a month. As I have stated, there exists a real demand for the higher class of apartment buildings containing seven or eight rooms, and three baths, renting from $110 to $200 a month. Many of the families living in a $12,000 to $18,000 house desire to move into apartments of this description. But where can they find apartments of this style? Wake up, builders! Erect structures that will appeal to the demands of these people. The real estate men have the demand; now you builders supply the goods.

A recent canvass taken among apartment buildings in the Bedford section showed that 93.6 per cent. are occupied. Very popular are the three and four-room suites renting approximately for $10 a room. The demand for this class of apartments exceeds the supply. Although the overhead expenses of apartment buildings have increased rapidly during the past year, the rents have remained the same, but in order to overcome this additional increase of expenditures the rents must advance. This probably will take effect during 1917. Such prominent thoroughfares as Bedford avenue, Nostrand avenue, Fulton street and St. Marks avenue pass directly through this section.

Bedford avenue is the automobile thoroughfare of Brooklyn. Many handsome show-rooms have been opened on this artery during the past few years by the leading automobile companies of the country. Lot values on this avenue, especially from Fulton street to Eastern Parkway, have increased 100 per cent.

GEORGE S. HORTON.

during the past ten years. It is almost impossible today to obtain a desirable site in this automobile centre. During the next few years to meet this demand many of the existing apartment houses on this avenue will be altered into automobile showrooms.

Nostrand avenue, from Fulton street to Eastern Parkway, has changed so rapidly that the Brooklynite who has been away from his native city for a few years will on his return think that he is on the wrong avenue. Nostrand avenue is to the Bedford section as 125th street is to Harlem, the centre of business activities. Lot values have advanced from $3,500 to $10,000 a lot. The buildings contain a store and two apartments, sell for $17,000, and the stores rent from $83 to $100 a month. The apartment averages $33 each.

Fulton street, which is probably Brooklyn's longest street, and enters the heart of this section, contains many shops and stores. Lot values have not advanced during the past ten years as rapidly as those on Nostrand avenue. The majority of the buildings contain a store and three flats above selling for $14,000, stores renting from $65 to $75 a month, and the flats average $18. Values near the corner of Nostrand avenue have increased tremendously during the past three years, and stores are renting today for approximately $200 a month. Few vacant stores can be found on this street.

St. Marks avenue, which contains some of the finest homes, has often been called the "Garden Spot of Brooklyn." Among the finest residences are those of the late Abraham Abraham, of Abraham & Straus, now occupied by J. N. Wallace, president of the Central Trust Company, and the residence of the late Clarence Seamen, former president of the Remington Typewriter Company. Directly opposite this residence is the home of Ludwig Nissen, and at the corner of New York avenue is the dwelling owned by Frank S. Jones, president of the Great Atlantic and Pacific Tea Co.

INDUSTRIES IN GREENPOINT ARE IN THRIVING CONDITION

By CHARLES L. GILBERT, of Noah Clark, Inc.

CHARLES L. GILBERT.

GREENPOINT is essentially an industrial center and practically all of the recent activity in this section of Brooklyn has affected land and buildings, devoted to manufacturing purposes of various kinds. The reason for growth along these lines may be logically traced to various factors. The proximity of Newtown Creek affords excellent facilities for shipping by water, and the Eastern District Terminal at the foot of North 5th street also provides adequate accommodation for shipment by rail.

Labor conditions are excellent and manufacturers in Greenpoint have had little to fear in this connection for many years. There has been, and probably will continue to be, a large resident population who earn their livelihood in the neighboring factories.

Among the large firms which have firmly established themselves in Greenpoint are the American Manufacturing Company, the Chelsea Fibre Mills, the Gotham Can Company, the Colonial Paint Works and Behrens & Rothchild.

The new development on Morgan avenue, stretching all the way from Newtown Creek, has experienced considerable activity along industrial lines, and we have recently leased more than twenty-five factories of various sorts to representative concerns, which have either erected new structures or remodeled existing buildings. The Eastern District Dye Works recently took over an entire block on Norman avenue and the American Manufacturing Company have rounded out its holdings, so that it now controls four entire blocks. The same firm also leased the old English property in West street, and built a private pier about 600 feet in length for their own use, an indication that it is in Greenpoint to stay. Eimer & Amend, the Manhattan chemists, have also leased extensive frontages along the waterfront, to be utilized as a site for a new plant. Among the other concerns which have extended their holdings are Eberhard Faber & Co., the pencil manufacturers, and the Wayne County Cider Company.

Important State and municipal improvements that will further strengthen Greenpoint's position as an industrial center will be the completion of the new State Barge Canal and the proposed marginal railroad, which will effectually bind the entire water front of Brooklyn, making it possible for shippers to get into quick communication with other parts of the waterfront, without the trouble and expense of cartage.

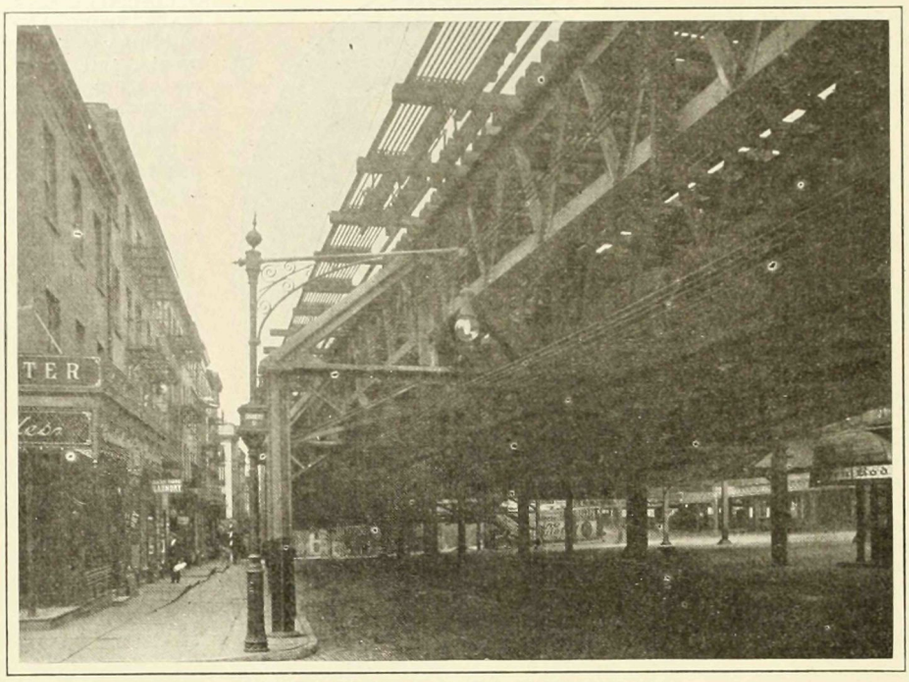
The character of Greenpoint as an industrial district has long been established and there is every indication that it will continue to develop along the same lines and attract new kinds of manufacturers. There still remain extensive frontages along the waterfront and interior plots of considerable size, which are available for factory improvement. For the builder of industrial plants Greenpoint offers an attractive and lucrative field, not only on account of the comparative cheapness of the land, but also on account of its shipping facilities.

DE KALB AVENUE AND FULTON STREET SECTION

Thoroughly Established as Brooklyn's Business Center—Store Rentals High—Investors Obtain Good Investment Returns

THE increases in real estate values and the changes in structural character of the neighborhood of which DeKalb avenue and Fulton street, Brooklyn, is the center forms a new era in the real estate annals of the borough. Store rentals in the part of Fulton street adjacent to DeKalb avenue are among the highest on that famous retail shopping thoroughfare.

That the lower part of DeKalb avenue—a natural thoroughfare—from Fulton street to Raymond street will be transformed entirely for business purpose seems logical and probable. DeKalb avenue leads Brooklyn to its boundary in the Ridgewood section of Queens; and a trolley road that traffic feeds a densely populated part of Brooklyn runs the length of the avenue.



FULTON STREET, AT THE BRIDGE PLAZA.

In recent years the lower part of DeKalb avenue, below Raymond street, has been crossed by the plaza or approach to Manhattan Bridge that extends from Flatbush avenue, Brooklyn, to Canal street and the Bowery, Manhattan. The intersection of DeKalb avenue and the bridge has brought the avenue into greater traffic use and to a degree has relieved the density of traffic on Fulton street adjacent to the bridge, although it has not impaired the business value of the latter street.

The first big movement of property in the DeKalb avenue-Fulton street neighborhood took place about 1889 when the department store firm of Frederick Loeser & Company bought a square block fronting on the intersection and built a seven-story bulding there, to which it removed its business from a point a mile farther down Fulton street. Since that time the Loeser firm has acquired one-half of another square block in the rear of its building for its business uses and have modernly improved part of it; and eventually it will rebuild the rest for department store uses.

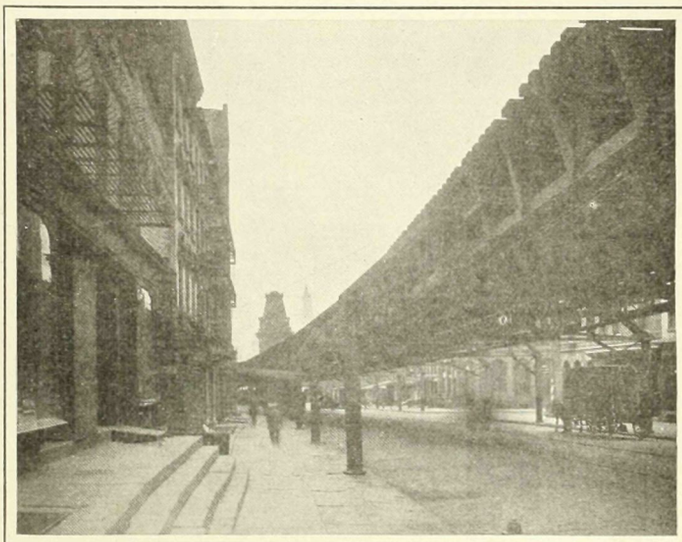
When the Loeser firm came to this part of Fulton street it was a thoroughfare of small stores almost entirely. A large retail furniture store, a prominent clothing firm and an old established carpet firm were the only businesses of large importance. Now the street teems with businesses of all kinds. The two largest five-and-ten-cent store firms in the United States have stores side by side, a large piano concern had its main warerooms there and other prominent business factors have strengthened the trade character of the neighborhood. A large building at the junction of Fulton street and Flatbush avenue that was long occupied entirely by a furniture firm has been subdivided into numerous stores, studios and a restaurant, thereby greatly increasing its earning power. All of the stores are leased. This property is opposite the bridge plaza and is adjacent to the Nevins street station of the subway. The building at Fulton and Nevins street that was long occupied by the former clothing firm of Smith, Gray & Company has been subdivided into several stores; and it is one of Brooklyn's very busy corners of traffic and trade.

In Fulton street, and directly opposite its junction with DeKalb avenue, a large commercial building was recently completed on the site of the old headquarters building of the Young Men's Christian Association. This new building, like the old one, has a large "L" in Bond street. The property's commercial value had increased so much that it became too vauable to continue to hold a Y. M. C. A. building. The association got a big price for the old site and has erected a new and larger building in Hanson place, farther uptown and near the Long Island Railroad station.

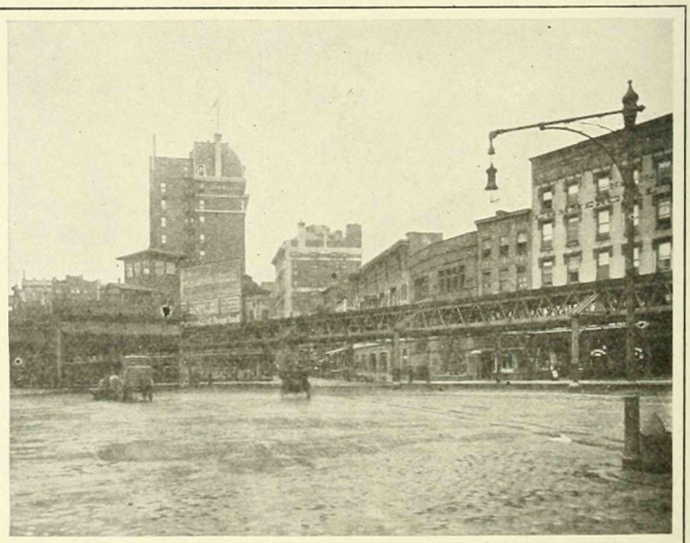
So greatly has the traffic and business strength of the DeKalb avenue-Fulton street neighborhood augmented that a few years ago the Brooklyn Dime Savings Bank bought a large plot covered with antiquated buildings at DeKalb avenue and Fleet street and reimproved the plot with a white marble banking house that is one of the architectural ornaments of the Borough. The coming of the bank to this neighborhood tended to rehabilitate property in Fleet street and Gold street that open into the square at DeKalb avenue and Fulton street; and it also added to the business importance of the DeKalb avenue block the bank is situated on.

There are two old frame dwellings and some factory buildings on DeKalb avenue just east of the bank building which are destined either in whole or in part to form a site for a modern commercial building of some kind. Lower DeKalb avenue, west of Raymond street, is too closely identified with the active part of Fulton street nearby to long remain an aggregation of antiquated buildings. Hudson avenue, from DeKalb avenue to Fulton street, too, is destined to change from a block of tenement houses to business buildings by the sheer force of commercial contact with the busy part of Fulton street; and lower DeKalb avenue is in the same environment. As Livingston street, immediately paralelling Fulton street on the south, has become a business street so must lower DeKalb avenue immediately to the north of Fulton street undergo great change toward the better. It is so situated as to eventually bring it about. The row of old stores and offices on the first block of DeKalb avenue, west of the bank, rent more steadily and have greater rental power than they formerly had. This indicates how the wind blows.

Few other sections of Brooklyn have better real estate outlooks or are in healthier conditions than the DeKalb avenue-Fulton street district.



FULTON STREET, NEAR FULTON FERRY.



FULTON STREET, AT CLINTON STREET.

$18,000,000 FOR NEW BUILDINGS IN QUEENS

Borough Improvements Keeping Pace With Growth—Maps Covering Six Thousand Acres Have Been Approved and Adopted

By MAURICE E. CONNOLLY, President, Borough of Queens

THE Borough of Queens in 1915 laid, repaved and resurfaced fifteen miles of pavement; it has built sixteen miles of sewers; it has spent approximately $1,800,000 for permanent improvements for the use of its people. Maps covering about six thousand acres have been approved and adopted. Rapid transit lines have been extended and about 13.7 miles have been completed. Building operations during 1916 have increased tremendously and amount to approximately $18,000,000.

Of these improvements, which I have summarized above, the most important from every point of view is the work done in the construction of sewers, as apart from all considerations of health and comfort of the present residents in the sparsely settled sections, building operations of any magnitude are impossible in the absence of sewers.

During the past year the great Corona trunk sewer, which was practically all tunnel construction and which will drain approximately seven thousand acres, has been almost entirely completed and the construction of a number of important laterals, draining sections where conditions were becoming intolerable, owing to lack of sewerage facilities, can now be advanced to connect therewith as rapidly as necessary authorizations are obtained from the Board of Estimate and Apportionment.

The trunk sewer in the Maspeth section is under construction and is approaching completion. Consequently, this important part of our borough will, in the near future, have the advantage of sewers and be relieved from a condition which was not only a menace to health, but a prohibitive barrier to the industrial development which the natural advantages of the territory warranted.

In other sections of our borough, notably Ridgewood, Woodhaven, Richmond Hill, Flushing, etc., lateral sewers have been constructed to connect with the trunk sewers which had been completed within the past two or three years, thus affording the taxpayers an opportunity to derive a direct benefit for the assessments they had paid for the construction of the trunk sewer.

All public improvements hinge on the question of final maps of the section desiring the improvement, as in their absence no petition can be adopted by the Local Board without a final map of the locality no matter how urgently it may be needed, or how unanimous the public in the neighborhood may be in demanding that the improvement, for which they will have to pay, be immediately constructed.

Within the past four years our Topographical Bureau have been diligently at work on the surveying and mapping of the numerous sections of our borough which had been neglected prior to that time. As a result of their efforts the entire borough has now been either finally or tentatively mapped, the tentative map of the last remaining section, some six thousand acres, having been approved and adopted a few months ago.

The City of New York has invested nearly $200,000,000 in new subways and elevated extensions. A large part of these lines run through and out into sparsely built up sections. To make this a wise investment the city must get its return through the additional taxes obtained by developing the country adjacent to these lines. I am endeavoring by every possible means to bring this about by the construction of sewers and street improvements where needed to make building operation possible, increased valuation following as a corollary.

This Administration is using all the energy possible to promote the proper growth of the borough by developing it along the lines of an approved plan as regards the water front, the park system, an adequate street layout with transit facilities and the installation of the necessary sewers and drainage, and providing permanent street pavements.

HON. MAURICE E. CONNOLLY.

Local improvements have been advanced with a due regard to the individual property owner who has to pay most of them. This Administration has not urged assessable improvements where the cost would be prohibitive and out of all proportion to the benefit to be derived and paid for by the adjacent property owners. It is not my purpose or desire to swamp these property owners with assessments that will mean confiscation and in that way a detriment to development.

This borough has five times the area of Manhattan Island and we have but started its development. A progressive, constructive policy administered, not haphazardly, but along well defined business lines will mean much to Queens and bring to it, in the not far distant future, all the benefits to which its natural advantages entitle it.

NECESSITY OF FIREPROOFING A HOUSE BUILT IN SUBURBS

By ALFRED C. BOSSOM

THE term "country house" is intended to mean the larger homes that are now being built around New York on Long Island, in Westchester County and in New Jersey, and it is not intended to apply to what is more the suburban home. The country life of England which is so charming is having its equivalent created in this country and it is in the houses wherein this type of life takes places that the necessity of having a fireproof structure is paramount. As we travel around England and look at the old houses that have stood for centuries, adding to themselves more beauty every year, one is immediately impressed with the invariable fact that the exterior of all of these is made of fireproof material, brick, stone, slate, tile or metal. When they were constructed the knowledge of fireproof floors and partitions did not exist, but today we know better.

Europe's catastrophe, the war, among other things, has caused a great influx of works of art to this country. The possession of these is a responsibility, for we must always realize that these beautiful objects of the past have been owned by others during the life times that have passed, and it is to be hoped they will be enjoyed by those that are to follow, and it is the present owners' duty to see that they are not destroyed.

It is certainly to be hoped that the devastation passing over Europe will never come to the United States, but as far as the pleasure and education of the future generations is concerned it is immaterial, comparatively speaking, to them whether these objects if they have passed away have been either burned up or blown up.

Abnormal conditions during the last two years have caused the accumulation of numberless fortunes here. One of the greatest natural desires when one has acquired wealth or inherited the same is to create a beautiful home and the slight variation between the cost of fireproof and nonfireproof materials is comparatively unimportant.

Certainly very many beautiful old Colonial residences have remained since the Revolution, but an infinitely greater number have disappeared and fire has been the great cause. It is not by any means necessary to eliminate the design of Colonial houses; in fact, it is a style typically American, and for this reason should be perpetuated, but there is no reason that the exterior covering should not be placed upon a fireproof substructure. An owner starting to construct a home, hoping to occupy it during his lifetime and to leave something behind, and in which he intends to place the library he has collected or all the beautiful objects which he has accumulated must realize the importance of safeguarding these as much as possible. These works of art, library or in whatever way the owner's taste may turn, often develop a far greater intrinsic value than the house itself, and the personality of the owner is exhibited often more in his collections than in his residence which is largely the work of the professional artist.

The owner going out in his yacht always expects that the boats are entirely seaworthy, knowing he will have to rely upon himself should danger develop. How often will the same individual build himself a house in the midst of a large estate, often with a curtailed water supply and with construction of a very inflammable nature. Once a country house so located catches fire it is practically certain that it will be destroyed or so damaged as to require rebuilding. How many imagine they are going to be the great exception and think they can live in wooden houses and they will not burn. Unfortunately, this is relying on hope and not upon experience.

The personal risk alone is considerable and the loss of the house and its contents can so readily be accomplished in a few moments. The importance of fireproofing is demonstrated in the fact that no large corporation or manufacturing plant is conducted in anything but a fireproof building.

A committee named to be responsible for the design and construction of a museum who would allow the same to be in anything but a most fireproof building would be condemned out of hand. The same beautiful objects, tapestries, pictures, historic furniture are also to be found in houses. Why are not the same precautions needed in both places?

Landscape garden work and planting with the free use of money can produce remarkable results in a very short period, but as in the old houses in Europe time cannot be eliminated. Often the plant-

(Continued on Page 150.)

An Unusual Opportunity for Brokers and Builders at

MALBA ON THE SOUND

BROKERS will find that many of their most discriminating clients can be quickly and easily suited with modern all-year country homes at Malba-on-the-Sound, "The Suburb in the City."

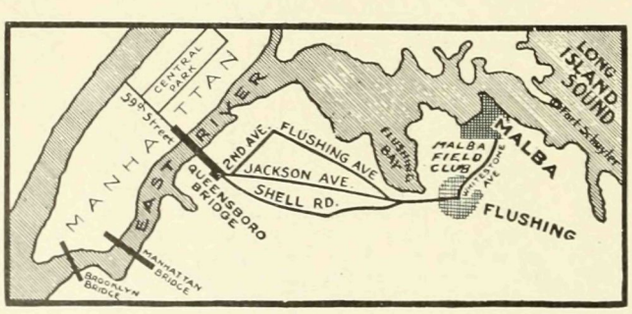
BUILDERS who will conform with the high standard of architecture and construction which now obtains at Malba will find that this development offers the most profitable possibilities of any in Queens Borough—and Queens Borough is the builders' greatest opportunity today.

A FEW FACTS ABOUT MALBA

In Queens Borough, New York City; 12 miles from Herald Square; 25 minutes by direct electric train; 30 minutes by automobile and 40 minutes by water. More than $2,000,000 already invested in land, houses and improvements.

Malba has a charming COUNTRY CLUB, with golf course, tennis courts and trap-shooting facilities, and on the shore front a 700-foot pier with yacht anchorage, landing dock and pier house.

Malba has its own railroad station and is within the belt that government reports designate as being among the most healthful in the country.



Brokers and Builders are invited to write for our special proposition

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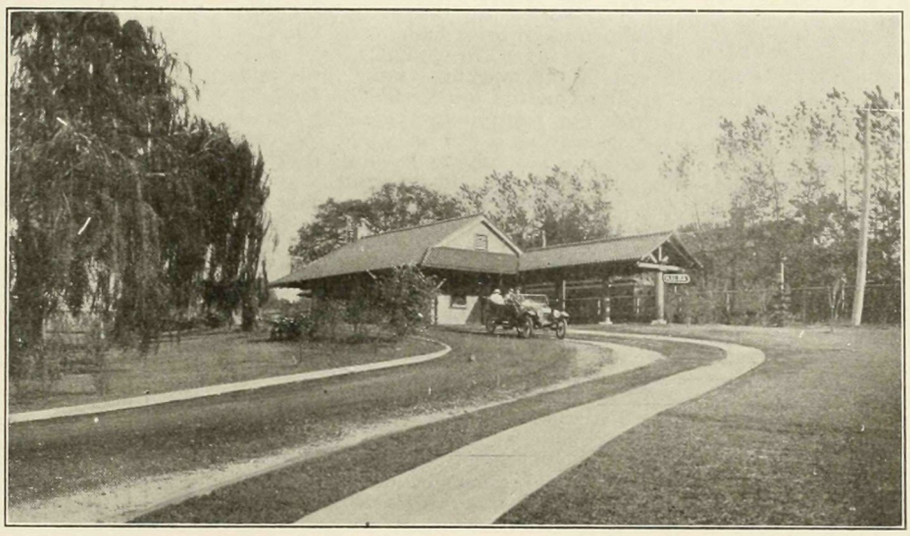
DEMAND FOR WATER FRONT HOMES IN QUEENS

Building Activity at Malba-On-The-Sound Predicates Substantial Spring Market for North Shore Developments

THAT the development of residential colonies on Long Island's nearby North Shore has kept pace with the industrial growth of Queens Borough is evidenced by the large number of inquiries now being received by the various realty interests in that section. An increase of nearly $29,000,000 in the assessed valuation of Queens Borough realty during 1916—a year when only one new important transit line was added—is indicative of what may be expected to happen upon the completion of the Dual subway system, a large part of which will undoubtedly be in operation before the close of 1917. Statistics show that waterfront property in Queens has witnessed an enhancement of from 30 to 40 per cent. during the past five years, due, of course, to the fact that there remains only a comparatively small area of nearby waterfront suitable for high-class residential purposes.



STATION ON LONG ISLAND RAILROAD AT MALBA.

It is a well known fact that Long Island represents an unusually high order of community life, and that its exceptional picturesque and diversified topography, varying as it does within a radius of twenty-five miles from wooded hills to waterfront, is not equalled anywhere else in the world. During the last decade it has increasingly become the custom to maintain an all-year residence in the suburbs, many of our best New York families having gladly renounced apartment house life in favor of the country's more substantial attractions, and consequently to many people the selection of a home nowadays involves little more than the problem of finding suitable suburban surroundings.

Of all the many carefully restricted residential parks on Long Island, Malba-on-the-Sound is distinguished from other home communities in many fundamental ways. For instance, it boasts in one location the unusual combination of a wooded undulating country with a magnificent shore front, at the same time being in New York City, and consequently it has come to be known as the "Suburb in the City."

Malba is in Queens Borough, New York City, twelve miles from Herald Square, twenty-six minutes by direct L. I. R. R. electric train from Pennsylvania Station, Seventh avenue and 33d street, Manhattan, thirty minutes by automobile over the finest of roads and about forty minutes by steamboat, motor boat or yacht. Here is a pleasantly situated bay side community on the high North Shore of Long Island commanding an unobstructed marine view at a point where sound and river meet, and governed by careful restrictions which insure forever a wholesome social atmosphere.

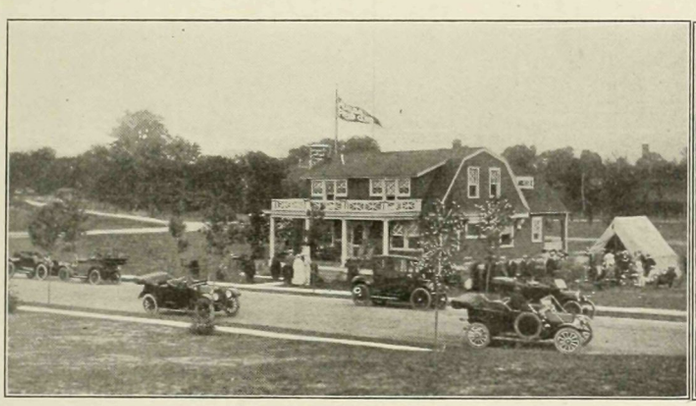
Many costly improvements have enhanced its natural advantages so that today the residents of Malba have at their disposal every modern facility for the enjoyment of both land and water sports. There is a natural land-locked harbor with deep water anchorage, a shore front nearly a mile long, and the waterfront improvements include a modern seven-hundred-foot pier with landing dock and picturesque pier house of stone and timber. On any day hundreds of water craft of every description may be seen passing the Malba pier and the sight of hydro-aeroplanes is not infrequent.

The Malba Field and Marine Club, with its club house and a membership that marks it as an important social center on the North Shore, boasts of fine tennis courts and a very interesting golf course, the links being convenient to the various residences as well as to the railroad station, instead of miles distant as in many other communities. Golf and tennis tournaments are constantly in progress. Trap shooting facilities have recently been added to the sports at Malba.

Prominent landscape architects have contributed their best to the development of Malba, which has been laid out with tree-lined macadamized drives and avenues that wind gracefully between beach front and upland. The customary city improvements have been installed, such as sidewalks, macadamized roads, sewers, gas, water and electricity. Mail is delivered twice daily. Being within the city limits, Malba has of course the regular city police and fire protection. Stores, public schools, high schools and churches are to be found close by, in Flushing and at Whitestone, and the department stores of Brooklyn and Manhattan make daily deliveries.

Malba-on-the-Sound is appealing to people of good taste who desire a private estate, whether large or small, among refined surroundings where an atmosphere of country quietude and privacy can be enjoyed within easy reach of the city's business, shopping and theatre centres. Incidentally, those who have proved it say that the purchase of an all-year home usually produces both financial and sociological benefits. Certain it is that many a family could buy a fine home with the money ordinarily paid as rent and it is likewise not difficult to perceive the advantages to the entire family of an all-year home whereby the periodic and inconvenient "family separations" atendant upon summer vacations are consequently avoided.

Malba is within the belt that Government reports designate as being among the most healthful districts in the country. It is cool in summer, its extensive waterfront giving it great advantages in this respect as well as affording convenient bathing and boating opportunities.



CLUB HOUSE AT MALBA, L. I.

RESIDENCE AT MALBA, L. I.

Malba today represents an investment for land, houses and improvements of more than $2,000,000. Included are large mansions costing $25,000 and more, and also numerous smaller houses at $6,500 and upwards, which, properly designed and located, contribute to a pleasing variety and blend harmoniously with the more stately homes.

Service to Be Suspended.

The Public Service Commission has issued an order abrogating its suspension of the passenger tariff filed by the New York Consolidated Railroad Company recently, which abrogation will have the effect of suspending train service on the Brighton Beach line between Sheepshead Bay station and the new Culver terminal at Coney Island during reconstruction of the line between those points. The cessation of service is necessitated, according to testimony given at hearings before the Public Service Commission, in order to permit the reconstruction to be made. W. S. Menden, engineer of the Consolidated Company, testified that in rebuilding and elevating the line it would be necessary to tear up the tracks over a considerable portion of the right of way between the points in question, and that interference with the present line would be so general that operation over it would be impossible.

PROJECTED RAPID TRANSIT LINE STARTS BUILDING AT WOODHAVEN

By C. L. C. DITMARS

TWENTY years ago a person would say: "I am going to the country, to Woodhaven, Long Island." Ten years ago the same person would say: "I am going home, to Woodhaven. It is out on the line of the trolley from Brooklyn to Jamaica, or I can take a Long Island Railroad train."

By the time another year has passed, and the sun of 1918 puts its head above the horizon, the resident of that part of Queens Borough will exclaim: "Oh, well, I can spend ten minutes more here at the office, as rapid transit trains run to Woodhaven every few minutes."

Rapid transit, with a five-cent fare, will be a reality between Park Row and Jamaica by January, 1918. The road is already built from the terminus of the old Brooklyn elevated road, at Cypress Hills cemetery, east along Jamaica avenue, through Woodhaven to Richmond Hill; and the foundations for the supporting columns of this heavy elevated structure already are placed to Grand avenue in the heart of Jamaica. The structural parts of the road are being delivered. Considerable of a building movement in Woodhaven followed the electrification of the Long Island Railroad, from Brooklyn to Jamaica, in 1908.

Now, with a five-cent rapid transit route nearing completion on Jamaica avenue, and another one under way on Liberty avenue in the southern part of Woodhaven, it is apparent to all property owners throughout the section that the millenium has dawned. The great region in Queens south of "Long Island's backbone," is to be in traffic contact with Manhattan as much as is Bronx Park or Fort George.

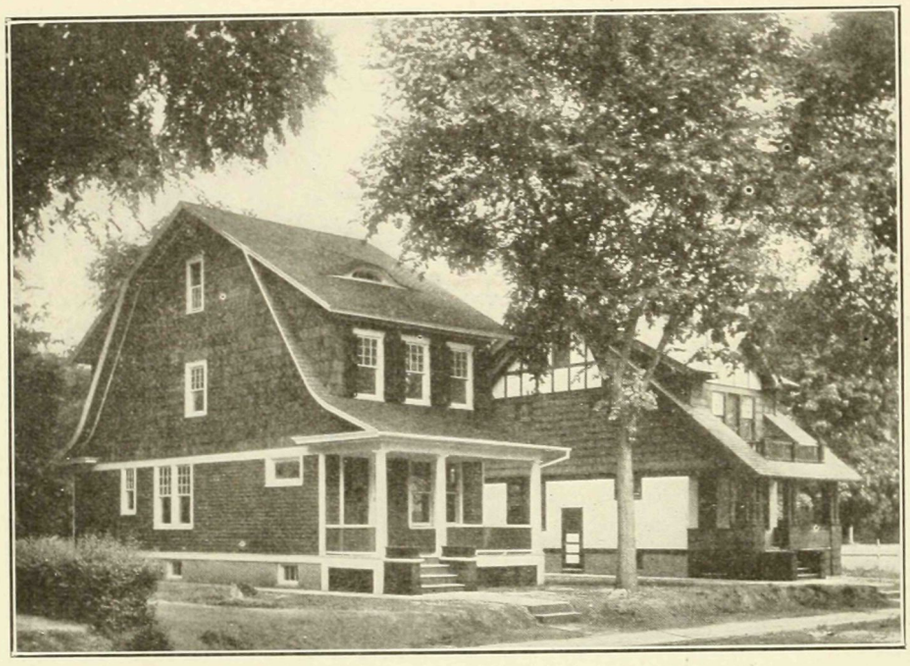
Those who have not visited Woodhaven in several years would not recognize the section. Old mansions with landscape effects surrounding them have vanished and rows of dwellings occupy the sites; and vacant land whose prospective value five years ago was vague is now covered principally with substantial detached houses, designed for single families, and are for the most part occupied.

Jamaica avenue, Woodhaven—which long ago was known as the plank road—is a virile business thoroughfare built solidly with three-story flats with stores.

Woodhaven is a complete structural entity from its northerly boundary at Forest Park to its southerly boundary near Ozone Park. The line of demarcation between it and Richmond Hill, on the east, and Union Course on the west, has vanished. The few old frame landmarks that remain on Jamaica avenue in Woodhaven are obscured by entire block fronts of brick buildings. The last vestige of rural life remaining in Woodhaven is the ancient Napier farm and buildings on the north side of Jamaica avenue close to where the Long Island Railroad viaduct crosses the avenue. The Napier family is holding it tight. Rapid transit will aid its value.

Lots 20x100 feet in size on Jamaica avenue, Woodhaven, are worth from $3,000 to $4,000 each; and corner lots are worth from one-third to one-half more, according to the particular location. The new flats rent for $18 and $20 a month each, and the stores bring from $40 to $50 a month each; corner stores in most cases command better rentals.

Brooklyn Manor, which comprises a large part of Woodhaven, north of Jamaica avenue, and which for a long period comprised hundreds of vacant lots, is completely improved with detached frame dwellings on plats 40x100 and larger and with attractive two-story brick attached dwellings.



TYPE OF DETACHED HOUSES AT WOODHAVEN ESTATES, L. I.

Woodhaven and Woodhaven Junction are two distinct stations on the Long Island Railroad, but the growth and improvement of each community has been so extensive they are now merged into one. Woodhaven Junction is the transfer point between the main line and the Far Rockaway branch of the Long Island Railroad.

Nearly all the newcomers to Woodhaven are families who previously had resided in apartments in Manhattan, the Bronx and Brooklyn. Southern Queens has met and is meeting the demand for small individual homes, most of which are detached; but, it is probable, with rapid transit in operation, that rows of attached brick dwellings will form the future character of improvement.

The larger part of Woodhaven has a sewer system while other parts are subject to separate sanitary cesspools for each house. With rapid transit imminent and a still larger influx of population likely in Woodhaven as a result, the city's great remaining duty to this part of Queens is the installation of a complete sewer system.

The most notable improvement near Atlantic avenue or the Long Island Railroad, in Woodhaven, was the subdivision of the country seat of the late Florian Grosjean—who was the head of the agate ware industry in America—on the north side of Atlantic avenue. For forty years this was the most attractive rural spot west of Jamaica. Grosjean died about a decade ago. Comprising about two hundred city lots, this property has been developed and most of it improved with dwellings by a syndicate, prominent in which are Col. William M. Griffith and Frank W. Scutt, of Jamaica. This tract is near the Woodhaven Junction station. Brick private dwellings, on lots 20x100, have been built there and marketed at from $4,000 to $4,500 each. The Grosjean Estate has sold all its Woodhaven land.

On the south side of Atlantic avenue, opposite, is a tract on which thirty seven-room stucco and frame detached dwellings have been built; and most of them were sold at $5,000 each. They are eighteen foot wide houses on twenty-five foot lots. They are herewith illustrated.

The entire extensive area between Jamaica and Atlantic avenues is improved with hundreds of detached dwellings on twenty-five foot front plots; and they were sold at and in the neighborhood of $5,000 each.

The immense agate ware manufacturing plant of the Lalance & Grosjean Manufacturing Company—covering ten acres—on the south side of Atlantic avenue, will remain there. It affords employment to hundreds of persons who reside and own homes in the vicinity.

South of Liberty avenue, Woodhaven is being improved with small one-family houses. They are easily accessible to the new rapid transit road that terminates at Lefferts avenue in Morris Park.

Woodhaven has witnessed a large and substantial one-family house development during the last three years. Much of it was predicated on the new rapid transit routes.

WEST SIDE TERMINAL.

(Continued from page 61.)

adequate facilities. Much of this property has contributed largely to the recent decline of assessed valuations on Manhattan Island. Without a doubt the making of these improvements will largely benefit these properties. It may not be wise to make any prophesies as to the extent of such benefit, but there would seem to be sound basis for belief in the beneficial results by reference to what has happened in the Grand Central Terminal area. The railroad improvements in this area were made as the result of similar co-operation between the city authorities and the railroad company.

The result of these improvements has been not only the enlarged and improved railroad facilities which were needed and demanded by the public, but a great municipal improvement in opening the cross streets and Park avenue to public use and bringing about improvements which have resulted not only in appearance but in direct financial gain to the city.

It would be difficult to define the area which has been affected by this improvement. But take the section bounded by the north side of 41st street, the south side of 57th street, the east side of Lexington avenue and the west side of Madison avenue, as that which has not only all been affected by the work in the Grand Central Terminal, but, except for the general uptown tendency, has been affected by that work alone:

The assessed value of this property for the year 1903 when the work was commenced was	$55,441,146
The tentative assessed value of the same property for 1917 is	151,799,500

An increase of $96,358,354 over 1903, or nearly three times that of 1903.

The total tax paid on the 1903 assessment was.....	$783,754.85
Applying the tax rate for 1916 on the assessment for 1917, the total taxes would be	$3,096,709

This is nearly three and one-half times that of 1903. In other words, the actual increase in annual revenue to the city is more than $2,300,000.

The proposed West Side Improvements will affect the business interests of the city more directly, and in many ways will be more important than the improvement which has been made at the Grand Central Terminal.

THE DEVELOPMENT OF JAMAICA BAY AND ITS BEARING ON SHIPPING

By Lieut.-Col. H. W. STICKLE, U. S. A., Retired, formerly Major, Corps of Engineers

NEW YORK CITY is first, last and all the time, a harbor city. Its location was determined by its harbor and at all times the harbor problem has been pre-eminent among the elements which have determined its course. It is now the greatest port in the world; this on account of its strategic position—geographically as the door for the commerce of the United States; physically on account of its great harbor area and developed waterfront; and mentally, because of the habit which has long been fixed among shippers of passing their commerce through this port. Inertia will have a tendency to maintain the supremacy established even should the conservation and development of the harbor continue to be neglected by the nation and by the city.

It is nothing new to state that New York's harbor facilities are not adequate to care, in a prompt, efficient and economical manner for the commerce demanding passage through the port. The condition has been rapidly growing worse for the past ten years, and has been accentuated during the past two years on account of the war. The result is that commerce had been obliged to seek other harbors. Baltimore, for example, has gained at New York's expense.

Realizing that the adequacy of New York's harbor is a matter for national concern, a permanent and comprehensive plan of continuous enlargement essential to meet future demands has been adopted. Just off the lower bay, near the entrance from the Atlantic ocean, there is a land-locked harbor, Jamaica Bay, a body of water having an area of thirty-two square miles and circumference of about twenty-five miles. Relief for New York harbor congestion was sought by an orderly development of this bay.

In 1906 the Mayor of New York City appointed the Jamaica Bay Commission, and in 1907 Congress directed the Secretary of War to make a preliminary examination and survey for the improvement of the bay. The Jamaica Bay Commission co-operated with Colonel Knight, the Officer of the Corps of Engineers, to whom the duty of making the survey was assigned. The plan of improvement with favorable recommendation was submitted to Congress in 1909 and the River and Harbor Act of 1910 authorized the initial work on the improvement. (Detailed plan for the improvement is contained in House Document No. 14888, Sixtieth Congress, Second Session).

In the existing project the United States and the City of New York entered into a general plan of improvement of Jamaica Bay, jointly, by bulkheading the shores of the bay, filling behind the bulkheads and dredging and maintaining an entrance and interior channel. Briefly, the general government is to provide a main waterway consisting of an entrance channel between the lower bay and Jamaica Bay and a main channel, thence in the bay to the mouth of Cornell Creek, and the City of New York undertakes the remainder of the work. The main waterway as projected is to have ultimately a depth of thirty feet with a width of fifteen hundred feet in the entrance channel, and a width of one thousand feet in the main channel. The main waterway is to be dredged first to a depth of eighteen feet and a width of five hundred feet only, and this waterway is to be widened and to be deepened to the ultimate depth of thirty feet, in proportion to the demands of commerce. (All depths mentioned refer to mean low water.)

To date the United States has dredged the entrance channel to a depth of eighteen feet except for a distance of about four hundred feet, where it is seventeen feet. The width of five hundred feet has, however, not yet been obtained throughout. The main channel has also been dredged as far as Mill Basin at the expense of the United States.

The writer has been surprised at hearing officials of the city and a leading railroad official express themselves as doubtful that the entrance channel through Rockaway Inlet could be kept open. The project having been prepared and reviewed by the Corps of Engineers, United States Army, and adequate provision by breakwaters (if found necessary) made therein, it seems that such doubts are not justified by the situation. Keeping the entrance channel open, either from the ocean or from the lower bay, is a readily solvable engineering problem. The present channel showed no average shoaling from 1913 to 1916, during which period no dredge was on the work. It is presumed that work on a breakwater will not anticipate the determination of its necessity when it can be readily constructed with funds already included in the estimates.

The city has done a little dredging at the entrance to Mill Basin so that a depth of eighteen feet exists to the wharves at the head of the basin. The city has also constructed a wharf and bulkhead parallel to Flatbush avenue, at the head of Mill Basin. This work was done long since, but as there is no water available along the wharf cannot be used. It is understood that some dredging is contemplated there in the near future. The expenditures by the city have been small as compared to those by the United States.

From the viewpoint of the United States, the object of the improvement is to provide a substantial increase in the harbor facilities for the commerce centering at New York City. The improvement necessary to make Jamaica Bay available for deep-draft vessels admittedly amounts practically to the construction of an artificial harbor.

From the view point of the City of New York, besides the navigation advantages to be obtained, the territory tributary to Jamaica Bay is to be developed industrially and for distribution of building materials, coal and supplies to the sections adjacent to Jamaica Bay. There are thousands of acres of marsh that are valueless unless filled. The city's problem is to take the soil from the bay where it is not needed and place it upon the marsh land, which then becomes valuable land. The result of the operation should be a startling profit. The money so devoted by the city is an investment, not an expenditure.

Organizations and public spirited citizens have been urging the City of New York to take up at once and earnestly its share of the improvement. Private enterprise at Mill Basin has accomplished far more than the city in the channel improvement itself, as well as in the development of the abutting waterfront property.

The Atlantic, Gulf & Pacific Company has provided passenger and freight facilities to its waterfront by extension of the tracks of the Brooklyn Heights Railroad Company and has recently completed more than a mile of reinforced concrete pavement on its property, as well as several miles of cinder roads for lighter and less frequent travel. Sidewalks and curbs have been built. Plans for a railroad development have been prepared, so that in future operation mistakes in terminal arrangements so easy to make will be obviated. To accommodate employees of industrial plants located there, the company is constructing a number of substantial homes which it sells on easy terms. City water, electric power and lights, and gas have been brought to the heart of the property.

(Continued on Page 105.)

ENTRANCE TO JAMAICA BAY, AN IMPORTANT STEP IN THE DEVELOPMENT OF THE PORT.

OPPORTUNITIES FOR BUILDERS TO CONSTRUCT FLATS IN QUEENS

By F. R. HOWE, Secretary Queensboro Corporation

THE demand for apartments in Queens has, during 1916, far exceeded the supply. This has been true for the past three or four years. The influx of industrial establishments has created a demand for living accommodations. Up to two years ago, the mortgage market was not favorable to builders, and, with the exception of one or two local institutions, the great mass of investment money in Manhattan was going to the upbuilding of other sections of the city. Within the past two years, however, this condition has changed, and many large savings banks and life insurance companies are now making loans in Queens. As an offset to this, however, is the great increase in the price of labor and materials, so that, in a large measure, only those builders who are provided with ample funds of their own, can continue to build.

The tenement house building activity in Queens is largely confined to two districts; the Astoria and the Elmhurst, or Jackson Heights, sections lying along the rapid transit lines.

The Astoria section is part of old Long Island City, and has been changing its character of development from the two and three-story houses to four and five-story apartments. Many of these buildings are of the cold water type, renting for five dollars a room, while others, heated by steam, command six dollars to seven dollars a room. The type of development is similar to that obtaining in other sections, where tenement houses are building. The tenants in these buildings are principally employees of factories in Long Island City.

The apartment house development in the Elmhurst, or Jackson Heights, section has been largely controlled by The Queensboro Corporation and allied interests. Many apartment buildings have been erected here and increasing rentals are constantly being obtained. The buildings are of the five-story type, with rentals running from eight dollars to nine dollars a room, and some buildings that are now under construction will be rented at $10 a room.

The exceptional advantages of this locality make these rentals easy to obtain, and the interest developed by religious, social and athletic activities has done much to build up a community spirit.

Experience heretofore has shown that living in an apartment has, to some extent, meant isolation. By providing tennis courts, play grounds, a community building and various other opportunities for meeting on common ground, it has been possible for people living at Jackson Heights to meet each other.

Apartment building at Jackson Heights is developing along lines different from those used elsewhere in the city. Owing to the comparatively low prices of land as compared with other sections at a similar distance from the center of the city, it is possible to provide a greater proportion of land area to building area than elsewhere. The theory of development followed out by the owners is that instead of crowding the land to the limit with the maximum sized building, the smallest structure that will give a fair return on the value of the land and building is erected.

The Tenement House Law provides that the maximum area that a building should occupy is seventy per cent. of the area of the lot. At Jackson Heights, buildings are being erected occupying less than 50 per cent. of the ground area. This has added tremendously to the attractiveness of the apartments from the standpoint of light and air, and the public has been more than willing to pay the additional cost of such facilities over the stereotyped apartment so prevalent in many other sections.

I believe there is no place so attractive, at the present time, to builders and investors in apartment buildings, as Queens, along the lines of rapid transit. Relatively low land values in some measure offset the high cost of labor and material. Proximity to the central sections of the city, with the approaching operation of rapid transit, give this territory a still greater advantage over other sections, which have heretofore enjoyed a monopoly of rapid transit.

The lending institutions are beginning to recognize more and more these advantages. With the great influx of money in this country they are lending more freely to this locality, so that, at the present time, it may be said that the amount of loans obtainable on a building and the interest rate, are the same as those prevailing in many sections of the city.

TRANSIT IN QUEENS.

J. H. Robinson, of Cross & Brown Co., Shows How Borough Will Be Helped.

IT is not generally realized by the public what the dual system of rapid transit means to Long Island City and Queensboro. The dual system is composed of three systems, the Interboro subway, Interboro elevated and the Brooklyn Rapid Transit system. Trains of all three systems are to run over the Second avenue elevated line to Ditmars avenue, Astoria, and the Roosevelt avenue line to Sycamore avenue, Corona, giving these great areas a five-cent fare over all of the rapid transit lines in Greater New York.

Neither the Bronx nor Manhattan, north of 59th street, will have the benefit of all three divisions of the dual system, for the Brooklyn Rapid Transit lines cannot extend north of 59th street, Manhattan, nor will the Interboro elevated lines touch any part of Brooklyn, and the Interboro subway lines reach only the Eastern Parkway Section of Brooklyn, but Long Island City and the First and Second Wards of Queens will enjoy a five-cent fare to any and every part of the greater city.

The industrial section of Queens is bound to grow even more and more rapidly as manufacturers realize the advantages of the five-cent fare, as it will afford Queens better labor conditions than any other part of the city. It will be possible to board an Interboro subway train at City Hall, which runs up through Broadway, Seventh avenue, east under 60th street to Long Island City in about twenty minutes, or it will be possible to reach Long Island City by an Interboro train from City Hall via Grand Central terminal and the Belmont tube in about fifteen minutes' time. The present running time from 42d street and Fifth avenue to Hunter's Point avenue station of the Belmont tube in Long Island City is now less than six minutes. Hunter's Point avenue station is the second station of the Belmont branch in Long Island City, and this station connects with the Hunter's Point avenue station of the Long Island-Pennsylvania Railroad.

THE PAST AND FUTURE INDUSTRIAL GROWTH OF THE BOROUGH OF QUEENS

By WALTER I. WILLIS, Secretary Queens Chamber of Commerce

QUEENS Borough has always been an important manufacturing center on account of the vast amount of low priced land with railroad and waterfront shipping facilities lying immediately adjacent to Manhattan. During the past ten years the number of factories have more than doubled and now new factories establish in Queens on an average of at least one a week. In 1909 the Borough of Queens, considered as a city by itself, ranked seventeenth among the principal cities in the United States in the value of its manufacturing products. At that time it also surpassed any one of nineteen different States of the Union in value of its manufacturing products, any one of eighteen States in the amount of capital invested, eleven States in the number of factory employees and ten States in the number of actual factories.

The industrial development during the past seven years, since the opening of the Queensboro Bridge, has, however, exceeded the expectations of every one. Millions of dollars have been spent in the construction of new factories, all of which are modern, sanitary and fireproof buildings. In addition, a large number of the old industries have made extensive enlargements to their plants.

According to the United States Census figures the industrial growth of Queens for the five years from 1909 to 1914 showed a 62 per cent. increase in the number of employees, 50 per cent. increase in the salaries paid, 35 per cent. in amount of wages paid, 30 per cent. in the number of wage earners, 29 per cent. in the amount of capital invested in manufacturing and 26 per cent. in the number of new factories. These figures, however, do not include the record of the rapid development of Queens during 1915 and 1916, which has been unprecedently large.

The Queens Chamber of Commerce is now completing an industrial survey of the borough, and the records of this survey show that there are today 1,169 industries in Queens Borough, having 64,000 employees, and an annual pay-roll of $47,000,000; that the annual value of the products for this year have reached the vast sum of $323,000,000, and that the capital invested in manufacturing is new nearly $200,000,000.

While Queens ranks today among the foremost cities of the United States in the value and amount of manufacturing within its borders, there is every indication of much larger industrial development during the next five to ten years, for, with the operation of the various rapid transit lines now giving a five-cent fare from a large portion of the borough to all parts of New York City, and with the operation of the New York Connecting Railroad, affording a through rail freight service with the mainland, new industries will establish here at a much more rapid rate than heretofore.

There is a growing tendency on the part of manufacturing concerns which has outgrown their present quarters in the Borough of Manhattan—where further expansion is costly—to establish their plants in Queens, where cheaper land is available for building increased accommodations, at reasonable cost. Such manufacturers prefer to remain within the corporate limits of New York City, where they can continue to use the facilities afforded for such location for the efficient production and distribution of their products. Queens Borough is taking advantage of this fact, and the Queens Chamber of Commerce has established an industrial bureau to present to any manufacturer looking for a new location, all the data he desires as to freight costs, cost of land and available sites, facilities for receiving and shipping goods, etc.

Ray Palmer, president of the New York & Queens Electric Light & Power Company, is chairman of the Manufacturing and Industrial Committee of the Chamber, which has charge of the work of both the recently established Industrial and Traffic Bureaus.

The Traffic Bureau has an experienced railroad man for its manager. This department is able to quote freight rates, give information regarding various routings and classifications, trace shipments, or audit freight accounts.

ADVANTAGES OF QUEENS BOROUGH FOR INDUSTRIAL DEVELOPMENT

By E. S. NUGENT, of the Degnon Terminal Co.

INDUSTRIAL terminals, erected on scientific lines, where shipping facilities represent a minimum of expenditure in time, labor and money; where the buildings are constructed in accordance with the highest standard of sanitation, health and safety of life and limb, with plenty of open air and sunshine; where the housing facilities of the operatives employed in the factories are of the same high standard, at comparatively low rentals, in a location that insures a ready supply of skilled and unskilled labor and within easy reach of the principal business, hotel and amusement centers are as vital to the present and future of any great seaport city as are the lungs and heart to the human body.

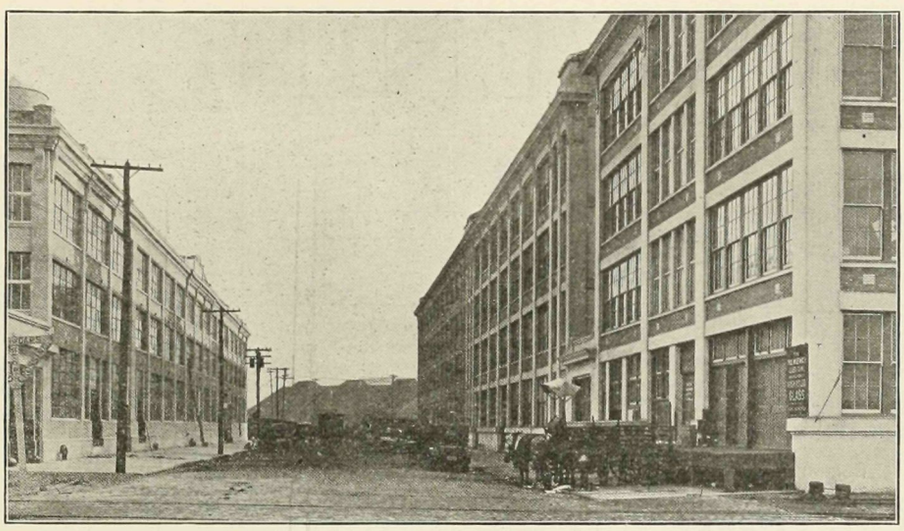
Without such modern terminals no great city can reach, or having reached, hope to continue in a position of supremacy, even as manufacturers cannot hope successfully to compete with their contemporaries unless they take advantage of the superior facilities of such an improvement as the Degnon Terminal on the line of the Pennsylvania and Long Island railroads, the New York Connecting Railroad, and the Queensboro subway, in Long Island City.

Merely as a matter of fair comparison and without the slightest intention of condemning other terminal locations, it is impossible to conceive of the Bronx or Westchester ever growing into formidable rivals of Queens for the overflow industrial interests of Manhattan. These more northerly regions, while being directly connected with the main land, nevertheless suffer by the very reason of their location.

For practical industrial purposes they are too far removed from the buying and retail selling centers of Manhattan to be able to compete with the Degnon section of Queens, which, via the Queensboro subway from the Grand Central terminal and its connecting web-like system of subways, is located five to ten minutes from all the principal hotels, show and salesrooms and department stores between 23d and 49th streets, by way of either the Queensboro and Interborough subway lines or the Queensboro Bridge and Manhattan elevated and transit lines.

From the manufacturer's point of view a single glance at any city map will suffice to show the difference in carting over land or shipping by water as also the time employed by non-resident labor traveling back and forth between their homes, and factories located in the Degnon section of Queens or in the Bronx and Westchester zones. These are physical facts that can be overcome only by the construction of subways and bridges and in this respect Long Island City has all the advantages and none of the disadvantages of location.

The same arguments apply to locations in South Brooklyn and along the New Jersey water frontage. Neither of these sections even with their present and prospective subways can be reached in nearly so short a period of time as can the Degnon section from the centers of Manhattan that it is so imperative that manufacturers keep in close touch with.



STUDEBAKER CO. AND ROME METALLIC BEDSTEAD CO.'S PLANTS AT DEGNON TERMINAL, LONG ISLAND CITY.

In Manhattan the "Save New York Movement" is operating with the new zoning regulations to drive manufacturers out of the retail districts north of 23d street, and into the old fashioned inadequately improved and uneconomical districts erected in haphazard fashion between Canal and 14th streets, or else is rapidly congesting the small amount of vacant space available in the newer modern buildings in the zone from 14th to 32d streets, Third and Tenth avenues.

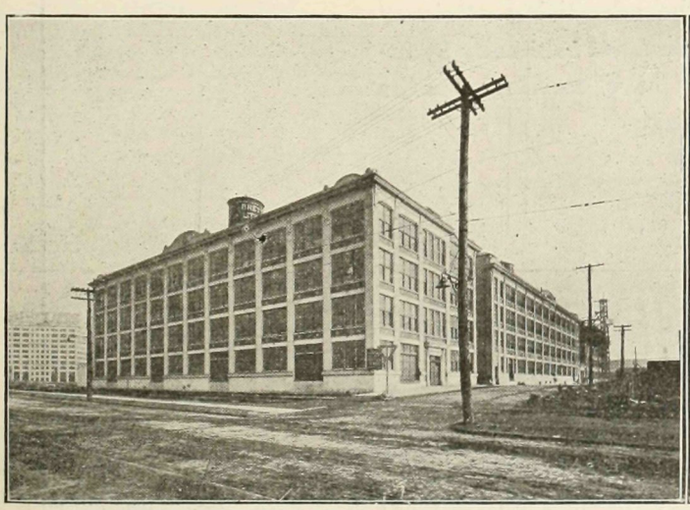
The disadvantages of Manhattan is that all these older districts cannot be laid out again and re-improved on proper lines except after a long lapse of years, if at all, and then only at a cost that would be prohibitive.

Granting, however, that all this were done, could landlords in Manhattan then afford to compete with buildings in Queens? Land values in Manhattan are twenty to thirty times more than in Queens. Loft and factory rentals are also considerably more, just because of difference in the original cost of the operation.

These facts were recognized recently, when the Queens Borough administration leased a greater part of the new Queens subway building erected over the Hunters Point avenue station, at the gateway to the Degnon terminal. This location was decided upon because it was the most accessible point in the Borough especially in its relation to Manhattan.

Even more recently the strongest and most influential industry in New York, that of the cloak and suit trade, has taken up with Degnon companies the question of erecting a model industrial colony for their exclusive use and occupation. Hundreds of the city's foremost garment manufacturers favor the construction of such a colony which support more than any other single fact tends to show the vital need of such terminals as the Degnon, and the pressure that is being brought to bear upon New York to provide suitable facilities for its great and ever-growing army of workers; that is, unless the city would see its supremacy threatened and its large industries make a complete change of base to some other ambitious city of which there are a number that are offering big inducements to manufacturers.

From this short analysis and incomplete survey of the situation it could be seen that the motives behind the construction of the Degnon terminal have not been altogether selfish, but that the operation has the double purpose of serving the interest of the city at large as well as those of the capital it represents. Good evidence of its success is shown by the conspicuous landmarks of Long Island City already erected there; the huge plants of the Loose Wiles "Sunshine" Biscuit Company, American Ever-Ready Works of the National Carbon Company, The Brett Lithograph Company, the Rome Metallic Bedstead Company, the Studebaker Company, the Kindel Bed Company, and the Defender Manufacturing Company. The sale of 100,000 square feet of space directly on the Dutch Kills Canal, the deep waterway at the Degnon terminal, was one of the important real estate announcements of a few weeks ago. It is understood this company will erect a $500,000 plant.



BRETT LITHOGRAPHING CO. AND DEFENDER MANUFACTURING CO.'S PLANT, LONG ISLAND CITY.

LOOSE-WILES BISCUIT CO. AND AMERICAN EVER READY WORKS, LONG ISLAND CITY.

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RAILROAD AND WATER FACILITIES MEAN GROWTH OF LONG ISLAND CITY

By JAMES A. HENNESSEY, of Cross & Brown Co.

LONG Island City with its railroad and water front facilities is without doubt destined to be one of the greatest manufacturing centres on the continent. Situated to the east of that part of Manhattan bounded by 34th street to 92d street and connected by the Queensboro Bridge, spanning the East River, opened in 1909, giving a direct route for vehicles of all descriptions from 59th street and Second avenue (Manhattan) to Long Island City—a ferry service at 34th street and 92d street, its accessibility to the shopping centres through the Queensboro subway from the Grand Central station, Long Island City might be justly termed the door to New York.

It is always an advantage for a manufacturer to have his factory located near a large market. Long Island City is part of the largest market in the world—the City of New York—the financial centre for the distribution of commodities for the United States. It is an additional advantage for the manufacturer to be located where he can truck his finished products direct to the consumers. Within a radius of ten miles from the Queensboro Bridge are included all of the important sections of Greater New York.

The variety of the articles manufactured in Long Island City covers almost the entire range of the industrial field and includes nearly everything from chewing gum and buttons to silks, pianos, aeroplanes and automobiles. The automobile industry, recognizing its proximity to "Automobile Row" has established a number of service and assembling plants. The Ford Motor Car Co. has an assembling plant containing more than 1,000,000 square feet. The Packard Automobile Co. and the Pierce-Arrow Co. have recently purchased additional property with a view to enlarging their present quarters.

The Queensboro Terminal, a branch of the Brooklyn Eastern Terminal Co., located on the East River just south of the Queensboro Bridge, receives and delivers freight each day not only for every railroad in the United States, Canada and Mexico, but to steamboat lines on Long Island Sound, the Hudson River and the Atlantic Coast, giving as prompt and economical transportation as the merchants of Brooklyn and Manhattan receive.

Two terminals of the State Barge Canal will be located in Long Island City: First, on the East River adjoining the Queensboro Bridge; second, on the East River at the foot of Broadway in the Astoria Section of Long Island City. These terminals will place all the advantages of the $101,000,000 deeper and wider State Barge Canal at the disposal of the shippers of Long Island City and will materially reduce the cost of transportation of raw materials and manufacturing products.

The United States Government engineers have prepared plans for the improvement of the East River; the plans include the dredging of a thirty-foot channel as far north as the Queensboro Bridge. Newtown Creek, which has been called the "busiest waterway of its size in the world," is the dividing line between the Boroughs of Queens and Brooklyn for a distance of four miles, empties into the East River opposite 34th street, Manhattan. In 1913 there were over 5,000,000 tons of freight valued at over $226,000,000 handled on this waterway.

The chief commodities handled are copper, ore and its products, petroleum, lumber, coal, chemicals and building materials. The New York Connecting Railroad, with its massive bridge over Hell Gate which will be the largest of its kind in the world, with viaducts which will be three miles long, connecting Queens Borough with the Bronx and the Pennsylvania-Long Island System with the New York, New Haven & Hartford Railroad will give an all-rail route for both freight and passenger traffic between Long Island and the New England States, and the West, will result in a great saving of time in the transportation of commodities of every kind.

In every industrial centre the labor supply is one of the most important features. The largest labor field in the country is practically a neighbor of Long Island City. The Bronx, Harlem and the East Side are much more convenient to Long Island City's factory colony than some parts of Manhattan, this because of the perfection of rapid transit which gets one from Grand Central station to Long Island City in four minutes.

Transit being the key to most real estate problems, a summary of the routes of the lines that are now far advanced in their construction and which will radiate from the station in the Queensboro Bridge Plaza is interesting.

Rapid Transit Lines.

The rapid transit lines of the dual subway system will radiate in every direction, as follows:

(1) To the north, a three-track elevated line through Jackson avenue to Second avenue to Ditmars avenue, Astoria, to be operated jointly by the Interboro and the Brooklyn Rapid Transit Companies.

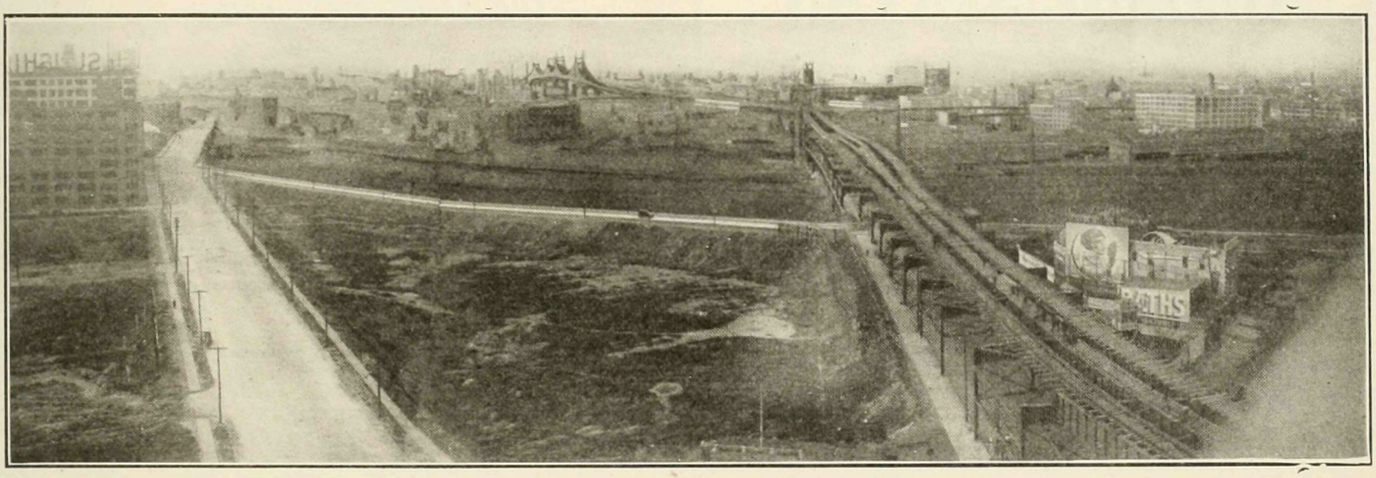
(2) To the east, across Diagonal street and over the Sunnyside yards to Thomson avenue and Greenpoint avenue to Woodside, Elmhurst and Corona; a three-track line to be operated jointly by the Interboro and Brooklyn Rapid Transit Companies. This line will be continued out Roosevelt avenue to Flushing and Bayside.

(3) To the south will be the extension of the Steinway tunnel from its mouth at Van Alst avenue and 4th street to be operated by the Interboro in connection with the present and proposed subways in Manhattan. Also the extension of the elevated lines of the Brooklyn Rapid Transit Company, known as the Crosstown line, will connect with all the elevated lines in Brooklyn, giving a direct north and south route to Coney Island.

(4) To the west, across Queensboro Bridge into Manhattan will operate the trains of the Brooklyn Rapid Transit Company, connecting with the 59th street, Seventh avenue and Broadway subway and with the Brooklyn Rapid Transit lines in Brooklyn; and also the extension of the Second avenue elevated lines of the Interboro.

Is it any wonder that new capital is being attracted to Queens almost daily and that the tide of a vast population of the future has begun to flow steadily over and under the East River into a land that is about to come into its own?

The factories which have been erected in Long Island City are considered model structures by industrial experts. Large, roomy, with plenty of sunlight and built along the most approved ideas of factory construction; compared with factories in the parent borough, they are superior to many, since economic conditions, such as cheapness of land, permit the building of structures which tend to better ventilation and better surroundings because of the great amount of territory awaiting development.



LONG ISLAND CITY, WHERE INDUSTRIES ARE BEING ATTRACTED.

One of the large tracts of available factory land comprises the greater part of the blocks immediately south of the Queensboro Bridge, owned by Frederick Ayer (represented by Cross & Brown Company), who is prepared to erect factories and other industrial plants to suit the prospective occupant and sell on an easy rent paying basis equal to a low rent.

With the mistakes of the older sections to guide her growth, with restrictions in force and the welfare bodies now active, Long Island City should develop into a model factory settlement.

In Long Island City the manufacturer who has a good location and is surrounded by favorable conditions has an advantage over competitors. Numerous waterfront sites are to be had along the East River and Newtown Creek, other locations within easy hauling distance of both railroads and piers to be had at attractive prices varying according to location, but always far below in price of the same class of property anywhere else in New York City.

New Jamaica Station.

One of the most important railroad improvements in the Borough of Queens within recent years, affecting the transit situation in the borough, was the completion of the new Jamaica transfer station and yard, involving an expenditure of approximately $3,000,000. As a result many dangerous highway crossings at grade were eliminated, and a quick and easy transfer system between trains in all parts of Long Island was effected, eliminating former delays.

LONG ISLAND CITY

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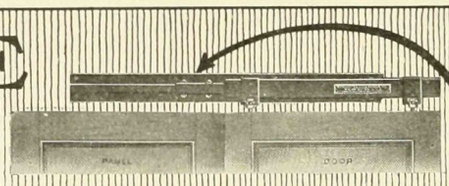
RELIANCE BALL BEARING DOOR HANGERS



These hangers, notwithstanding their physical excellence, cost less when ready for service, than the cheaper device, due to their simplicity and the resultant saving of time and labor in installing.

Their principle of construction provides against complicated and expense-creating parts and involves the use of practically only two telescoping pieces of steel with balls between. No other construction is capable of longer service nor lower maintenance expense.

Write for all the facts and catalog.

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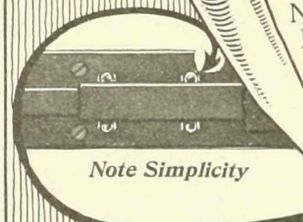
Grand Central Terminal



Note Simplicity

ERA OF PROSPERITY STARTING IN QUEENS BOROUGH REALTY

By GEORGE J. RYAN, Vice-President Queens Chamber of Commerce

THE year 1916 will always be spoken of by the real estate interests of Queens Borough as the starting point of the biggest real estate develpment that has ever taken place in this city. While during the past year the real estate market in Queens has been more active than any time during the past five years, it is anticipated that the sales in 1917 will exceed any previous record. The number of sales during the past year is just a forerunner of what is bound to happen when rapid transit facilities are extended into a section as near the business center of Manhattan as is the great proportion of the area of Queens Borough.

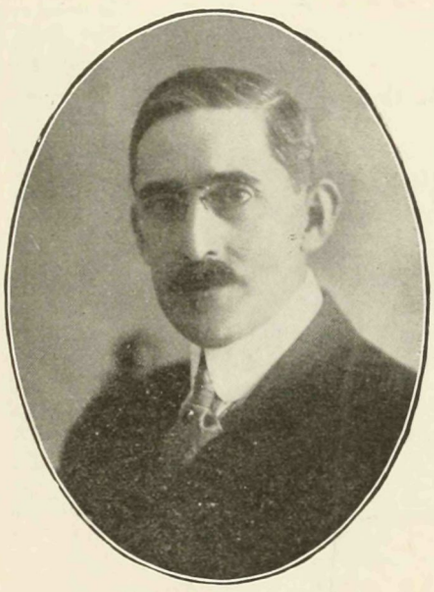
If history repeats itself, so will the record of real estate sales and building development that took place in the Bronx in 1904-7, after the opening of the present subway, repeat itself in Queens during the next three years with all of the seventeen miles of rapid transit to be in operation connecting Queens with Brooklyn and Manhattan at a 5c. fare.

Queens Borough has two advantages over the Bronx, which cannot help but result in a far greater real estate development here than that which took place in the northerly borough of the city after rapid transit facilities were extended into it.

The first advantage is that a larger proportion of the area of Queens is nearer the business center of Manhattan than that of the Bronx, or that of any other borough of the city. The workers of Manhattan can travel at the same rate of fare, in a much shorter time, to homes in Queens, and then find homes that will cost them less, for the land values are less in Queens than in the Bronx, and the rents are correspondingly low.

The second advantage is the great industrial develpment that is taking place in the Long Island City section of the borough, which has brought thousands of new employees to work in this borough during the past few years. All of these employees must be housed, and it is only natural that building accommodations must be provided in Queens to take care of the working people, who would prefer to live near their places of employment as long as rapid transit is available to make all parts of the city readily accessible.

Another great advantage that Queens will have in the real estate market is the recent adoption of zones, restricting certain areas for residential and other areas for industrial development. This cannot help but have a salutary effect upon the character of the development of Queens Borough, for a large portion of the borough is still undeveloped and can make a fresh start without the necessity of destroying present values in buildings already erected. Each section of the borough will develop along lines previously laid out. When the character of the development of a section is established the investor knows the development that will follow. This will both enhance and stabilize values. Twenty-two thousand acres have been set aside for industrial development in the Borough of Queens, which is nearly thirty-five square miles. This industrial area is only 30 per cent. of the total area of the borough, and yet two-thirds greater than the entire area of the borough of Manhattan, and within 4,000 acres of being as large as the total area of the Bronx. Were this industrial area of 22,000 acres to be lifted out of Queens Borough, there would still remain 53,000 acres for residential and commercial purposes. This means that outside of the industrial area of Queens there remains an area for homes and business greater than the total area of the Borough of Brooklyn. While all of New York City will profit by the zoning plan, Queens has the opportunity to profit by these restrictions more than any of the other



GEORGE J. RYAN.

boroughs, because it is now in the midst of the most remarkable building career. It will prevent a haphazard character of construction and location which afterwards could be remedied only by an unusual expenditure of money.

Mortgage conditions in the Borough of Queens at the present time are not as satisfactory as they should be. While there has been no scarcity of money available for building in the borough, yet the demand for new buildings of every type is growing so rapidly that Queens Borough offers today a very lucrative field for all of the large mortgage companies doing business in New York City.

During the next few years the development of homes to take care of the great influx of population that is expected as a result of the operation of rapid transit, to house the employees of the big industrial concerns, will require mortgage loans far greater than have ever been made in the boroughs before. Builders, investors and mortgage companies should all co-operate in this important problem in order that nothing be allowed to hamper the growth of Queens Borough.

The record that Queens has made in its industrial development during the past few years has been maintained during the year 1916. While at least one new factory a week was established in the borough during the past year, many of the older concerns made substantial additions to their existing plants.

About 28,500 realty papers have been recorded in the Queens County Clerk's office since January 1, 1916.

The greatest activity is shown along the lines of the transit development.

The total number of new buildings for the year in Queens is about 5,000, with an aggregate valuation of $20,000,000, an increase over last year of $2,000,000.

In Long Island City alone $1,500,000 has been expended for new factories and $1,500,000 for apartment houses.

The builders of these houses have failed to keep up with the demand resulting from the large increase in manufacturing concerns, thousands of operatives being unable to find homes in the vicinity of their work.

In Newtown, mainly the Ridgewood section, $2,300,000 worth of apartments have been built, these structures going up blocks at a time.

About 4,000 one and two-family dwellings have been erected in the borough this year, the total valuation of which aggregates not less than $15,000,000.

TRANSIT LINES HAVE BENEFITED ELMHURST SECTION OF QUEENS

By GEORGE C. MEYER, of the Cord Meyer Development Co.

ELMHURST was first settled in 1652 by a company of Englishmen, who had first located in New England. The village was founded on what is now known as Queens Boulevard, just east of Broadway. The settlement was named Middleburg, after a place of some note in the Netherlands, the capitol of the Province of Zealand, and remembered with gratitude as a place of safety from religious persecution.

The village was under the rule of the Dutch until Long Island came into the possession of the English, in 1664, at which time the name was changed to Hastings, after a town in Sussex, England. Both of these names applied not only to the village, but to the entire township, which is now known as the Second Ward, Borough of Queens.

In 1665 the town was enlarged by the addition of what is now the Bowery Bay section and Long Island City, and the township thus constituted was re-named the New Town, which was soon corrupted into Newtown. That portion of the town now known as Elmhurst, as other villages were started within the boundaries of the town, was designated as Newtown Village, a name it retained until about twenty years ago, when it was changed to Elmhurst, so that the locality would not be confounded with that bordering on Newtown Creek, some three or four miles away.

For many years the growth of Newtown Village was greatly retarded, owing to the fact that much of the land was owned by a few individuals, and they as a whole refused to sell or do much for the improvement of the place.

One of the largest land holders in the immediate vicinity of the Village was Samuel Lord, who was born in England and came to this country early in life. His purchases were made with the idea of establishing a large English estate, but after being a resident of the village for a long period, he lost his interest in the place and went back to England. His vast tract of property laid idle until his death, at which time it was placed on the market and was purchased by the Cord Meyer Company. This company immediately began developing the tract into a suburban development, which grew very rapidly, even with the poor transit facilities in operation at that time. To reach Elmhurst at that time it was necessary to take a car to the foot of East 34th street, cross the ferry to Long Island City, and then a fifteen minute ride by train to Elmhurst.

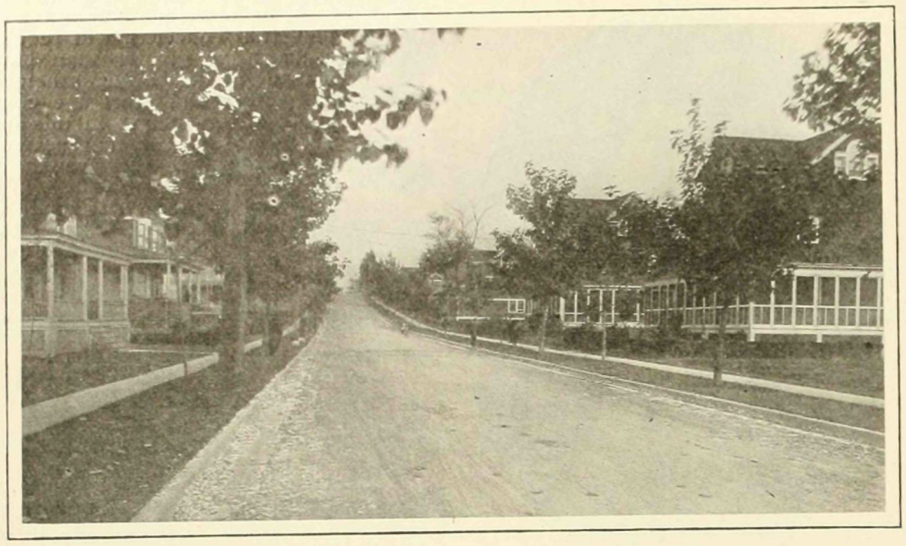
The increase in land values was very rapid, the lots when the development was first started being sold at $300 each. These values increased every year until the price of $1,800 to $2,000 per lot was reached in 1907, at which time Elmhurst realty attained its maximum value, the price of the lots being so high that it made too large an investment for the average man to erect a single-family detached house, so that the development of Elmhurst from 1907 to date has been almost at a standstill, the transportation facilities being too poor for development of the multi-family house.

Elmhurst can now be reached from the Pennsylvania station, 33rd street and Seventh avenue, in fifteen minutes. There are three different lines of trolleys passing through Elmhurst, and within a period of six months the new Elevated System will be in operation, over which it will be possible to reach all parts of New York City for a five-cent fare. With this new means of transportation in operation, the growth of the apartment house in Elmhurst is bound to be a tremendous one, especially as the prices are far below that on property situated similarly in any part of the city.

(Continued on page 150.)

BEECHHURST-ON-THE-SOUND PROVIDES FINE SITES FOR SUBURBAN HOMES

By SAMUEL EICHEN



RESIDENTIAL THOROUGHFARE IN BEECHHURST.

IN the face of the rapid urban growth of nearly all parts of Queens Borough there is no building of brick and frame attached dwellings at Beechhurst and Malba, on the Whitestone Landing division of the Long Island Railroad. That there is no likelihood of there being is demonstrated by the fact that eighteen new detached dwellings were built at Beechhurst during 1916 on plots ranging in size from 40x100 feet to 180x200 feet. These dwellings ranged in price from $6,500 to $30,000 each. Some of them were built by speculative builders and the remainder were built at private contract for occupancy. All of those built for marketing are sold except two, and those are destined to be sold before Spring arrives.

Thirty new houses are planned to be built at Beechhurst this year and most of them will be completed and ready for the autumn market of 1917. Some of them may be sold on the plans, as were some of the eighteen dwellings built last year. The demand is for more costly houses than has prevailed heretofore.

There is about two thousand feet of shore front at Beechhurst and 150 acres of upland which is situated one hundred feet above tide water. This rugged coast line appeals peculiarly to the seeker of a suburban home within the city limits. The upland slopes gently toward the water and part of the lower shore front —about two hundred feet—comprises a bathing beach for the use of residents of Beechhurst. This in itself is a valuable real estate asset.

A pier divides the bathing beach from the rest of its shore line, and this pier has a runway reaching to a float that makes the mooring of motorboats easy. Mooring is free to residents. There is twenty-three feet of water at this pier at low tide. Large yachts as well as power boats can dock here easily. The home of the Beechhurst Yacht Club is at the head of the pier and on the shore, and from its porch sweeping marine views are obtainable. This club is a social rendezvous for residents and every property owner is eligible to membership.

There has been no reclamation of land, as all the property is of high and rolling topography. It abounds in large beech trees, from which circumstance the place derives its name. One copper beech tree in this home colony is one hundred feet high, with immense spread of branches and a girth of five feet. This is a rare horticultural condition on the north side of Queens.

First placed upon the market in 1907, Beechhurst has undergone substantial development and improvement. The smallest sized plot purchasable there is 40x100 feet, and most of the improvements are on larger plots. Howard Thurston, the magician, is completing a stucco dwelling on a plot 180x200, that will cost $30,000. Two hundred houses have been built since its inception.

When Beechhurst was opened nine years ago lots 20x100 in size were sold at $400 each and upward a few hundred dollars. The same lots—where not built upon—have trebled in value.

All assessments for physical and municipal improvements in Beechhurst have been paid. Its sanitary system is part of the sewer system of the city of New York. All streets are graded, macadamized and sewered. Some of the principal avenues were recently resurfaced with macadam. Twelve miles from Manhattan, it is the terminal of the Whitestone Landing division that is about to be adopted by the city as a rapid transit route.

The shore front of Queens for two miles west of Willetts' Point comprises the most marketable suburban real estate within the city limits because it is restricted to detached dwellings for many years to come and because it is on a line of the Long Island Railroad, whose adoption by the city as a rapid transit route to connect with Queensboro bridge is imminent.

LONG ISLAND CITY.

Section Suggested as Zone for Manufacturers.

THE light manufacturing zone of Long Island City is situated in the Hunters Point and Thompson Hill sections. It is about one and a-half miles east of the Grand Central subway station in Manhattan.

From Hunters Point avenue station via Queensboro tube to the Grand Central Station (which is an express stop on the Manhattan subway), the running time is five minutes with a transfer to all subway systems. In a very short time the tube will be extended to Times Square, where there will be a union station of the B. R. T. and the Interborough systems. The second avenue "L" and 42d street crosstown cars via Queensboro Bridge reach the district almost as directly.

For employees living in Queensboro, there are more than twenty-one miles of trolley systems running past the zone on the north and west, and reaching fifteen well established towns in the borough. For those who wish to live further out on Long Island the Hunters Point avenue station of the L. I. R. R. is right in the center of the zone.

Railroad sidings can be provided on the ground floor of the buildings and shipments made direct on express cars daily or more often if desired. An auto delivery service can be provided, if necessary, between the shops and the showrooms in the retail shopping and commercial districts of Manhattan via Queensboro Bridge and 34th street ferry at a charge not to exceed the present messenger service between factories and stores.

Uniform four to six story buildings can be erected on sixty foot streets with blocks or half blocks set aside for "breathing places," and the buildings so arranged on inexpensive land as to provide a maximum of open space between, insuring a perfect scheme of light, air and ventilation to the shops.

Staten Island Street Railways.

St. George, the Staten Island terminus of the Municipal Ferry, operating from Whitehall street, Manhattan, is also the terminus of the trolley cars of the two electric railways, the Richmond Light and Railroad, and the Staten Island Midland Railway. The Elizabethport Ferry car runs along the bank of the Kill Von Kull, a distance of seven miles, to Holland Hook, where connection may be made with a ferry to Elizabethport, N. J., across the Arthur Kill. This line operates thrugh New Brighton, Snug Harbor, where is located the famous home for aged seamen; Livingston, where the large power station of the trolley company has been established, and from which the electric lighting and power service of the Borough of Richard is furnished, as well as power for the trolley cars; then through West New Brighton; Port Richmond, from which point a ferry operates to Bayonne, N. J.; and Mariner's Harbor to Holland Hook. Several large shipyards and other important manufacturing concerns have their plants along this line, it being especially adapted for industrial purposes on account of its proximity to the waterfront.

The South Beach trolley from St. George runs through Tompkinsville, Stapleton, Clifton, Rosebank and Fort Wadsworth to South Beach, a popular bathing resort. The other Staten Island bathing beach is known as Midland Beach. It is reached by two routes via the Midland Railway; at St. George, the trolley connects with the ferry from New York, and at Port Richmond connecting with the ferry from Bayonne.

Old Richmond on the main line of the Staten Island Midland Railway is rich in historic interest. The old Courthouse and County Clerk's office, also the plot in which the last of the Huguenots; St. Andrew's Church, dating back before the Revolutionary war; and the Blackhorse Tavern, a Revolutionary relic, are among the interesting places.

Many old houses are scattered among the new high class country estates that have been built in this section within recent years. This portion of Staten Island has been growing steadily, and several large tracts of land have been developed. Almost any of the branch lines of trolleys, including Castleton avenue, Silver Lake, Concord and others, present opportunities for a trip through a country which few people realize may still be found within the limits of Greater New York.

The other electric road on Staten Island is known as the Southfield Beach Railroad and operates over private right-of-way between Midland and South Beaches, furnishing a convenient connecting link, so that visitors may see both beaches easily on one trip.

The establishment of the Municipal Ferry at St. George and the converging of all the transportation lines at that point has had a great effect in the upbuilding of Staten Island. The Terminal and the new Civic Center, with its group of imposing public buildings, combine in presenting an unusually favorable impression to visitors to Staten Island.

Public Markets.

The oldest established municipal markets in the City of New York are the Washington Market, at Fulton and West streets; Jefferson Market, at Greenwich street and Sixth avenue; West Washington Market, Gansevoort and West streets; Gansevoort Market, Little West 12th and Gansevoort streets; Delancey street Market, Pitt and Willett streets, and the Wallabout Market on Washington avenue, Brooklyn.

WHAT HAS BEEN DONE IN RICHMOND DURING 1916

Work Started on Amboy Road, a Through Artery to Tottenville—Other Municipal Improvements

By HON. CALVIN D. VAN NAME

BOROUGH President Calvin D. Van Name, of Richmond, in reviewing the accomplishments of his administration and what was under way during 1916, said:

"Every encouragement was given to citizens for necessary improvements, whenever they were asked for by property owners who would have to pay for them by assessment. The real estate speculator who sought to place a heavy assessment over a large area in order to sell his small holdings was not permitted to do so.

"By laying before the Board of Estimate the facts and demonstrating that the Amboy Road was one of the important highways for through travel, used more by residents of the other boroughs than the citizens of Staten Island, and that it should be improved as a first class highway and be paid for by the Greater City, the Board of Estimate appropriated $111,000 for the improvement of three and three-quarter miles, from Bentley street, Tottenville, to Crook's Crossing, Huguenot, and the work is now well under way.

"The resolution implicitly committed the city to the expenditure of the necessary amount of money to complete the Amboy Road from Tottenville to New Dorp, and it is expected that it will be finished within three years. It will be one of the finest roads ever built on Staten Island, and it is under the supervision of Commissioner of Public Works Henry P. Morrison.

"The Richmond Light and Railroad Company has shown a spirit of cooperation in the work to eliminate the bad conditions now existing in and between its trolley tracks. They are the only defective parts in our roadways.

"In future all second hand material which is removed from old roadways that are to be improved with new material, and which can be utilized, will be used for the purpose of improving highways and dirt roads. Funds for repaving work were five times as large for 1916 than was at our disposal in 1915.

"The delay and loss of time waiting for payments due on materials and supplies furnished to the city by business men, and for work completed by contractors, heretofore customary, has been greatly lessened. It is the desire of the administration to have such payments made as promptly as possible.

"The status of contracts for the year 1916 are:

Total amount of repaving contracts completed	$68,668
Total amount of repaving contracts under construction	193,127
Repaving contracts registered but not commenced	28,026

Repaving in Course of Preparation.

Granite block	$20,000
Bituminous concrete	17,600

The plumbing work, heating and ventilating work now under way and the interior finish (authorized) of the new County Court House at Saint George, and assessable improvements for regulating, grading, paving, curbing, guttering, sewers, sidewalks and highways, make a grand total of $829,647

"The Bureau of Street Cleaning was kept busy during the first of the year by several heavy snow storms. It removed 32,275 cubic yards of snow, at a cost of $6,200.80.

"The annual Spring Clean Up was begun April 26, and finished May 11. About 2,100 cubic yards of rubbish were removed at a cost of 34½ cents a cubic yard.

"The Bureau had added to its activities the caring for a Police Training Camp, at Fort Wadsworth, from May 27 to September 9, and handled it efficiently. An improved refuse collection service was inaugurated in the outlying districts at Crescent Beach, New Dorp Beach and Midland Beach. Hundreds of new houses were added to the drivers' all-year-round collection routes.

HON. CALVIN D. VAN NAME.

"The poliomyelitis epidemic made extra work, especially in the care of dumps, and because of the orders of the Health Department, that refuse deposited by street cleaning vehicles be covered and the dumps made sightly. This required a large force of men.

"A great improvement was made at the Clifton Destructor in eliminating escaping dust from the stacks. It was accomplished by the installation of simple mechanical devices. Clinkers from the Destructors at Clifton and West New Brighton have been utilized in the building of roads from one hundred feet in length to three thousand feet long. The longest roadway extends from Camp Scott, South Beach, to Sea View avenue, Dongan Hills.

"In the Bureau of Buildings for the past nine months 2,163 plans were filed. This includes plans for 1,101 new buildings, of which 644 are dwellings, with accommodations for 730 families. For the nine months of 1916 there was an increase of five per cent. in building operations over the same period in 1915, and an increase of thirty-five per cent. since 1913.

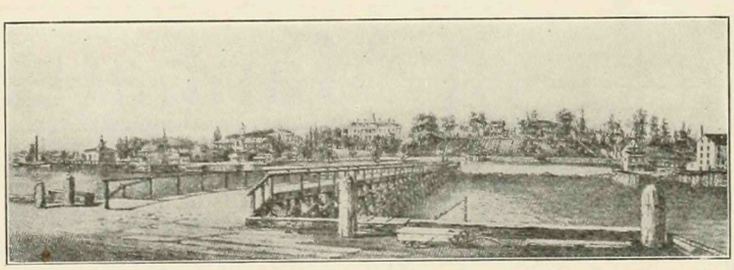
"The inspection patrol in the outlying districts by horse and buggy has been discontinued, and an automobile service is now maintained. It is more economical and efficient.

"The necessity for improving the parks in Staten Island and securing additional reservations were placed before Hon. Cabot Ward, Commissioner of Parks for the Boroughs of Manhattan and Richmond. Maps have been prepared and the Board of Estimate asked to appropriate the money necessary for the purpose.

"The Bureaus of Public Works, Engineering, Building, Street Cleaning, Highways, Sewers, Public Buildings and Offices, have given a high grade service, and obtained results beneficial for the citizens and the betterment of Staten Island.

"The various heads of Bureaus have concentrated their efforts to obtain increased efficiency. That they have succeeded is apparent, and that our people are appreciative is evidenced in the letters of commendation from citizens, testifying to the satisfactory service of bureau heads and employees in the Borough administration."

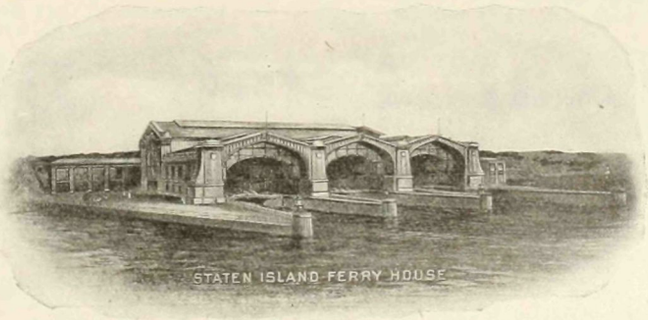
FERRY SERVICE TO STATEN ISLAND



QUARANTINE STATION IN 1858.

THE easterly shore of Staten Island has for many years been called the "Gateway to New York" on account of the Quarantine station being located there. As early as 1799 the State of New York established a Quarantine station at Tompkinsville, probably on account of the advantages of the sheltered anchorage and great depth of water. The old original quarantine station was transferred in 1869 to a new location.

The first ferry from New York to Staten Island owned and originally operated by Captain Vanderbilt, personally, landed its passengers at this point, which was used as a ferry landing for nearly eighty years or until the establishment of the present Municipal ferry service in 1905, at St. George, a short distance north of old landing. The above view shows the general appearance of Tompkinsville in 1858



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THE FUTURE OF STATEN ISLAND PROMISES WELL FOR INVESTORS

By CORNELIUS KOLFF

STATEN ISLAND has had two prophets whose predictions have come true. One was Thomas Davis, the founder of New Brighton in 1837, the man who laid out Richmond Terrace, from the old Quarantine grounds, where the Borough Hall now stands, to West New Brighton; who built the Pavilion hotel, and who clearly in his mind saw what the residential development of Staten Island would some day be. The pictures contained in his prospectus of 1837 substantially shows St. George as it now is. The second prophet was Erastus Wiman, who predicted the industrial development of Staten Island and the development of its water fronts for commercial purposes.

Both of these men were far-sighted men who were ahead of their time and did not reap the reward of their labor, but what they predicted and what they saw has come true. It is safe to say that not since the year of 1905, which was the precursor of the great "boom" of 1906 and 1907, has anything occurred to confirm the prediction or in fact the assurance that we are today on the threshold of the greatest era of prosperity which Staten Island has ever experienced.

To be sure, the one great thing which will be the making of Staten Island, the subway between Richmond and other boroughs, is not yet an assured fact, that is, within the near future. It is safe to assume, however, that in as much as every public measure which has merits and which is sufficiently supported by its advocates, will finally be accomplished, we may safely believe that when the proper moment arrives we will have our subway.

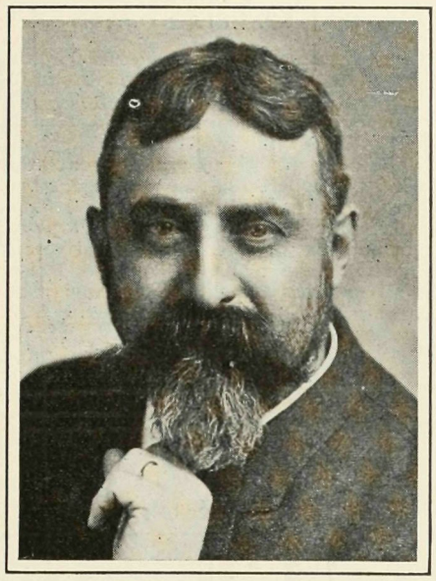
In the meantime, as everything comes to him who waits but "hustles while he waits," the development of Staten Island's water front and factory section has been progressing at a rate which few of us thought possible, and if in addition to the actual improvements the many rumors about coming improvements are considered even at discount rates, the Borough of Richmond will soon be able to give an account of herself as the most active and progressing industrial section of the harbor of New York. We may to some extent borrow some glory from the fact that right across the Kill Van Kull from Staten Island there are two great enterprises going on.

The one is the large shipbuilding establishment being erected by the Bethlehem Steel Company at Elizabethport, N. J., across the Staten Island Sound from Holland Hook. Another great improvement will be the great Bayonne Terminal at Constable's Hook across the Kill Van Kull from New Brighton. Both of these improvements will benefit the opposite shore of Staten Island.

At Mariner's Harbor the Standard Shipbuilding Company, on Shooter's Island, is showing tremendous activity and as it will employ several thousand men, who probably will all live on Staten Island, the Mariner's Harbor section will experience a revival of activity which it has not seen for many years.

The Staten Island Shipbuilding Company at Port Richmond has opened a large yard at Mariner's Harbor and a number of keels for large sized vessels are being laid there. At the foot of Union avenue the Johnson Shipbuilding Company, a new concern, is laying the keels for a fleet of ships to be used in the harbor towing business. Along the East shore of Staten Island things are moving with considerable rapidity.

Dr. Louis A. Dreyfus has purchased the old Doyle coal dock, near the Clifton Boat Club, at Clifton, and is erecting a $300,000 rubber factory, and there is a rumor to the effect that he has purchased the adjoining Rubsam & Horrmann property. To the south of the boat club another sale has recently been made to a shipbuilding concern, reported to be engaged in the manufacturing of submarines.



CORNELIUS G. KOLFF.

At the Clifton crossing the International Warehouse Company's property, embracing some 1,200 feet, is reported to be about to pass into the hands of the interests controlling the American Dock Terminal, at Tompkinsville, and the long looked for extensive improvements of the Baltimore & Ohio Railroad Company along its waterfront facing the Narrows between Tompkinsville and Stapleton have reached a stage which will probably result in actual improvements being made. The Ichabod T. Williams Lumber Company, the owners of some valuable and extensive waterfronts with long pier lines, is having plans made and has filed some elaborate plans with the Dock Department for the erection of five large ocean piers.

These transactions and the many rumors which have taken more or less definite shape, point to the establishment of an industrial and shipping center second to none in size and importance on New York harbor.

What the effect of this will be on real estate values in the immediate and more distant neighborhood is easy to predict. Evidence of activity is already at hand, for go where you please or look where you please on Staten Island, activity and progress is in evidence all over.

Around Port Richmond, Mariner's Harbor, Bull's Head and West New Brighton there are many two-family houses going up, and at Livingston, Brighton Heights, New Brighton and Tompkinsville the more pretentious one-family house is the order of the day.

The old naked hillsides around Tompkinsville and Stapleton are being covered with a fast-growing crop of private dwellings, which apparently find buyers and tenants as fast as they are being erected.

At Rosebank the erection of the large million dollar De Jonge paper factory, probably the most complete of its kind, is fast going up and its numerous employees will naturally create a demand for houses and for real estate in the neighborhood. At Fort Wadsworth there is a large German Orphan Asylum being erected on the Fingerboard Road.

The hill region of the Island, embracing Pavilion Hill, Ward Hill, Grymes Hill, Emerson Hill and Dongan Hills, has shown a great deal of activity. At Dongan Hills, Ernest Flagg and George Cromwell, the most extensive property owners in that section next to David J. Tyson, contemplate the erection of a large number of high grade houses.

At New Dorp there has been considerable activity especially at the New Dorp Garden Colony, on the Amboy Road, and at Camp Hill. The same can be said of all the suburban villages along the south shore, including Oakwood, Giffords, Annadale, Huguenot, Princess Bay and Tottenville. Along the beaches facing the lower bay of New York there is active development from South Beach to Tottenville, and it is safe to assume that in another year or two there will scarcely be any beach fronts unimproved on Staten Island.

It is predicted by those who have their hand on the pulse of the situation that the next activity will be in the line of subdividing acreage property into building lots, as a large amount of the building lots which lay "undigested" for the last few years are now being absorbed by the buying public.

The money market on Staten Island has eased up very much since New York capitalists are no longer showing their prejudice against Staten Island by declining to loan money in the Borough of Richmond.

The influx of money from outside of New York city has had the tendency to establish a certain feeling of confidence in Staten Island mortgages on the part of Manhattan lenders. View the situation from any angle you may, the future of Staten Island is encouraging.

JAMAICA BAY.

(Continued from Page 95.)

Similar development on the part of other owners of large tracts on Jamaica Bay will doubtless be prosecuted just so soon as channels are provided by the United States and the city to points where they can be used. This particular work of development is properly done by private enterprise and generally receives, as it should, the co-operation of the city in a large measure, as it brings revenue to the city in taxes from increased assessed valuation. The plants of the National Lead Company and the Gulf Refining Company have already located on Mill Basin, and a large number of additional manufacturers and distributors have under advisement at this time the location of their plants on that property.

One of the early needs is the preparation of a comprehensive plan of rail facilities to the Jamaica Bay waterfront, so that the best co-ordination of water and rail transportation may be assured before construction for industrial purposes shall have rendered the best layout for general trackage impracticable. In the writer's opinion, the City of New York should have full control of such plans in connection with the rational development of the basins to be dredged.

In his volume entitled, "The Planning of the Modern City," Nelson P. Lewis, Chief Engineer of the Board of Estimate and Apportionment of New York City, referring to the Jamaica Bay project, states: "An essential feature of the project will be the provision of adequate connections with trunk line railroads, so that all can be accommodated on equal terms, and to insure this such a line should be controlled, if not owned and operated, by the city."

It is not known that the city has any intention of co-operating with private enterprise of rail facilities or assuming any special control of such railroads, as to location and rates, which must be built to serve the industrial communities established and to be established on the shores of the new waterfront.

The Jamaica Bay project is bound to succeed eventually to the limits prophesied by its most enthusiastic advocates. The pressing needs of the port of New York now justify the intensive execution of the project to eighteen feet depth. Too much time has been lost in vexatious delays, and patience has ceased to be a virtue. The public interest of the city, the especially interested Borough of Brooklyn. and local private enterprise must co-operate in demanding that a real impetus be given to the execution of the most vital harbor project which the City of New York has on its hands today.

OPPORTUNITIES ON RICHMOND'S WATERFRONTS

Natural Advantages of Staten Island Not Fully Developed —Splendid Chance for Improvement Along Proper Lines

By J. STERLING DRAKE

SOME of the reasons why Richmond water fronts have remained practically stationary for a generation are well understood. The greatest drawback is transportation. In other words, the reason commonly given for the slow growth of the interior residential sections apply with equal force to the residential and commercial water fronts.

Richmond's water front is said to be about 57 miles in length, and assuming this to be true, not more than one-sixth of it is fully utilized.

A trip around Staten Island by water with one who knew and understood the living history would mean a day profitably spent by the capitalist, investor, speculator and modern business man. Could this trip be followed, within a reasonable period, by another one around the island, but on land, the chances are the guide would be swamped with questions. No intelligent human being, who had traveled on the outside and inside rim of Richmond water fronts, could ever reconcile the present chaotic conditions without the "who knows" help.

It is not because Richmond water fronts are unknown and unappreciated that there are so many miles of them vacant and unproductive. Their physical features will stand rigid comparison with the water fronts of the other boroughs and New Jersey. In variety, they include every kind and class to be found in the harbor.

To attempt to give a summary of the facts relating to all the water fronts of Richmond would require a volume. To give prominence here to all the most important things respecting the entire water front of Richmond would not add much if anything to general information.

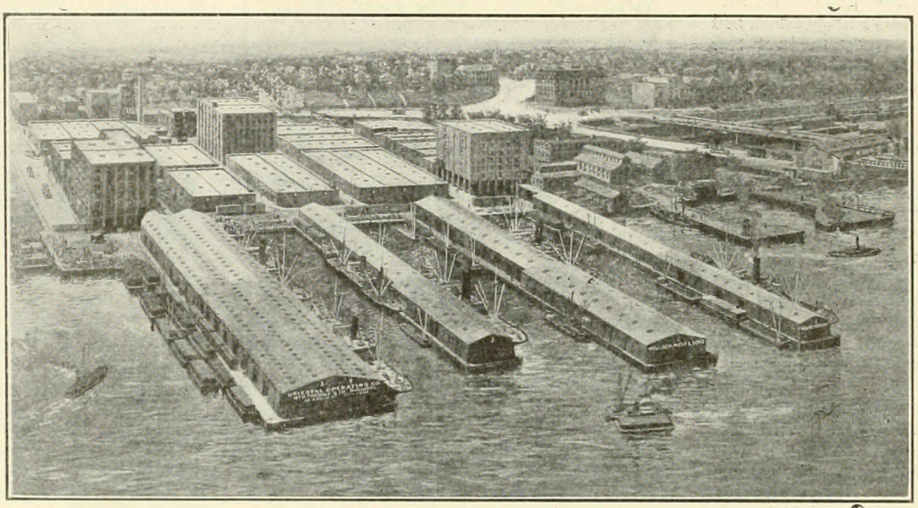
Starting at the Municipal Ferry, St. George, and proceeding southerly along the New York Bay frontage to the Narrows, and then west along the South Shore.

Subdividing this part of the New York Bay frontage into four parts: First from St. George to Clifton and, to be accurate, that point at Clifton where all steam railroads leave the shore and go to the interior. This covers a distance of about a mile and a half, Robinson's Atlas says along the pier line 7513 feet. This stretch has the double track marginal steam railroad, a deep block of level ground only a few feet above tide water before reaching Bay street, running parallel with the shore. And on Bay street, the double-track trolley, this section is also within the free lighterage limits of the harbor. Here the possible pier lengths run from 900 to 1,677 feet and a natural depth of water without dredging at pier line of 40 feet at low tide. It is within five or six miles of Manhattan and, of course, this same distance nearer the Atlantic Ocean, thus saving the steamship ten to twelve miles and one to two hours' time on each trip.

It is important to know the owners and occupants of this frontage and the use that is being made of it. The United States Government Lighthouse Department has 650 feet that they fully utilize and it is really active—no doubt some other less precious location would be just as good in every respect for this purpose and this property could be put to greater and more profitable uses. The American Dock Stores have 950 feet, one of the liveliest spots in Richmond and for that matter in New York, and typical in a commercial sense of the best in the metropolis of the Western Hemisphere.

The next in activity and concentration is Brady's Dock, 100 feet frontage, a beehive of industry, a little gold mine financially, but Brady says it doesn't pay a cent and it's for sale. Ask the price and you will take your hat off to Brady. The former city dock at Stapleton representing 300 feet, now under lease to Martine & Co., as a steamship wharf and warehouse, is fully used and occupied. The Merritt & Chapman Derrick & Wrecking Co. lease 300 feet for a tie-up for their boats, but this property ought to be too valuable to be used in this meagre way.

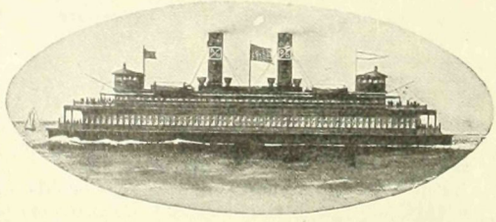
Three ownerships south and adjoining Martine & Co. have a total of 200 feet,



WATERFRONTAGE OF THE AMERICAN DOCK COMPANY.

but since it is divided in this way it is neither useful or profitable. Frontage thus far accounted for is 2,710 feet, and the balance, 4,803, belongs to two owners, viz., I. T. Williams & Sons and the Baltimore & Ohio Railroad. The Williams interests have 2,000 feet, of which they and their lessees use 500 or 600 feet, but even this 500 or 600 feet is not used 10 per cent. of its possible capacity. However, the biggest owner, the Baltimore & Ohio Railroad, operating under the names of the New York Transit and Terminal Co., Ltd., and the Staten Island Rapid Transit Railroad Co., has more than 2,800 feet that is as dead as a cemetery and has been for over twenty years. In the writer's opinion there is no better water front in New York City, but you couldn't prove it by sales (transfers of titles), or superficial indications.

The second stretch begins at the point at Clifton where the railroad turns to the interior of the island and runs from there south 2,000 feet, the physical land remains the same and the accessibility, barring steam railroad, is just as good as the first section, the water depth at pier line fully forty feet, the possible length of piers varies from 1,500 to 1,100 feet, trolley service and free lighterage have been in vogue many years. Bay street, however, at this point skirts the shore, but as a thoroughfare it is negligible and it is only a question of a few years when it will be at least partially used for a marginal freight railroad. Barring a private coal dock, a small marine railway and a boat club house, the waters of New York Bay lap the shore with no more interference than they met with thirty years ago.



The third stretch of about 4,500 feet immediately south of the second stretch is not natural commercial water front, that is to say, while it could be used for that purpose and may have to be ultimately, it is for the present and ought to be for a long time to come, residential and carefully restricted as at Bay Ridge, Brooklyn. This property is beyond the free lighterage limits. It has no reasonably possible steam railroad connection and is several blocks from trolley transportation and a mile from a railroad station. The water depth is too great, the possible pier lengths are only 400 feet to 600 feet, and the shore itself is bluff, some of it rising to a height of fifty feet.

The fourth stretch is the wonderful United States government grounds commonly called Fort Wadsworth, having a frontage on New York Bay, the Narrows and Raritan Bay (South Shore) of about 4,000 feet. No description of this property ought to be necessary for a citizen of New York.

Commencing at the Government grounds and running west along the south shore of Richmond for about four miles we have the following well known beaches in this order: South, Midland, Woodland, Vanderbilt, New Dorp and Cedar Grove. All very much alike, beaches, nothing else, physically equal in every respect and differing principally in the personality of their summer occupants or patrons. The channel commencing with the easterly line of South Beach is a mile from the shore and gradually recedes until it is more than three miles from the shore at New Dorp Beach.

South Beach is more generally known because it is easier and quicker to reach and it is the only beach that has steam railroad service. It is made up of numerous independent ownerships and enterprises.

Midland Beach is the second most popular and widely known beach and is owned by a corporation, who lease the concessions, but hold themselves to a great extent responsible for the character and reputation of the resort.

Both South and Midland beaches have direct trolley service and generally direct steamboat service. There is also an independent trolley service between the beaches, which serves the camps and bungalows along the line. Between South and Midland beaches is the "Tent City" and bungalow colony.

To Jersey By Tunnel.

Property owners on Staten Island have for a long time been agitating the need of connection to New Jersey by tunnel, so that a marginal freight railroad might serve the industrial area on the west bank of Staten Island. If connection were also made by way of Richmond with Manhattan, Brooklyn, Long Island and the Eastern states, it is contended that all the terminals within the Port of New York would be connected, and would be available to shippers on an equal basis. This development, in the opinion of many familiar with conditions would be a most desirable one.

LEGISLATION WHICH AFFECTED BUILDING

Lockwood-Ellenbogen Bill and Zoning Resolution Measures of Utmost Importance to Builders and Architects

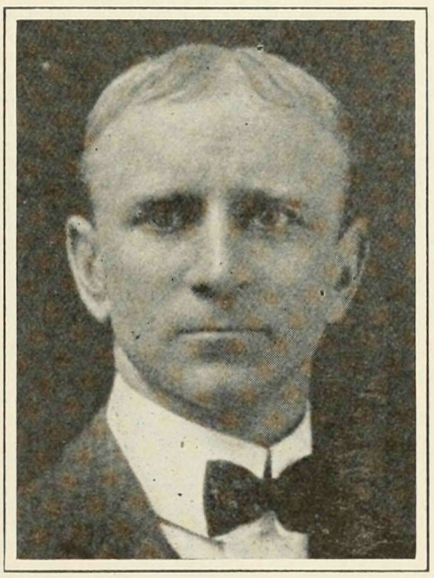
By ALFRED LUDWIG, Superintendent of Buildings, Manhattan

THE year 1916 has been made eventful by the passage of two most important pieces of legislation, which will have a most vital and far-reaching effect upon building construction generally in the Greater City. On May 10, 1916, a new law in relation to the construction and alterations of buildings was approved by the Governor. This law is commonly known as the Lockwood-Ellenbogen Bill, and places exclusively in the hands of the Superintendent of Buildings all jurisdiction over the construction and alteration of buildings, subject only to such general rules and regulations as may be made by the Board of Standards and Appeals, created by this measure. This will largely tend to do away with the necessity for obtaining the approval of many departments and bureaus, which has been formerly required.

The most important feature of the law is the establishment of two new Boards, one known as the Board of Standards and Appeals and the other as the Board of Appeals, the latter superseding the old Board of Examiners, which formerly had jurisdiction over appeals relating to building construction. The Board has power to test materials to be used pursuant to law, and to make investigations concerning all matters relating to the enforcement and effect of the provisions of the Building Code, and the rules and regulations made by the Board; make, amend and repeal rules and regulations for carrying into effect the provisions of the laws, ordinances and rules and regulations in respect of any subject or matter, jurisdiction whereof is conferred upon the Board by this act, or upon a Superintendent of Buildings of Title Two of Chapter Nine of this act or by ordinance or upon the Fire Commissioner by Title Three of Chapter Fifteen of this act or by ordinance, and to include in such rules and regulations provisions applying to specific conditions and prescribing means and methods of practice to effectuate such provisions and for carrying into effect the powers of the Board. Such rules and regulations shall take the place of rules and regulations made by a President of a Borough, a Superintendent of Buildings or the Fire Commissioner; make, amend and repeal rules and regulations regarding the enforcement of those provisions of the Labor Law and other laws which relate to the construction, alteration, structural changes in, plumbing and drainage of, elevators, fire escapes on, adequacy and means of exit from and fire alarm systems in all buildings, except tenement houses, within the City of New York. All rules and regulations made by the Board pursuant to this section, shall take the place of the Industrial Code and of any rules or regulations of the Labor Department relating to the same subject matter. Exercise exclusively with respect to buildings situated in the city of New York and the same powers as are conferred upon the Industrial Commission by chapter 719 of the Laws of 1915.

While formerly the jurisdiction of the Board of Examiners was limited to appeals from decisions or determinations of the Superintendent only in cases where a thousand dollars or more was involved, the new Board of Appeals can hear appeals regardless of the amount involved. In addition, an appeal can be taken to this Board from any order, requirements, decision or determination made by any Superintendent of Buildings except an order requiring an unsafe building, staging or structure to be made safe, and except an order punishing, removing or dismissing an employee, inspector or other subordinate, or made by the Fire Commissioner.

Probably the greatest piece of constructive legislation that has been enacted in any municipality in a generation is the Building Zone Resolution. This resolution, passed by the Board of Estimate, under date of July 25, 1916, not only restricts or limits the heights of buildings, but also provides for proper light, air and ventilation and, in addition, for certain restrictions as to use or occupancy in certain sections of the city. This resolution interdicts the erection of factory buildings in the so-called residential or business districts, except that a business building may use not more than 25 per cent of its area for factory purposes. Garages having a capacity of more than five motor vehicles will be prohibited in general in both business and residential districts. In general, the idea of the resolution is to set aside certain districts for residential purposes, other districts for purely business purposes, leaving the unrestricted districts for factories, garages and general use.



HON. ALFRED LUDWIG.

It may be interesting to call attention to the very large number of plans that were filed in July, the month preceding the passage of the Building Zone Resolution, the total amounting to approximately $45,000,000. In all probability at least fifty per cent. of the buildings filed will be actually erected. The value of the new buildings filed for 1916 will approximate $112,000,000, and the alterations about $19,000,000. This makes 1916 a banner year. Of course, this great increase is due to the passage of this resolution.

Under date of November 16, 1916, the Mayor approved an amendment to Section 538 of Article 25 of Chapter (Building Code) which is made to read as follows:

> Saving Clause. The provisions of the foregoing article shall not be construed to mean or made to apply to any theatre, opera house or building intended to be used for theatrical or operatic purposes, lawfully erected prior to June 3, 1904, nor to any public dance hall which was approved by the Superintendent of Buildings having jurisdiction and which was licensed as a public dance hall on September 30, 1916.

This amendment was enacted in order to provide relief to owners or lessees of dance halls which were adversely affected by Justice Shearn's decision which appeared in the Record and Guide under date of September 23, 1916.

PAST DECADE OF CONSTRUCTION IN MANHATTAN AND THE BRONX

MANHATTAN.

	No. of Bldgs.	Total Estimated cost.
1907.		
Total No. of Bldgs. Proj...	931	$73,028,350
Lofts	132	11,297,200
Offices	61	21,116,500
Apart. Houses	309	27,081,500
1908.		
Total No. of Bldgs. Proj...	607	$79,209,826
Lofts	143	9,480,100
Offices	46	34,980,050
Apart. Houses	210	25,925,500
1909.		
Total No. of Bldgs. Proj...	940	$122,139,062
Lofts	220	30,086,450
Offices	34	12,656,750
Apart. Houses	459	70,041,000
1910.		
Total No. of Bldgs. Proj...	781	$92,925,369
Lofts	230	30,534,700
Offices	44	12,390,600
Apart. Houses	208	36,923,000
1911.		
Total No. of Bldgs. Proj...	840	$98,537,275
Lofts	175	20,943,100
Offices	51	19,591,800
Apart. Houses	194	29,178,000
1912.		
Total No. of Bldgs. Proj...	757	$116,325,135
Lofts	156	29,864,200
Offices	48	30,501,000
Apart. Houses	182	30,452,000
1913.		
Total No. of Bldgs. Proj..	553	$70,074,585
Lofts	73	13,008,000
Offices	20	19,790,000
Apart. Houses	158	22,267,200
1914.		
Total No. of Bldgs. Proj...	396	$44,615,065
Lofts	59	9,284,000
Offices	14	7,190,000
Apart. Houses	133	18,916,000
1915.		
Total No. of Bldgs. Proj...	488	$64,652,869
Lofts	60	18,618,500
Offices	24	5,535,000
Apart. Houses	193	24,960,500
1916.		
Total No. of Bldgs. Proj...	564	$114,690,145
Lofts	66	18,030,650
Offices	43	12,651,600
Apart. Houses	183	37,841,500

BRONX.

	No. of Bldgs.	Total Estimated cost.
1907.		
Total No. of Bldgs. Proj...1,923		$20,070,544
Lofts	63	814,700
Offices	4	39,500
Apart. Houses	373	8,663,700
1908.		
Total No. of Bldgs. Proj...1,797		$20,015,555
Lofts	94	1,260,100
Offices	12	266,000
Apart. Houses	870	29,252,500
1909.		
Total No. of Bldgs. Proj..2,241		$37,776,210
Lofts	55	235,700
Offices	4	12,100
Apart. Houses	437	10,642,706
1910.		
Total No. of Bldgs. Proj..2,026		$44,034,405
Lofts	127	1,205,450
Offices	23	640,875
Apart. Houses	971	34,920,000
1911.		
Total No. of Bldgs. Proj...1,357		$22,837,060
Lofts	93	971,375
Offices	28	710,000
Apart. Houses	372	14,500,000
1912.		
Total No. of Bldgs. Proj...1,310		$34,644,400
Lofts	66	734,950
Offices	17	740,875
Apart. Houses	607	25,193,500
1913.		
Total No. of Bldgs. Proj...	823	$20,057,689
Lofts	40	266,750
Offices	11	88,225
Apart. Houses	330	14,950,851
1914.		
Total No. of Bldgs. Proj...	708	$16,259,782
Lofts	44	329,800
Offices	9	102,150
Apart. Houses	269	12,226,000
1915.		
Total No. of Bldgs. Proj...	942	$27,922,200
Lofts	55	351,600
Offices	5	126,200
Apart. Houses	474	22,012,000
1916.		
Total No. of Bldgs. Proj...	650	$16,725,582
Lofts	48	429,200
Offices	7	194,050
Apart. Houses	224	12,012,000

PROGRESS NOTED IN BUILDING IN BROOKLYN

Borough of Homes Benefited by Transit Lines Now in Operation and in Course of Construction

By P. J. CARLIN, Superintendent of Buildings, Brooklyn

THE final compilation of figures covering the activities in the building lines in Brooklyn during 1916 demonstrates that while the year's totals are considerably lower than those of 1915, the renewed building activity for the weeks of the new year warrant the prediction that 1917 will show much better results when the final figures are available. There is a strong feeling throughout the building and allied trades that the time is ripe for another boom period in Brooklyn, and that its commencement is not far off. The figures for last year compared with those of 1915 indicate a decrease of nearly $5,000,000 in capital invested. In 1915 there were nearly two hundred more plans filed than were entered last year.

Brooklyn's total figures for building operations would have been greatly augmented had the slip applications, for structures costing less than $1,000, been taken into consideration in the preparation of the total for the year. Approximately 1,500 of these applications were filed during 1916, having a total valuation of about $500,000, which, if added to the published totals of new buildings, would have brought the figures up to an amount slightly in excess of the new buildings filed in the Borough of Queens, in view of the fact that in the latter borough small workshops, frame sheds, stables and garages and structures of a similar nature are classed as new buildings.

Brooklyn has always been noteworthy as a "Borough of Homes," and it is but natural that the construction last year should have concerned itself principally with operations residential in character. The year, however, witnessed the construction of a substantial number of business and industrial buildings, including factories, lofts, workshops, offices and store buildings. Many structures of public or semi-public nature, including churches, schools and institutional buildings, were also erected. The completion of these industrial and commercial structures no doubt has been one of the prime reasons for the increased number of dwellings built, as their erection created a demand for housing facilities in the immediate neighborhood of the new commercial enterprises.

Areas benefited by the new rapid transit facilities experienced considerable growth during the year, but by no means has the borough's building development been confined to these sections. The building growth of the borough has been almost general, and practically all of the outlying sections have witnessed increased activity. The steady progress of work on the rapid transit systems both actually under construction as well as those proposed, has encouraged real estate trading in sections covered by the new routes, and the acquisition of desirable building sites that will shortly be improved.

The bulk of the building operations in Brooklyn chiefly concerned itself with the erection of one and two-family dwellings and four, five and six-story tenements. A large number of high class multi-family houses, including some elevator apartments, were also erected in the better residential parts of the borough, and these have been, almost without exception, fully rented. The Flatbush section, Park Slope and the Heights were the districts in which the best type of apartments were built, and in these localities the demand for accommodations in buildings of this character still exceeds the supply.

The operation of the Fourth avenue subway and the completion of other sections of the rapid transit system has done much to enliven activity in the zones covered by these routes. Improved transit facilities are now in operation in many parts of the borough. The Bay Ridge and Fort Hamilton sections have held the interest of many speculative builders and investors. These localities have experienced what might well be termed "boom" times, for the total number and cost of the building activities in these parts reached a very high figure. Bay Ridge, particularly, was favored in this movement and the end is not in sight.

The Twenty-sixth Ward, which includes the Brownsville section, one of the most congested residential districts of the entire city. contributed a large part toward the total of tenement house construction, and this section looks forward to a continued growth during 1917.

During 1916 housing facilities were provided in the Borough of Brooklyn for a total of 13,000 new families, and the influx of this population totaling, approximately, 65,000 persons, tended toward the creation of a natural demand for many new structures designed for their housing, and also for their educational, religious and recreational needs. The result was the erection of homes and apartments, stores, churches, schools, theatres and institutional buildings of many creeds and denominations. Despite the falling off in building operations last year as compared with 1915, present indications warrant the statement that equal, if not improved, conditions will prevail before the close of 1917.

With the records of past years as criterions, and a basis for judgment, it may be reasonably assumed that 1917 will mark an even better period of activity for the building trades in Brooklyn. Loaning institutions and other financiers of building projects are showing a disposition to place their funds for the construction of local projects where the proposed operation is in keeping with the character of the neighborhood and is in response to an actual and healthy demand. Predictions are made that the current year will witness the opening of vast new areas in several growing sections of the borough to residential improvement, and it is probable that considerable of the capital now available will be released for the upbuilding of these territories.

The work of the various divisions of the Building Bureau has been accomplished with greatly increased efficiency. The Unsafe Building Division, in addition to supervising conditions in unsafe structures and caring for emergency cases, has instituted surveys of all the buildings along the lines of the proposed subways with the view of showing the structural state of the buildings before the beginning of subway excavations. This division also keeps a watchful eye on the structures along the lines of the spbways during construction, in order to discover whether they are being structurally affected in any manner. The sphere of activity of this division also includes examinations of the structural conditions of the various amusement devices in Brooklyn's many pleasure resorts, notably Coney Island, Brighton Beach and other places of a like nature.

As a result of the amendment to the Building Code passed by the Board of Aldermen, semi-annual inspections of all freight elevators has been made mandatory, and the duty of inspection devolves upon a force of seven inspectors to inspect 532 passenger elevators four times a year and 4,595 freight elevators twice a year, a total of 11,318 annual inspections, in addition to the work they are regularly called upon to do.

The testing laboratory of the Bureau has proved both valuable and instructive to the inspectors. Whenever a question arises between an inspector and a builder in regard to quality or mixture of materials, as to whether or not they comply with the requirements of the Building Code, a sample of the disputed article is brought to the laboratory, where it is tested for its strength and analyzed as to the proportion of its component ingredients. As a result of this test, the dispute in question may be immediately and finally settled. There have been no serious accidents due to building conditions in the borough during the year over which the Bureau of Buildings has had control. It is to be expected, however, that slight accidents should occur in a borough which during 1915 alone had plans filed for 3,610 new structures. The few minor happenings that did come within the jurisdiction of the Bureau were promptly reported and settled.

The Revised Building Code that was placed in operation in March, 1916, and which forms Chapter 5 of the Revised Code of Ordinances, is a careful revision of the old code. It fully describes the kind and quality of materials that may lawfully enter into the construction of buildings and clearly fixes the working stresses and loads. The old code was rather uncertain on the matter of light and ventilation, and Article 7 of the new code, all new matter, provides that all rooms in residences, business and public buildings shall be properly lighted and ventilated. Article 8 is also a new chapter, and relates to the proper exiting of buildings, clearly defining the requirements for exit facilities.

The old code contains no provision covering reinforced concrete construction. Article 16, of the new code, is devoted entirely to this subject. Article 18 relates to the safeguarding against fire and provides considerably more protection in the form of fire walls, fire partitions, shaft enclosures and interior and exterior openings. Article 19 thoroughly covers the installation of heating apparatus, and provides for three classes of chimneys, according to the heating devices used, viz.: low, medium and high pressure. This article also requires that whenever a wall is built along a party or property line, and that wall is erected higher than the chimneys of the adjoining building, on the party line, or within three feet of that line, the chimneys are to be carried up by the owner or builder of the wall in course of erection, a very desirable provision.

STREET ELEVATION.

Height in Feet Above Tidewater of Some Prominent Thoroughfares in Brooklyn.

Atlantic avenue and Furman street...	7
Clymer street and Kent avenue.....	9
Franklin and Flushing avenues.....	12
Union street and Gowanus Canal....	14
Bridge street and Myrtle avenue.....	37
Franklin and Myrtle avenues.....	43
Atlantic and Flatbush avenues.....	45
Grand street and Bushwick avenue...	47
Atlantic avenue and Court street.....	49
Fourth avenue and Fifteenth street..	50
Myrtle avenue and Adams street.....	61
Bedford avenue and Fulton street....	63
Broadway and Myrtle avenue.....	67
Atlantic and Vanderbilt avenues.....	71
Fulton and Cumberland streets.....	77
Atlantic and Saratoga avenues.....	97
Fulton street and Hopkinson avenue.	103
Flatbush and Vanderbilt avenues....	125
Eastern Parkway and Franklin avenue.	134
Ninth avenue and Union street.....	142
Ninth avenue and Fifteenth street...	151
Seventh avenue and Twenty-second street.	153
Ninth avenue and ninth street.....	156
Ninth avenue and 20th street.....	175

(Highest point in street system.)

Ninth avenue is also called Prospect Park West. Highest point in Brooklyn is in Greenwood Cemetery near Ninth avenue entrance.

BUILDING OPERATIONS IN THE BRONX AGGREGATE ALMOST $20,000,000

By ROBERT J. MOOREHEAD, Superintendent Buildings, Bronx

DURING the year 1916, building operations in the Borough of the Bronx decreased to some extent, which was to be expected owing to the high cost of materials, the scarcity of labor and other causes. I know of many extensive building projects contemplated in the early part of the year, which were subsequently postponed until more favorable conditions prevail. Nevertheless, the amount expended for new buildings and alterations in this Borough during 1916, approximates nineteen or twenty millions of dollars, which is a decidedly good showing under the circumstances.

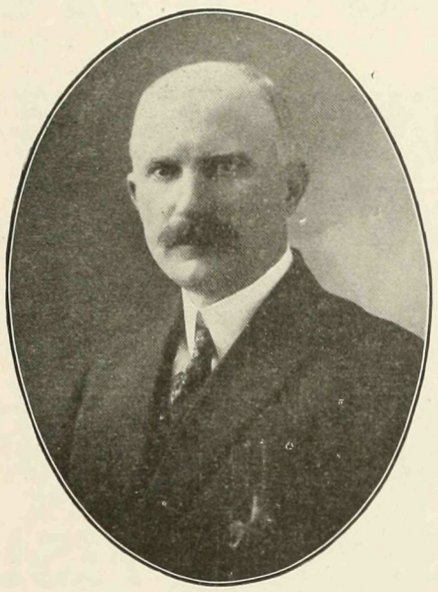
Apartment house construction is a noteworthy feature of the Bronx, and the steadily increasing demand for living accommodations has interested many builders and investors, who, appreciative of the great possibilities in the Borough, have erected during the past five years 1,950 apartment houses at an estimated cost of $88,192,351 with 42,962 living apartments capable of accommodating nearly 200,000 persons. This development has not been confined to any particular section, but has been general throughout the Borough, although there has been exceptional activity during the past few years on and adjacent to the Grand Boulevard and Concourse, and in the University Heights and Highbridge sections of West Bronx.

The development of a community is stimulated by improvements in its transit facilities. Up to ten years ago the Third Avenue Elevated Railway was the only transit line in operation connecting with Manhattan, its total mileage in The Bronx being about five miles. From 1884 to 1903 inclusive, a period of twenty years, approximately $140,000,000 was invested in new buildings in this Borough, an average of $7,000,000 per year. From 1904 to 1916 inclusive, in thirteen years, during which period the West Farms subway and elevated line was completed, adding about four miles to the transit lines in operation, $360,000,000 was invested in Bronx building operations, an average of nearly $28,000,000 per year.

At the present time, about twenty miles of new subways and elevated railroad extensions are under construction, which when completed will open up and develop West Bronx by means of the Jerome avenue extension, East Bronx by means of the Lexington avenue subway to Pelham Bay Park and North Bronx by means of the Third Avenue Elevated Railroad's extension and the White Plains avenue extension from West Farms. With the operation of these new lines of transportation, building development in The Bronx will be materially revived, and a remarkable activity will certainly follow.

The new Zoning Resolution adopted July 25, 1916, by the Board of Estimate is proving generally satisfactory to owners, and immense benefit in the future is bound to accrue to The Bronx. The encroachment of business on the Grand Boulevard and Concourse threatened for a time to mar the beauty of this fine thoroughfare, but the resolution now restricts it to residential uses, which will be a lasting benefit and will preserve its beauty for all time.

The industrial situation in the City of New York is a puzzling one. Undoubtedly the Borough of The Bronx is better equipped than any of its sister boroughs for the accommodation of large manufacturing plants, but for some reason, manufacturers hesitate to establish their factories here. Manhattan land is generally too valuable for factory use, Brooklyn and Queens lack many advantages enjoyed by The Bronx, and Richmond is too distant from the business centres. In the Bronx, however, the environments are ideal for industrial development, in that it is adjacent to Manhattan, which is a decided advantage, and its forty miles of navigable water front are particularly adapted for shipping.



ROBERT J. MOOREHEAD.

The Bronx has exceptional housing facilities for industrial workers with excellent surface transportation to and from all points. Under the circumstances it is but natural to expect that factories will eventually line its waterfront and contribute to its prosperity.

Among the large factory buildings planned in The Bronx during 1916 may be mentioned the following: Dyes, 174th street and Park avenue, $70,000; pianos, Bronx Boulevard and Nereid avenue, $80,000; automobiles, Third avenue and 134th street, $80,000; ice, 170th street and Third avenue, $125,000; ice, 156th street and Mott avenue, $75,000; ice, 168th street and Park avenue, $150,000; laundry, 153d street and Mott avenue, $112,500; warehouse, 141st street and Southern Boulevard, $160,000.

In addition to the above, numerous small factories were erected at an aggregate cost of about $100,000. It would be well for manufacturers not to overlook The Bronx when they seek to locate new factories. Many land owners are ready to build on available sites and make reasonable terms.

Summing up the situation, I am of the opinion that The Bronx is the most progressive of all boroughs, healthful and sanitary conditions abound, and with improved transit facilities and 4,000 acres of parks, the most beautiful in the world to attract home seekers, more than 1,000,000 people will inhabit the Borough within three years, a population that will be exceeded only by Manhattan, Brooklyn, Chicago and Philadelphia.

RENTAL RETURNS BASIS ON WHICH STABILITY OF REALTY DEPENDS

By RICHARD M. HURD, President, Lawyers Mortgage Co.

THE mortgage market in New York depends upon the value and convertibility of New York City real estate, and this in turn is based upon the amount and stability of the net rents of property. The element of cost in administering properties during the year has been diminished by a consolidation of departmental orders which had formerly been burdensome in number and sometimes contradictory as between different departments.

Many property owners have been severely harassed by tenement house alterations or fire protection improvements, but the ultimate result has been safer and better buildings and sometimes an advancement in rent. A further item of the greatest importance in stabilizing values is the new Zoning system, which will prevent the rapid shifting of specialized districts in New York with the disastrous effects which they have wrought in certain districts.

New building has not kept pace with increased population, nor with increased business demands due to expansion of various forms of business on account of war conditions. The immense prosperity in so many lines in America has resulted in New York City in an increased demand for store, office, loft and manufacturing space and in higher wages to employees, which in turn has brought about higher rentals for apartments, flats and tenements.

Renting conditions, both as to the high level of rents and the small amount of vacancies, are said to be stronger than ever before. This renting condition causes the mortgage market to be in a safe condition for investors. The past two or three years of depression with lower real estate values has reduced the borrowers' demands and caused all lenders to be more conservative. To any one observing the long time movement of stocks, commodities or real estate, there are times when they sell for less than their value as well as times when they sell for more than their value. If the present high rentals in New York remain steady, much of the real estate here is now selling below its value.

Despite the large offerings of foreign securities, the demand for safe New York City guaranteed mortgages keeps up and the interest level is maintained at 4½ per cent. In view of the enormous monthly balance of trade in favor of the United States, with the consequent piling up of money here, it would appear probable that interest rates should remain at the same level.

Table of Measurements.

7.92 inches make 1 link.
25 links made 1 rod.
16.50 feet make 1 rod.
4 rods make 1 chain.
10 chains make 1 furlong.
8 furlongs make 1 mile.
320 rods make 1 mile.
5,280 feet make 1 mile.
10 square chains make 1 acre.
160 square rods make 1 acre.
640 acres make 1 square mile.
43,560 square feet make 1 acre.
69 geographical miles make 1 degree.
1.728 cubic inches make 1 cubic foot.
27 cubic feet make 1 cubic yard.
Gunter's chain, 22 yards of 100 links.
A section is 640 acres.
A township is 36 sections, each 1 square mile.
A span is 9 inches.
A hand — horse measurement — is 4 inches.
A knot—nautical—is 6,086 feet.
A fathom—nautical—is 6 feet.
A stone is 14 pounds.
A square acre is 208 7-10 feet on each side.

Contents of Fields and Lots.

220x198	feet of land equals 1	acre
440x 99	feet of land equals 1	acre
110x396	feet of land equals 1	acre
60x726	feet of land equals 1	acre
120x363	feet of land equals 1	acre
240x181 1-2	feet of land equals 1	acre
200x108 9-10	feet of land equals 1-2	acre
100x145 2-10	feet of land equals 1-3	acre

There are 12 city lots, 25x100 feet, in an acre with the streets cut through; 17 424-1000 city lots, 25x100 feet, in an acre without the streets cut through.

Square Measure.

Surface or Square Measure—144 square inches equal 1 square foot; 9 square feet 1 square yard; 30¼ square yards 1 measure; 20 feet on each side and you have about a square rod; 41 square rods 1 square rood; 4 square roods 1 acre; 640 acres 1 square mile; 4,840 square yards 1 acre.

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Ribbed "Wire Glass"
Factrolite "Wire Glass"

"Apex" Polished Figured Glass
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Rough and Ribbed Glass

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Syenite
Figure No. 2
Pentecor
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BUILDING ACTIVITY IN QUEENS BOROUGH

1916 Surpasses All Previous Records—Figures and Statistics Show Where Principal Developments Took Place

By JOHN W. MOORE, Superintendent of Buildings, Queens

THERE is no question asked more often of the Superintendent of Buildings than the question of, "How does this year compare with last and what are the prospects for the next year?" The Superintendent of Buildings in the Borough of Queens is fortunate to be able to reply generally that each succeeding year is better than the preceding one and to speak optimistically of the future.

The building operations in 1915, including new buildings and alterations, amounted to $21,000,000, and the year 1916 shows substantially the same conditions that prevailed during 1915. The situation justifies the predictions oftimes made and exemplified by the Departmental records, that it would be the year of Queens' greatest development in the building line. This development, when analyzed, will be found to have followed the new lines of transit of the proposed new lines, namely: for two or three blocks on either side of Liberty avenue in the Woodhaven section, two or three blocks north and south of Jamaica avenue and Richmond Hill sections, in Astoria in the First Ward and along the proposed elevated railroad, which is nearly completed in the Elmhurst and Corona sections.

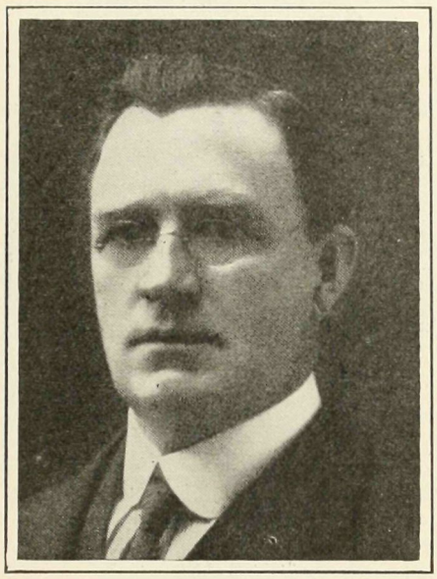
Considerable building has been done along the Metropolitan avenue extension of the elevated railroad, but this has been customary for several years back, which was accounted for owing to its proximity to the elevated line which runs to the Borough line from Brooklyn. The activity seems to have confined itself to no special class of buildings, every character being represented. We find two theatres nearly completed during the year, approximating in cost $200,000; one situated in Ridgewood and the other in Long Island City, a distance of ten miles apart.

The industrial development in Long Island City is as active as ever, including eleven buildings totaling in cost $1,125,000. The industrial activities have extended to sections where buildings of that class were never before located; namely, among which might be mentioned the Nathan Manufactory, in Flushing, with buildings costing $250,000; others in Corona and Flushing, involving in the neighborhood of $100,000 each. The Telephone Company is erecting buildings to care for their increased business in Ridgewood by the erection of a building costing $150,000, with others in Rockaway and other parts of the Borough not so pretentious in cost or size.

One and two-family houses throughout the Borough are holding their own with last year. This means approximately four thousand buildings costing $15,000,000. For the first time in the history of the Borough of Queens, the First Ward takes second place in the matter of the erection of tenements with a total of $1,657,000; the Second Ward now taking first place with a total of $2,124,500, but in connection with this it is well to observe that the class of buildings erected in the First Ward is of a superior type to those erected in the Second Ward. The figures for number in the First Ward are seventy-nine, and in the Second Ward 184. The Third, Fourth, and Fifth Wards appear to maintain their character as one and two-family house residence districts.

The banking interests appear to be erecting buildings to take care of their business; a new bank being erected in Bayside and another in College Point. In fact, there is no business that I know of that is not represented this year in the building activity, even the fraternal societies contributing their share. The Masonic Order is erecting a building in Elmhurst costing $30,000.

Twice during the year the building activities seem to have received a severe check; the months of January and February running considerably behind the same periods of 1915 and again in July and August. At the end of June the figures compared with 1915 showed to the advantage of 1916 to the extent of $3,000,000. On September 1, this favorable balance had been wiped out, and the two years, 1915 and 1916 were running neck and neck in the matter of estimated cost of plans filed.



JOHN W. MOORE.

I attribute the inactivity in these two months to the high cost of materials and to the fact that owners were making up their minds as to whether they would stop or go ahead. They seem to have determined to go ahead in spite of the fact that the cost of materials is high, and sensibly, too, for in my judgment there is no better place to invest money than in this Borough, there being no idle apartments, thus making the buildings erected paying propositions. If erected to sell, these buildings are easily marketed.

We have at last begun to hear about the rush hour here in Queens; it is the same hour that we have heard about for years in Manhattan and Brooklyn, the hours when people go to and from their work, but the peculiar thing about the rush hour in Queens is that the rush is going both ways and apparently there are more residents from other places coming into Queens in the morning engaged in work here and going back to Manhattan or some place else in the night than there are Queens people leaving the Borough for business, which can be demonstrated to the satisfaction of anybody who cares to travel on the new Subway between the hours above stated. This is accounted for because there are not sufficient apartments and residences in Queens to accommodate the people who work here.

I have stated above that I believe the building activity in Queens was caused by the completed rapid transit facilities already obtained or those in immediate prospect. During the current year the ones in prospect will be put in operation and unless something unforeseen appears, with the present prosperity in all lines, I predict that the present year will even surpass last year, the best we ever had, as our commercial development is of a permanent character and not caused by the war in Europe.

DEEDS AND MORTGAGES FILED DURING PAST SEVENTEEN YEARS

MANHATTAN CONVEYANCES.

Year.	No.	Amount.
1900	9,947	$96,848,579
1901	10,371	143,249,517
1902	12,850	128,037,736
1903	14,005	101,713,606
1904	16,356	63,273,053
1905	21,744	78,574,235
1906	20,113	63,788,897
1907	12,054	46,957,390
1908	9,865	41,211,503
1909	10,679	46,729,942
1910	9,941	48,301,278
1911	9,092	45,007,144
1912	8,690	56,722,357
1913	7,670	40,527,760
1914	7,158	33,684,192
1915	6,751	52,352,385
1916	7,126	42,851,184

MANHATTAN MORTGAGES.

Year.	No.	Amount.
1900	10,699	$234,546,052
1901	10,870	265,471,153
1902	10,932	277,758,409
1903	11,983	255,764,997
1904	15,207	296,0[illegible],188
1905	20,318	473,204,658
1906	18,349	380,736,910
1907	11,765	310,266,876
1908	8,678	271,661,427
1909	9,273	308,250,903
1910	8,042	304,549,779
1911	7,166	295,748,432
1912	6,003	285,429,930
1913	4,844	170,448,090
1914	3,973	118,644,880
1915	4,286	98,645,036
1916	3,532	106,362,710

BRONX CONVEYANCES.

Year.	No.	Amount.
1900	4,634	$11,027,679
1901	4,216	10,808,748
1902	4,415	9,614,686
1903	4,644	7,361,989
1904	8,017	11,891,807
1905	12,873	12,605,637
1906	11,927	8,092,601
1907	8,864	7,017,783
1908	7,523	5,759,127
1909	7,304	4,469,421
1910	6,966	6,249,250
1911	7,111	5,028,200
1912	7,716	9,953,768
1913	7,558	6,373,739
1914	6,028	6,636,156
1915	5,661	7,613,168
1916	5,585	6,429,410

BRONX MORTGAGES.

Year.	No.	Amount.
1900	4,211	$36,582,744
1901	3,787	19,908,297
1902	3,396	17,394,254
1903	3,541	16,700,183
1904	6,118	35,689,171
1905	10,178	85,468,481
1906	9,276	65,233,404
1907	7,827	68,713,799
1908	7,074	43,019,639
1909	7,682	65,943,483
1910	6,712	61,317,429
1911	6,039	59,502,375
1912	5,894	52,840,291
1913	5,559	38,993,497
1914	3,631	30,534,372
1915	3,481	31,016,217
1916	3,499	29,147,452

BROOKLYN CONVEYANCES.

Year.	No.	Amount.
1900	15,814	$25,101,230
1901	16,231	24,127,386
1902	18,440	26,543,419
1903	21,959	24,896,452
1904	30,830	26,992,910
1905	41,788	28,339,803
1906	46,218	26,615,524
1907	32,575	19,011,059
1908	27,043	17,191,412
1909	27,897	13,884,334
1910	26,815	13,078,528
1911	25,346	13,115,669
1912	24,651	13,412,754
1913	23,668	13,357,404
1914	22,737	14,056,702
1915	22,095	17,810,772
1916	22,830	14,495,451

BROOKLYN MORTGAGES.

Year.	No.	Amount.
1900	12,534	$53,050,780
1901	12,343	67,889,940
1902	13,061	59,682,730
1903	16,334	70,565,822
1904	24,464	107,933,656
1905	36,457	192,563,393
1906	39,420	162,574,512
1907	33,034	139,683,056
1908	25,444	90,886,879
1909	29,949	106,881,086
1910	24,552	107,070,325
1911	22,088	96,213,669
1912	19,434	79,943,485
1913	16,926	67,724,782
1914	16,313	67,054,240
1915	17,716	71,706,401
1916	17,321	73,845,742

REINFORCED CONCRETE IN FAVOR FOR INDUSTRIAL BUILDINGS

By J. P. H. PERRY, of Turner Construction Co

THE past year in the reinforced concrete industrial building business has been made notable for the magnitude of the operations authorized and largely completed. The volume of average sized buildings let out on contract has also been greater than at any time in the past. This has astonished many of the men in the business because the increase in cost of materials entering into buildings has been the greatest ever known in the trade, and yet in spite of an increase over the 1913-1914 low prices of probably thirty-five per cent. and an increase over normal times of from eighteen to twenty per cent. in cost of concrete buildings erected, the industrial executive has rarely, as far as the writer's experience is concerned, refused to authorize construction if it was needed.

Compared to the jump in cost of manufacturing equipment, concrete construction has scarcely moved upward at all. Not only have machinery prices gone soaring, but in many instances the equipment cannot be obtained for very long periods. Several industrial operations have been abandoned, owing to such machinery delivery difficulties. The managers' minds are more on production costs than on building costs.

Some speculative work has been postponed because of the high market, but the industrial executive usually looks at his concrete building as an effective tool and if he can make money with the high-priced tool he doesn't hesitate to buy it. Furthermore, the cost of the building is not much over a third or a half at the most of the cost of the building ready to turn out the manufactured product, the machinery equipment being always a very large item of expense.

The most notable concrete building work in the metropolitan territory in the past twelve months has been the two great loft buildings for the Hoboken Land & Improvement Co., 14th street, Hoboken, N. J., buildings thirteen stories high, which are just completed and bring the floor space of this port terminal up to something more than a million square feet.

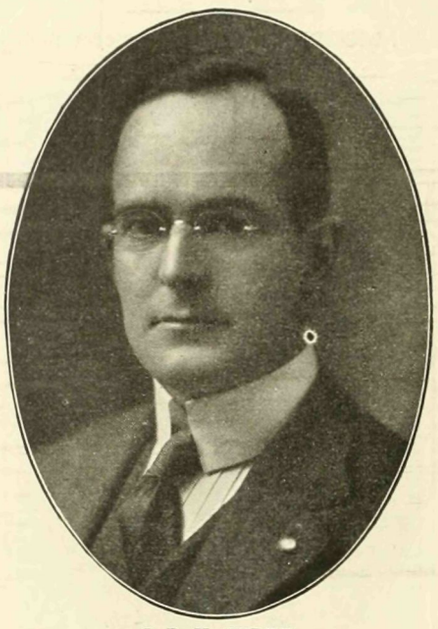
Some of the important work on Manhattan includes some very notable garage and service station buildings for the automobile trade, especially those for the Hudson Motor Car Company, the Willys-Overland Company, Chevrolet General Motors Company and new work for the Peerless Company. There have been a great many garages of considerable magnitude undertaken.

In Brooklyn the interesting jobs include those for the Robert Gair Company, which has just completed two twelve-story factory buildings of considerable magnitude, which bring the concrete floor acreage of this plant up to about 50 acres.

The Bush Terminal Company, with their enormous development in South Brooklyn, is just completing two more lofts, one 500 feet long, six stories high, and the other twelve stories high. This twelve-story building furnishes an interesting little criterion of the tendencies of industrial building development in this district. The first Bush buildings were one-story, then two-stories, then six-stories, then eight-stories, and now twelve-stories.

The Great Atlantic & Pacific Tea Company has completed two buildings in Jersey City and a very large one in the Bronx. Colgate & Company have completed one building and authorized another. The Standard Oil Company and Vacuum Oil Company have made extensive improvements, at Bayonne, and in Long Island City.

In Queens there has been a great deal of work going ahead for the Degnon Terminal Company, which has erected four fine four-story buildings, for nationally known tenants. The Ford Motor Car Company has completed a large addition to its plant. Touroff & Karp are also erecting a large building. The Oakes Manufacturing Company is starting several buildings on Steinway Creek and the Stewart-Warner Speedometer Company is erecting a large building on Jackson avenue.



J. P. H. PERRY.

Staten Island also comes in for her share of concrete improvement. A number of small buildings have been authorized and one large plant for the Dejonge Paper Company.

On the Newark Meadows there has been a great deal of work going ahead—large copper reduction plans, coke ovens, munition plants, have all made extensive use of reinforced concrete buildings. The Egyptian Lacquer Manufacturing Company is erecting seven buildings, all of concrete. The Hyatt Roller Bearing Company has completed two large buildings and are starting a third. The Crocker Wheeler Electrical Company is adding to its extensive plant.

Altogether it is probably fair to state that the number of reinforced concrete buildings built and authorized within twenty-five miles of City Hall during 1916 is three times as great as in any previous years.

As to the future, the writer has seen many evidences in the authorization during the past month of large new buildings, that conservative business men have come to agree with the opinion in the concrete trade as to the fluctuation of building costs. Most concrete contractors feel that there will be hardly any reduction in the cost of buildings for the next two years at least.

The cost of steel reinforcement may break a little, but cement, sand and gravel are all largely labor wrought products and together with the labor itself will not decrease in price. The equipment which goes into concrete buildings, such as plumbing, heating, lighting, elevators and sprinklers, may recede a little in price, but with the mills so largely filled up with orders for 1917 business it is not to be expected that 1917 at least will see much lower prices. In fact, from present indications, deliveries are going to be the most important factor in placing business.

There should be considerable volume of concrete business offered to the concrete contractors of somewhat different type than that obtained in normal years, namely, structural steel loft offices and apartment buildings. Steel shapes are difficult to procure much under six months' time and when procured are at a greater proportionate increase in price than concrete buildings. The result is that many architects and investors are taking up with concrete companies the estimating of what would normaly be brick and steel buildings.

FACE BRICK.

Market in Splendid Condition and Outlook for 1917 Excellent.

By WALTER S. KETCHAM.

DURING the year recently passed, there was an apparent change in the face brick situation. In 1915, and for a few years previous, there was a big demand for the wire cut faces in all of their different colors and shades, but during 1916 there has been a very strong tendency toward the Colonial type of brick for use in buildings of the better class. This applies with particular emphasis to fine country house construction.

The Colonial type of brick does not necessarily mean the product of a particular manufacturer, but it does mean a brick that will give an effect rich in both texture and color, combined with a feeling that has never been attained by the use of any other brick since the time of the colonies. There is a warmth of feeling and blend of coloring, produced with a good grade of Colonial brick, that cannot be found in any other class of brick work, smooth pressed or rough faced.

There will always be more or less of a demand, however, for pressed and wire cut face brick, no matter how many new architectural ideas may come and go, but it will always be noticed that the designers of structures of especial distinction, from both a structural and artistic standpoint, always aim at something new whenever possible. There is a strong tendency at the present time toward the use of a type of brick that has a real individuality of its own, such as brick exhibiting faces indicative of a hand moulded process, not smooth or rough, but with a degree of uneveness in general effect, which goes far toward establishing the appearance of antiquity.

There has also recently been a growing demand for Clinker brick. This character of brick is warped and twisted out of true in the burning, and is produced in so many beautiful colors that when mingled together in a structure it tends to produce a very artistic effect combined with perfect color harmony. The use of this type of brick gives a rough and rugged appearance to the wall, and at the same time creates a feeling of refinement and distinction to the finished building.

Some very notable examples of recent country house architecture have been faced with brick of this type. They have also been successfully used in churches, schools, colleges, clubhouses and buildings of this same general style, and it is predicted that it will be only a matter of a short time before the demand for this brick will be much greater than the amount annually produced.

There is no question but what there has been an excellent market for most all of the kinds of face brick now being manufactured. This is true for the reason that modern construction requires a wide variety in both color and texture in order to break away from uniformity in style and coloring. The prices of front brick of all descriptions have rapidly been increasing. This fact is due to the advanced cost of labor and fuel necessary to produce the finished article. The increase, however, is small in comparison with other increased costs of structural materials and should have but very little effect on present-day construction, and in a large modern building the increased cost due to advances in face brick prices should hardly be worth consideration.

Modern architects devote a great amount of time and study to the selection of face brick for important operations. This care is most essential in order that the right character of brick as well as the proper color or shades be obtained to harmonize perfectly with the design and, furthermore, with the surroundings of the new building. If this time and study is eliminated, the building will very often clash with adjacent structures and nullify an otherwise well-executed design.

RICHMOND BOROUGH'S BUILDING OPERATIONS

Increase of Fifty-Six Per Cent. in Cost of Plans and Six Hundred and Forty-Four Per Cent. in Factories

By WILLIAM J. McDERMOTT, Building Superintendent, Richmond

DURING the eleven months ending November 30, 1916, there were filed in the office of the Superintendent of the Bureau of Buildings in Richmond, 2,666 plans, the principal items in the list being 1,769 plans for dwellings and 107 plans for factories. The increase in the cost of plans filed over the corresponding period of 1915 is 56 per cent., increase in cost of dwellings, 11 per cent., and increase in cost of factories, 644 per cent.

Richmond, as a residential and manufacturing borough, is rapidly being recognized by capital interested in this class of development. During the present year several large tracts of land have passed into the hands of strong and reputable realty development concerns of wide prominence, who are making permanent and handsome improvements, and erecting detached houses of moderate cost, tasteful and attractive in design, and catering to a class of homeseekers who are desirable for any community.

It is frequently predicted that the day is not far distant when Richmond Borough, with its fifty-eight square miles of territory and thirty-five miles of water front with an average depth at mean low water of eighteen feet, will be the chief asset of the city of New York.

The channels along this water front on the northwest and west shore through the Arthur Kill has recently been dredged by the United States Government to a mean depth of 25 feet. It is along this shore and the north and east shores, where the depth of water is much greater, that the manufacturers are locating. Land, which a few years ago was cheap, is today bringing fabulous prices, and is being purchased by the biggest manufacturing interests in the country. The Baltimore & Ohio Railroad is spending immense sums in improvements, in which is included a line of railway through this territory from Howlands Hook to Tottenville.

Hundreds of persons working in this Borough are living in adjacent cities in New Jersey, due to cheaper rents being obtainable there. There is plenty of vacant land in our Rorough, but we cannot erect more than two-family buildings without having to comply with the requirements of the Tenement House Law, which adds greatly to the cost, and practically makes such buildings unprofitable, while in the New Jersey cities referred to three and four-family houses may be erected without any such requirements.

The south shore, where the water is less bold, is the residential section of the Borough—dotted with thrifty villages about a mile apart, which, in turn, are surrounded by high class residences.

The topography of the land is perfect, running back from a sandy shore with a gradual rise until from one to three miles we reach the level of 413 feet at one point, the average being 250 feet above the sea level. This longitudinal elevation running through the centre of the Borough forms a natural barrier between the manufacturing and residential shores.

Richmond Borough is making wonderful advances under disadvantageous conditions. We need bridges between our Borough and New Jersey, and our Borough and Brooklyn. We need better and more frequent means of transportation within the borough itself.

We have the cheapest and best land in the city of New York for buildings of any kind. Land can be purchased at a price now where it is possible within the purchaser's lifetime to make tremendous profits. Our building loan associations have helped in a wonderful way, but we need a trust company, or money lending institution, where builders may secure mortgage loans.

WILLIAM J. McDERMOTT.

Richmond today is one of the best fields for this kind of investment, as the demand for houses is greater than the supply. We have greater latitude under the building laws than any other borough, being outside of the fire and suburban zones. A large part of our territory is marked "undetermined" in the Building Districts and Restrictions ordinance, allowing any kind of a building to be erected there. We enjoy the cheap commutation or monthly railroad fare.

In addition to the Municipal ferry, between St. George and Manhattan, we have five other ferries, one running to Brooklyn and four to different points in New Jersey.

For those seeking a home within easy access of their work, Richmond Borough is ideal. Traveling back and forth you are always certain of a seat in our Municipal ferry boats, and then in trains or trolley cars, which are clean and comfortable and render good service. At home you have the choice of residing on the highest point on the Atlantic Coast between New York and Florida, within easy walking distance of the best bathing beaches on this coast, or you may live right on the water, with all the pleasures that implies—at either place you are within a short distance of fine schools—and at a rent, if you are a tenant, 50 per cent. cheaper than in any other borough, or, if you are an owner, at a cost much less, both as to land and building, than in any other borough.

The City of New York is at last awakening to the benefits to be gained by assisting our Borough. They are rebuilding our fine system of roads, and methods of better communication between our borough and the others is frequently being brought up, so that we may confidently hope for something along this line in the near future.

APARTMENT HOUSE INVESTMENTS SHOULD SHOW SPLENDID RETURNS

By LEO S. BING

IN order to show the excellent opportunities which now exist for investment in high class apartment houses, it may be well to consider conditions in the past which have led up to those of the present. The development of high class apartment houses began about fifteen years ago and at that time builders were rather uncertain as to the requirements of prospective tenants. Since then so many and so varied are the types of apartment houses which have been built that it is safe to assume that houses which have been built within the last few years will need very little revision in plan for many years to come.

Formerly there existed the uncertainty as to the kind of building which might be erected immediately adjoining a high grade apartment house and thereby greatly lessen its desirability. There were no restrictions and your neighbor could do as he pleased. Recently laws have been enacted which regulate all of these conditions so that the owner of an apartment house today, which is built in the residential zone, is absolutely sure of having nothing but residential buildings as neighbors, which buildings will be rigidly limited to a certain height and the area of which will be no greater than that which has been pronounced to be proper by one of the ablest committees which has ever been appointed to pass upon matters of this kind.

Until a year ago the price of building materials and the cost of labor were exceedingly low. In the past year, however, these costs have had a phenomenal rise (in many instances more than one hundred per cent.), and it is safe to predict that it will be many years until the level of prices (if ever) is as low again as it was a couple of years ago. Many of the apartment houses which were built at that time are still in the market and offer an exceptional opportunity for the investor, because of the low price at which they can still be bought and due to the fact that planning at that time was already well understood. All of these houses are fully rented at schedules which were made up before the present advance in prices had taken place, and it stands to reason that the rents can be raised when the leases expire.

At one time there seemed to be an over-production of this class of investment, but it is now certain that the demand has more than caught up with the supply and there is every indication that this condition will continue for a number of years to come. A factor at present which will prevent over-production is that the loaning institutions are not taking account of the high price of materials and are loaning on buildings only where they can be permitted to figure the old rates. This is an added difficulty to the production of apartment houses and will tend to keep the supply below the demand.

Although a certain number of apartment houses have been sold every year, there has not yet been a large buying movement on the part of investors and the market is in no sense "cleaned up." It is therefore an extremely advantageous time for anyone who is looking for this kind of an investment to buy, provided the proper care is exercised in the selection of neighborhood and to obtain houses which are well laid out and well built.

In every commodity there seems to be fluctuations from time to time and this has also been true of New York real estate, even though its general trend has been steadily upward. The apartment house, however, has fluctuated least of all of the real estate investments and all indications seem to be that this condition will continue. If therefore some of the houses which were built a couple of years ago can be bought on a basis which will net the builder a reasonable profit, it seems to be one of the best opportunities for apartment house investment which has ever existed.

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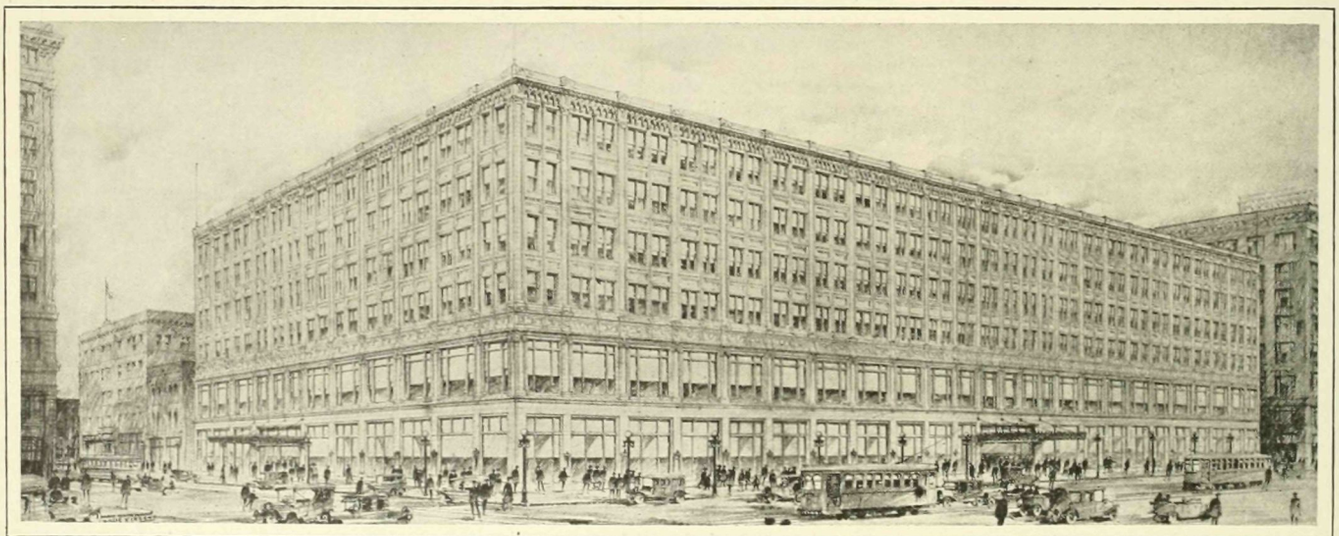

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THE TENEMENT HOUSE DEPARTMENT AND WHAT WAS DONE DURING 1916

By HON. JOHN J. MURPHY

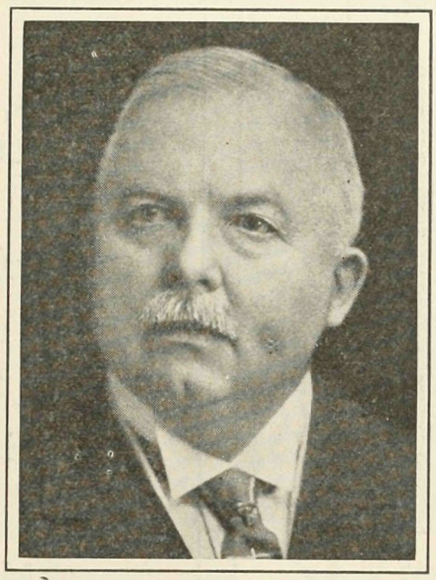
A BRIEF summary of the Tenement House Department's work during 1916 is both interesting and instructive. Few people realize how directly the work of this great city department comes into touch with their daily lives. The Department has broad powers which it is constantly using to protect the health and safety of the millions of our population who live in tenement houses. The performance of this great task is carried on quietly, but none the less effectively. It is seldom that the occupant of an apartment understands, or is even interested in, the number of things that go wrong about the building in which he lives unless the matter affects his own apartment. But the owner of the building knows that constant attention is necessary to maintain it in proper condition and prevent rapid deterioration. Of all buildings, probably none suffers from hard usage and consequent deterioration as much as the tenement house. When, therefore, it is realized that there are more than one hundred and four thousand tenement houses in the city, the extent and variety of the Tenement House Department's duties may be fully realized.

There are at present close to a million apartments in tenement houses—968,459, to be exact. The number is being increased by about 30,000 a year, so that next year it will be true to say that there are a million apartments in the city. On the ordinary basis of calculation, therefore, of four and one-half persons per apartment, the tenement population is apparently 4,358,065. It is highly probable that because of the number of small apartments in Manhattan, the actual tenement population is less than this, possibly not more than 4,000,000, still the number is sufficiently large to impress even the most casual observer with the fact that constant tenement supervision is necessary if unsanitary and dangerous conditions are to be kept in check.

The Department found it necessary during the year to file violations against 34,974 tenement houses, or upon one tenement in every three in the city. In many cases the violation may be filed for a seemingly trivial condition, but the repairing of trivial defects is often "the stitch in time that saves nine." It is often to the great benefit of the owner that defects are pointed out in the beginning, rather than left for report by agents. The present good condition of many tenement properties is due in large measure to conscientious and business-like agents. But there are some who are neither conscientious nor business-like, who wish to gain favor with owners, by keeping down repairs to the minimum, thus "starving" the property and piling up costs for subsequent owners or agents to meet.

There were, of course, a number of violations pending against other tenement houses also at the first of the year, so that slightly less than one-half of all the tenement houses, or 55,726 are the subjects of violations at the present time, notwithstanding the number that have been cleared of violations during the year. It must be remembered, of course, that while only one violation is filed against a premises, there may be many items or orders contained in the violation. While, therefore, violations were filed against only 34,974 tenement houses, the number of orders issued against those houses was 194,569.

During the year, 26,849 tenement houses have been cleared of violations, the number of orders dismissed and canceled was 141,854. The volume of such work performed by the department in 1916 therefore exceeds that accomplished in 1915, notwithstanding some reduction of the force. In addition now, duties were imposed on the Tenement House Department as the result of an amendment to the Charter transferring to this department from the Board of Health jurisdiction over the construction and structural changes in bakeries and confectioneries, and from the passage of the Zoning Resolution by the Board of Estimate. This resolution imposed requirements upon the departments which make a special inspection necessary in the case of all tenement houses located in residence and business districts, defined by the resolution.



HON. JOHN J. MURPHY.

The regular cycle inspections which the Department makes each year had to be stopped for a time to carry on this work and to meet the special demands resulting from the serious outbreak of infantile paralysis during the summer. The Department devoted nearly seven-eighths of its inspection force for three months of the epidemic to a special clean-up of the tenement houses, more especially the cellars, yards, courts and shafts. Public attention was so thoroughly aroused by the outbreak of the disease that in spite of the lack of any apparent connection between the disease and housing conditions, for a time the department was overwhelmed with complaints, receiving as many as a thousand in a single day.

Ordinarily the Department receives in the neighborhood of 38,000 complaints a year. This year, however, the number will be little short of 50,000, the entire increase having occurred during the summer months while the epidemic lasted. No statistical data are available at this time for the great volume of work performed by the Department in connection with the general clean-up of conditions

(Continued on Page 121.)

TENEMENT HOUSES IN THE BRONX AGGREGATE IN COST $12,812,900

By CHARLES E. JONES, Superintendent in the Bronx

IN looking over the records of the Tenement House Department, Borough of the Bronx, for the past twelve months we find a decided shrinkage in the number of plans filed for the erection of tenements, as compared with the similar period preceding. For the year ending November 30, 1916, 154 plans were filed, showing 257 buildings at an estimated total cost of $12,821,900, an average cost of $49,850, as against 301 plans for 497 houses, estimated total cost of $22,572,750, an average cost of $45,619 for the same period ending November 30, 1915.

The average cost, per house, answers the question as to why building has fallen off so generally—and I believe a further study of the situation would show that the difference of, approximately, $4,200 per house, does not fairly represent the actual additional cost of production, compared with a year ago. To this may be added the trouble encountered by all the builders because of the scarcity of labor and the numerous strikes called during the year.

The largest individual house is shown on plans recently filed covering the erection of a six-story building at the southwest corner of Grand Concourse and 171st street, measuring 134 x 145, irregular, and contains seventy-eight apartments, fourteen on each floor. The estimated cost is $160,000.

At the northeast corner of Davidson avenue and Buchanan place, the smallest tenement of the year will be erected. This five-story and basement building measures 15x90, will cost, approximately, $17,000, and contains sixteen apartments.

The buildings erected are well scattered throughout the Borough. If any section enjoyed more than its share, it was Fordham, which was selected by a number of builders as the best place in which to operate.

Renting conditions have been, and are, exceptionally good. The new houses have been filled with desirable tenants at good rentals as soon as completed, and it is reported that the owners of the older houses are now notifying tenants of moderate increases in rentals in many sections of the Borough. The New Building Bureau, which supervises the application of the Tenement House Law to buildings in course of construction, filed 1,299 violations during the period covered in this article and dismissed 1,264.

Certificates of occupancy have been issued on 298 premises, which brings the total number of tenements in the Borough up to 10,349, with housing accommodations for 134,159 families. Of this number 4,816 are old law tenements, erected prior to the passage of the Tenement House Law, the remainder (5,533) having been constructed in accordance with the requirements of the law.

The systematic and regular inspection of these occupied houses, to see that they are maintained according to the law, and departmental regulations, has been carefully done this year, as is shown by the fact that 13,567 violations were filed during the past twelve months and 9,762 dismissed. These are classified as follows:

Orders	Filed	Dismissed
Structural	26	33
Night lighting	277	347
General repair	5,915	4,152
Fire-escape	1,246	861
Plumbing	3,352	2,589
Cleaning	1,799	1,120
Unlawful use	43	37
Alteration	859	742
Illegal conversion	50	81

The excess in the number of dismissed orders as against those filed is explained by the fact that some of such orders were pending a year ago. The number of existing orders will show material reduction at the completion of a reinspection cycle now in progress.

An exceptionally large number of complaints were received during the past year, due very largely to the infantile paralysis epidemic, which was the immediate cause of flooding this and other city departments having to do with sanitary conditions in dwelling houses with complaints of every conceivable kind. During July, August and September 2,543 complaints were received out of a total for the twelve months of 4,749. As the result of inspections made on these 4,749 complaints 1,096 violations were reported and in 1,659 cases the inspectors reported that the cause of complaint had been removed. The remainder were either referred to other departments having jurisdiction or found to be groundless.

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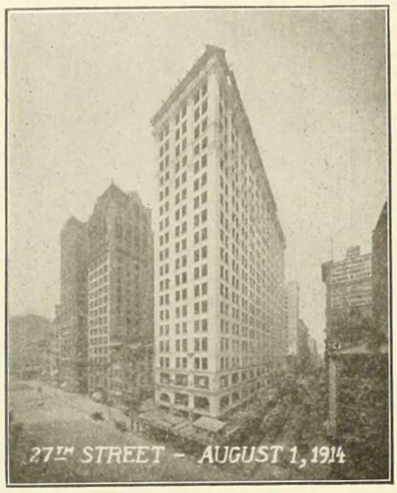
27th Street and Fifth Avenue



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REVIEW OF BUILDING CONDITIONS FOR LAST YEAR IN MANHATTAN

By EDWARD CORNING

EDWARD CORNING.

ACCORDING to my judgment, the conditions in New York City are about ripe at this time for a boom that will be felt throughout all branches of the real estate and building business. Three years ago this city was considerably over-built in all departments, and there were numerous vacancies existing in apartments, office and loft buildings. Tenants for these structures were extremely hard to find, and, when finally interested, made leases at practically their own terms. In view of these facts, the loaning institutions were very properly discouraging new building operations and in numerous instances refused to make loans on what might ordinarily have been considered at least safe, if not good investments. During the last two years, however, the city has outgrown this condition.

The wave of prosperity that has spread over this country from coast to coast has made it necessary for the general enlargement of factories and industrial plants, and commercial concerns have rented larger and better equipped office and showroom space. Following the same general line of expansion, individuals and families have expanded in their manner of living, and in many instances have taken more commodious quarters, particularly in the newer apartments. This is especially true in the Borough of Manhattan, where new buildings, and more particularly high class multi-family houses, have been leased for long terms at excellent rentals, before the buildings have been completed, and the rental of large suites in apartment houses direct from the plans has been quite a common occurrence. Rentals in structures of this type, as well as in the better class of office and mercantile buildings, have been made at prices fixed by the landlords.

Many of the old buildings, in districts that were practically deserted only a few years ago, have now found desirable tenants. In some of these sections, there has recently been a considerable amount of activity apparent in modernizing the old structures to meet the requirements and demands of modern commercial practice; and according to the present outlook, there is every probability that during the coming year building operations will be greatly increased.

As a matter of history, it is generally known that real estate, particularly in this city, has been the last to show evidences of decline in industry, and also the last to follow the wave of prosperity. An enormous trade balance in the favor of the United States for the past two years has given us a new crop of millionaires, and Wall Street has been having its inning. Sooner or later, the activity of Wall Street is bound to quiet down, however, and then a considerable part of the money made in stock transactions will no doubt be diverted to real estate as a safe and profitable investment.

When the present European conflict ceases and the abnormal demands from abroad for steel and other commodities are over, we should be able to buy building materials at prices which owners of real estate will be justified in paying. The present prices of building materials, as well as all other commodities which are included in the necessities of living, are at this time positively prohibitive. Notwithstanding the fact, that this year has been a very good one for the building trade considered as a whole, it would undoubtedly have been much better had the materials of construction been obtainable at a reasonable figure and if deliveries could have been assured. Many important building operations have been held in abeyance for some time now, owing to the high market prices of the essentials of constructions. The unsettled condition of the labor market has been another feature which has had a marked effect on the building trade as a whole, and which has been responsible for withholding important projects from the market.

According to the present outlook, I think it will be some years before we again see the abnormally low prices which prevailed a few years ago, but I do not believe that this city can, or will, allow its development to lie dormant, awaiting arrival of that time.

BRONX BUILDING.

High Cost of Materials and Labor Shortage Influence Market.

BUILDING conditions in the Borough of the Bronx have not been up to the expectations of those interested during the past year. Abnormal material prices, labor troubles and a scarcity of mortgage money have been the conditions that have militated against a highly prosperous season. While there has been a considerable amount of new buildings erected, the number and total cost has fallen short of the previous years, according to the records of the Building Department, and the records are borne out by the statements of prominent local architects and builders. The outlook for a good building year in 1917 is very favorable, however, and if the present prospects materialize into actual building operations the new year should more than make up for the shortcomings of 1916.

As the Bronx is essentially a residential and manufacturing community, it is but natural that the construction during the past year should have followed along those lines. Practically all of the building projects of the period were in this class, with the construction of apartment houses predominating. As far as the latter is concerned, there is still a shortage in accommodations. There has been a tremendous demand in the borough for space in modern apartment buildings, for small suites at moderate rentals. The borough still provides a fertile field for the speculative and investment builder who will erect structures of this type in good and convenient localities and, according to the demand, this field should be prolific for some years to come.

The extension of the rapid transit lines have and will continue to open new territory for home seekers who are willing and anxious to live in modern quarters. The large increase in the number of manufacturing and commercial enterprises has brought many new families to the Borough and they have to be accommodated with living quarters.

The passage of the new Zoning Resolution, with its further restrictions in regard to height, area and usage, has exerted a far-reaching effect upon the destiny of the Borough. Owners of property now feel that they can go ahead with their contemplated improvements and that they will be protected from conditions that would become a menace to their holdings. This recent legislation has in a remarkable manner stabilized values of real estate and restored confidence to the owners of property.

At the present time there is every indication that the year, 1917, holds much for the building trade as a whole in the Borough of the Bronx. There is much heard of contemplated improvements in all lines of building construction and the architects are busy with sketches and plans for operations that should be started at an early date. That is, provided the prices of building materials do not continue to soar and make building construction absolutely prohibitive.

There are a large number of projects ripe for immediate action, and many of these will go ahead so soon as material, price and weather conditions permit.

The question of delivery of materials is not of paramount importance to the builders of the Bronx, as only a few of the structures are dependent on steel for their framework. Brick, sand, gravel and cement arrive for the most part in barges and are then hauled by auto truck to the job. Brick and lumber are the important materials for the construction in the Borough, and if these are easily obtainable at fair prices there is no reason why the building business should not have one of the best years in its history.

BROOKLYN BUILDING.

Work Retarded Through Increased Cost of All Structural Materials.

By E. H. THATCHER, of John Thatcher & Son.

AS the building trades are dependent almost wholly upon the manufacturers of the country, it is only natural that during 1915 and 1916 we should have had an improvement over the conditions that existed in the year 1914, but during the last two or three months there has been an apparent falling off in the amount of work that was going ahead.

Plans have been prepared, estimates furnished by contractors and then the proposed work has been laid aside. In most cases this has been due to the advance in the cost of construction. It is natural that there should be an advance in the cost of construction, for materials have been steadily rising in price; so has labor.

In all metal lines we naturally look for an abnormal advance, as we know that the demand has been tremendous; so also should we look for an advance in all other lines in proportion to increase cost of labor, raw material and transportation; but there are certain lines, brick, as an instance, which we would have had to stretch our imagination somewhat to be able to see any apparent need for such an increase in price.

The increased cost of building is about thirty to forty per cent. more than it should have been under normal conditions and it is not reasonable to suppose that a manufacturer is going to put that additional amount into a building, and add just that much more to his overhead, if he can possibly avoid it.

As a consequence, we see buildings, originally designed as fireproof structures, submitted again for estimate, changed to slow burning timber construction. This shows to some extent the need of the manufacturer and his effort to get a building erected at a reasonable price.

It is evident that the metals have not as yet reached the top price. It is likewise true with some other materials, and it is a question in my mind, if the declaration of peace were made, whether it will not send prices higher for a time at least.

With these conditions existing I hardly look for a great deal of business during 1917, unless it be public and railroad work, with also a possibility of private residence work.

The railroad work will depend very largely upon the result of the companies' application for an increase in the rates, and private work naturally will come from men who have made large profits during the business boom of the last two years.

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BUILDING FOR THE REALTY INVESTOR

Brooklyn a Field of Opportunities for Speculative Builder and Investor

By LOUIS GOLD

BROOKLYN stands pre-eminently foremost as the one borough of the greater city in which the speculative builder and investor may still find rich opportunities. Despite the high cost of material, the shortage of labor, and the generally unprecedented conditions we now face, no one closely acquainted with the facts of the situation need seek for new or more secure fields for investment.

At the present time Brooklyn is passing through a stage of tremendous development. Its industries are growing to enormous proportions. This acceleration of industrial activity is bringing a concomitant increase in population. The incessant influx of new citizens is expanding the limits of the Borough to greater distances than ever. The facilities of our transportation have necessarily been made more efficient and widespread to meet this new order of things. New neighborhoods are constantly opening up. Sections that have for years lain idle are now vibrant with activity.

It is in these new neighborhoods that opportunity awaits the speculative builder, and it is to the speculative builder that the investor, in his turn, may look for opportunity. And let the investor bear in mind the great vital fact concerning the situation in Brooklyn—the secret of the splendid chances that continually await him if he is vigilant and aggressive—it is land values.

Our Borough has grown with astonishing rapidity, yet land values have not advanced in proportion to the intrinsic importance of the Borough as a unit not the greater city. The automobile industry has set up great factories employing skilled labor, the Bush terminal alone has made Brooklyn a vital factor in transportation, and the projected development of new waterfronts points indubitably t a Borough that will rival Manhattan in social, political and economic importance.

Yet land values have remained at a surprisingly reasonable figure. In Manhattan the builder and investor must face an entirely different state of affairs. Thirty thousand dollars put into property in that borough affords an investor no better chance for profit than ten or fifteen thousand dollars spent for land in Brooklyn. This remarkable disparity in values creates a greater margin for earnings; a chance for safe investment at figures that are not excessive or inflated.

Brooklyn is a stable borough, and in this stability lies much of the security for which an investor seeks when manipulating his funds. There are neighborhoods in Brooklyn that have maintained their individuality and general good tone for many years. Neighborhoods do not deteriorate very fast in our town. Brooklyn is essentially a "Home Borough" and for this reason we continue to keep up a fine appearance and a clean house.

This is not wholly true of Manhattan. Not many years ago some sections of the west side of that borough were distinguished as places of residences. Apartment houses gradually crept in, and eventually these neighborhoods became collections of homes of such diversified types that they lost their individuality and distinction altogether.

On this side of the river we are more diligent in our endeavors to maintain the homogeneity of our districts. Take several examples of our stability in this respect, for instance. There are the Brooklyn Heights, the Bedford section, the Park Slope, Stuyvesant Heights, Bay Ridge, Borough Park, Bath Beach and Flatbush. Of really amazing growth in most cases, they have persisted as distinctly individual and separate portion of our Boston. And this will be true in a greater sense of the new sections that are springing up in what we were once prone to call the suburban districts of Brooklyn.

But, to digress for a moment, this is no longer. Our fine systems of carlines and subways have brought us in close touch with Manhattan, and even the most remote parts of the Borough are within a comparatively short running-time of New York. Our transportation service has practically eliminated distances.

The new sections of the city will, to a very gratifying extent, be very beautiful. The business of building has tended very strongly in the last few years to the more artistic. But utility has not suffered one whit. We are putting up better buildings and more commodious and comfortable structures all the time. The builder, too, has caught the modern spirit of efficiency and is building efficiently that the tenants of his property may live more efficiently.

In the new districts, so rapidly opening up, there will be a certain uniformity of construction that will produce a pleasant outlook and which inspires civic pride to the maintenance of good neighborhoods. Our present system of building zones is irrefutable evidence of this conscious civic effort to plan a Borough worth while; a borough that will be an example of good citizenship and good taste.

And so we are preserving our property from the encroachments of the undesirable elements of real estate. This is positively necessary for the protection of the builder, the investor and the home owners generally. It creates a sense of security that could not be created in any other way. We are not at all uncertain about it; we know what we want to do, and we are doing it—planning it, in fact.

The citizens of Brooklyn evidently appreciate it, for they are willing to pay their share for the advantages which such a state of affairs creates. Most of them are paying it in rent. Good rents are being paid in Brooklyn, in fact, tenants are entirely willing to pay rents that compare favorably with, and in many cases, equal Manhattan figures. This means income to property owners; it means a goodly return of profit on money invested. Nevertheless, in spite of this, the value of land has not advanced to the prices such a condition would imply, and in this lies the golden opportunity of the speculative builder and the investor.

GYPSUM PRODUCTS.

How They Are Applied to Buildings of Modern Construction.

By S. G. WEBB, Sec'y Gypsum IndustrierAss'n.

GYPSUM is the geological name for hydrated sulphate of lime, having in its pure state, the chemical formula of $CaSO_4 2H_2O$. This formula means that gypsum contains in a chemically combined form 32.5 per cent. of lime (CaO), 46.6 per cent. of sulphur trioxide (SO_3), and 20.9 per cent. of water (H_2O). Gypsum is found in soft rock formation liberally distributed in the United States, being found in twenty three states, including Alaska. It is also found in very large deposits in Nova Scotia, New Brunswick and Newfoundland.

Its most common occurrence is in the form of veins varying in thickness and varying in depth from the earth's surface, in which cases it is mined and brought to the surface for manufacture. It is, however, frequently found at the surface and even in mountains, when mining is not needed and the gypsum can be quarried.

The manufacturing process consists of drying, crushing and grinding the raw gypsum and then subjecting it in "kettles" to external heat. This heat drives off a part of the water of crystallization, or approximately 14 per cent., leaving approximately 7 per cent. of water of crystallization remaining in the material.

In this form it is known as plaster of Paris, or, more correctly, calcined gypsum, and is sold in this form mixed with other ingredients, as hard plaster or gypsum wall plaster.

Gypsum wall plaster is delivered for use packed in bags. It is either in the form of "neat" plaster, which requires mixing with sand and water to secure its proper plastic and working consistency, or in the "ready mixed" form, containing all of the necessary ingredients, including sand, ready for use when mixed into a plastic mass with water.

The mixing of water with the plaster as it comes from the bags is for the twofold purpose of giving it a plastic condition so that it can be worked with the trowel and to supply the necessary amount of water for crystallization. In this operation the plaster becomes gypsum again, taking up the necessary 14 per cent. of water, which had been taken out of it in the calcining process and becomes "set," hard and permanent.

Calcined gypsum or plaster of Paris is also used in structural work in the "poured" form to form roof and floor slabs. In this use the material is poured around and imbeds the steel reinforcement used, which steel serves to support and add strength to the structure and in its turn is protected by the surrounding gypsum material from the effect of heat and fire and from corrosion.

Other structural forms of gypsum are manufactured in factories and shipped to and used in buildings. In manufacturing this class of structural units, the calcined gypsum has to be mixed with water and poured into moulds. It becomes "set" and reverts to the original gypsum composition.

Gypsum blocks are manufactured in this manner and are used very extensively in buildings for the construction of fireproof partitions between rooms, around corridors, enclosing important vertical openings, and for the construction of walls around dumb-waiter shafts and other minor vertical openings. It is also used for protecting and enclosing steel columns and steel structural members in steel skeleton buildings.

Another manufactured form in which gypsum is used is gypsum plaster boards. These are thin slabs or sheets of gypsum reinforced with fibre or wool felt and are used extensively for lathing purposes, on which gypsum plaster is applied. Gypsum plaster board with gypsum plaster applied to it has the advantages of being wholly incombustible and vermin proof.

Gypsum structural materials possess advantages both to the builder and to the user. Some of these advantages are given below.

Considering gypsum plaster first, these advantages are as follows:

Convenience of package.

Hardness and durability.

Heat resisting.

Quickness of application, almost wholly independent of weather conditions.

Absence of injury to paint and decorations applied thereto.

Quick use of building.

In the structural forms the following advantages are important:

Lightness in weight and consequent economical handling.

Light permanent loads on buildings.

Large units permitting rapid erection and construction.

Low heat conductivity preventing condensation of moisture.

Great fire resistance, or "fireproofness."

Ready applicability to unusual conditions.

In New York great quantities of gypsum blocks, plaster boards and gypsum plaster are used to the lasting benefit of the building industry.

THE SPECULATIVE BUILDER'S FIELD

Review of Conditions In Manhattan—Reciting Some Changes Which Have Occurred

By G. RICHARD DAVIS, of A. L. Mordecai & Son

IN former days the speculative building industry in this city formed a very large percentage of the total amount of all building done each year. With cheap land, and with continued new transit facilities, which from time to time made new territory available, the speculative building industry was a large and profitable one. It reached its height in Manhattan when the West Side was built up in a few years with private houses, and Harlem became a city of "flats."

In those days a man could become a speculative builder with a few thousand dollars and put up a row of private houses or three or four five-story flat houses, each 25 feet wide. The low cost of land and building, and the seemingly unending supply of tenants made it possible to rent and sell these houses as fast as completed. Profits were alluring and attracted more and more men to the building industry, conducted in this manner. Building loans were easily obtained from individuals and from lending institutions, and the speculative industry grew to great proportions.

As the West Side and Harlem grew, building operations became of greater magnitude, substantial structures were erected, but up to that time few men with large capital were engaged in the business. A few years prior to the opening of subway to Washington Heights and the Bronx, there was a slump in real estate, many builders failed, and speculative building on a large scale received a serious set back.

The industry was, however, revived when the subway was opened and the speculation in land and buildings, which took place on the West Side and in Harlem, was again duplicated with the types of building, however, much changed. Private houses were no longer desired and the 25 foot flat, of the previous decade, was supplanted by five and six-story tenements, varying in width from 35 to 50 feet.

The six and seven-story elevator apartment houses, which were a later development of the West Side and Harlem, ceased to be erected on the Heights or in the Bronx until after the walk-up houses had had their day, and these new sections were well developed. The units of construction were all the time, however, growing larger, and each operation entailed more capital and required more knowledge of construction and management, if it were to be successfully handled.

While the total value of the buildings erected in 1904 was far greater than that of 1894, there were fewer speculative builders engaged in the business than during the earlier period. The small capital necessary to engage in this business had made it possible for men of slim resources to become speculative builders, and when bad times came, and depression in real estate followed, these men failed and the industry received a "black eye." The standing of the speculative builder in the business world at that time was anything but high.

From 1904 to 1907, the speculative building industry was active in the apartment hotel district of Long Acre Square. In 1908, the first ten-story apartment house, built by a speculative builder, was completed, at the corner of 101st street and Broadway. The following year, the twelve-story apartment houses, at Riverside Drive and 113th street, and Broadway and 100th street, were completed. These buildings were all sold immediately, and others of a similar type were projected on even a larger scale.

The builders of these structures were men with large capital and experience, and their success drew the attention of the building industry to the possibility that speculative building might be conducted in a legitimate manner, and made a successful and profitable business.

In 1908 there was only one loan made to a speculative builder for the erection of a twelve-story apartment house. Five years after this period, eighty per cent. of the total amount of all loans made to speculative builders during the year were for this type of construction, and for business and loft buildings, twelve to sixteen stories high.

The speculative building industry changed rapidly. The building units became large, even in the Bronx, where the Hunts Point Apartment House, covering about one-half a city block, was erected.

Buildings covering from six to eight lots of ground, and costing from $500,000 to $1,000,000, were put up by speculative builders; one building, covering thirteen lots at Riverside Drive and 157th street, was erected costing more than $1,400,000, and one at Park avenue and 52nd street, covering sixteen lots, at a cost of about $2,000,000, while on Fourth avenue in the twenties, buildings sixteen to twenty stories in height and covering from four to six lots, were erected in large numbers.

The building loan operators of former times have practically been forced out of business, not so much by changed financial conditions, outlined above, but due to labor conditions. The aggressive policy of the unions, controlling the various trades, and their practice of holding building loan operators to account for the failure of the builders to whom they loan money, has made it such a hazardous enterprise, as to practically stop the making of building loans to all but the most responsible builders.

The speculative building industry today is therefore largely conducted by men of large capital, thoroughly trained in the business and with a well organized staff. They, however, can hardly be termed speculative builders, but instead should be known as operating builders or investment builders.

The city owes its growth to the speculative builder. It was his courage, foresight and enterprise which made possible the wonderful up-building of this city, all within the last generation, and which has completely revolutionized our mode of living, converting a majority of our homes from private dwellings to a city of apartments, or as has sometimes been termed, "Cliff Dwellers."

We have today the most modern and best-equipped apartment houses of any city in the world. Our tenement houses were built too rapidly at first to be good, or well planned, but in later years we have improved in this form of construction, and today our model tenement houses are considered examples of the best of their kind.

RAZING BUILDINGS.

Some of the Problems to Be Met by the Demolisher.

By H. W. SCHEDE, President, Rheinfrank House Wrecking Co.

THE services of a trained engineer are called for in the demolition of buildings in New York at the present time. Of the six or seven hundred structures that are torn down annually in the greater city, many call for science of a high degree and excellence of management in order to demolish them successfully and safely.

Among the types of building that require extra care and attention on the part of the wrecker is the one built prior to the year 1830. In structures of this class the component parts, such as floors, beams, walls, etc., require the keenest analysis and knowledge, and it takes years of experience to discover the weak portions, and the locations that will require shoring and bracing of the beams and walls.

Instances of Accidents.

Through lack of such experience it has often occurred that floors, though showing the same size of floor beams and walls as other structures in the vicinity, have collapsed where only one-tenth of the weight was carried upon them. A collapse of this character may occur from various causes, one of which being the old-fashioned method of mortising the header beam and the trimmer beam, which after years of strain and the fact that the lumber has become thoroughly dried out, causes the mortise to split.

In another instance the plumbing contractor, when installing a basin or toilet in a section of the building a distance from the waste line, cuts away the floor beams from the basin to the waste line to allow the necessary pitch for the flow of waste water. We have found in some instances that the beam nearest to the waste line had been cut away to one-tenth of its original height. Conditions like this require the best of experience and judgment and the wise wrecking contractor immediately begins to shore up this weak spot before allowing any demolished material to be placed on the floor.

Another class of buildings that calls for good judgment and wide experience is the one that involves party walls. Many instances have been found where the party walls have not been tied into the walls of the adjoining structure, particularly where the latter building happens to be of later construction and many stories higher. When the new walls are built to the level of the party wall, they are corbeled out to a point directly over the center of the party wall, and built upon it from that point to the top of the new wall. This construction seems safe as long as the old building remains, but when the old structure is removed and the floor beams withdrawn from the party wall there remains nothing to sustain it and it will collapse unless either shored or tied in with bolts and anchored to the adjoining wall.

A further instance that requires great caution and skill is where a heavy stone cornice projects over the front wall. Wrecking contractors have often found that the weight of the projecting portion of the stone is heavier than the section of the wall and almost entirely dependent upon anchors and the weight of the masonry over it to hold it in place.

Still another type of structure often troublesome to the contractor is the one built with iron beams and flat arches. Where these arches happen to be only eight inches in thickness, as has often been found, they do not sustain any great amount of extra weight, and the fall of one arch will often break through the one directly below it and so on down through all floors to the basement of the building. Much damage can be done in this manner and it is also a dangerous hazard to the workmen engaged in the demolition of the building.

Fourth Avenue's Experience.

In 1905 before the construction of the present subway Fourth avenue was lined with small shops. According to the "Industrial Survey" the average height of buildings was three floors and the averaged assessed value of the land per block $654,333. The opening of the subway increasing accessibility resulted in the erection of new buildings, so that last year the average height of buildings had increased to nine floors and the assessed value of land per block to $1,803,333, a gain of $1,149,000, or nearly 300 per cent. Today, Fourth avenue is one of the best business streets in New York City, the recognized centre of the silk trade.

SOME FORMS OF LIABILITY INSURANCE

Brief Outline Given to Guide Building Contractors as to their Responsibility

By WILLIAM T. RITCH

IT is sometimes a puzzle to building contractors to decipher the several forms of insurance required or necessary under the present laws, so far as their responsibility for personal injuries extends to employes, to owners, to sub-contractors' employes, to third persons having business about the workplace, and to the public generally.

The first form of insurance thought of is Workmen's Compensation. In many of the states, employers of labor are compelled to protect their workmen, and by a recent amendment to the New York State law, it is a misdemeanor if an employer fails to insure his employes. Even a contractor of limited experience knows that linked with his contract to build is the obligatory insurance requirement. Some contractors have a notion that their policy covers accidents to employes of sub-contractors. But this is not so inasmuch as the policy relates to employes of the insured employer. It does not cover the liability of any party unless his name is incorporated in it as an additional assured, and in any event, it is usually contrary to the established insurance rules to cover the Workmen's Compensation obligation of two distinct and independent employers of labor in the same policy contract.

This much is true, however, that on percentage jobs the owner and the general contractor are insured together, since their interests are considered identical, but the insurance cost is no higher in these cases. Sometimes a contractor on percentage work overlooks the necessity of having the owner's name put in the policy. It might not be out of place to suggest that contractors should always inform their insurance agents or brokers when their relation to owners is that of principal and agent. It may save much trouble when loss occurs.

Contractors having jobs in other states should see that additional Compensation or Employers Liability Policies are issued covering their liability under the laws of these states. Some months ago, the New York Appellate Division handed down a decision that an employe, a resident of New York State, engaged to perform work in Pennsylvania, and killed in the performance of his duty, had no remedy under the New York Compensation Law. Fortunately, the casualty company had previously issued a policy covering this contractor on the Pennsylvania job.

The second form of insurance that all contractors should have is Public Liability insurance. The policy protects the employer against claims for personal injuries due to the building operations described in the policy and suffered on or about the workplace by any person other than an employe. This insurance is a necessity as the hazard is great, inasmuch as building construction is carried on, it may be said, in the very midst of the public. Defective hoisting tackle, careless hoisting operation, an unguarded excavation or a number of things may lead to the injury of a passer-by. Then the same risk exists as regards the employes of other contractors or sub-contractors, who may be employed on the job. If an employe of a contractor is negligent, and an employe of another contractor is injured thereby, the latter employe has a common law remedy against the original contractor. It is true that he may collect Workmen's Compensation from his employer, but he has either remedy to pursue. If he elects to take Workmen's Compensation, then his employer may sue the original contractor for reimbursement, alleging that the accident in question was due to the negligence of the employes of the said original contractor. The Public Liability policy covers all these contingencies, and thus its necessity is apparent.

WILLIAM T. RITCH.

The limit of indemnity for which the company is liable is $10,000 for an accident involving one person and $20,000 for an accident involving more than one person. But a number of contractors still carry the old limit policies of $5,000 for one person and $10,000 for two or more persons, for they apparently do not realize that verdicts are constantly getting larger. In a recent compilation of large verdicts we find awards paid in the amounts of $20,000, $25,000 and $30,000. There is a case on record of a maximum amount of $101,000.

A contractor who sublets part of his work to sub-contractors requires a third form of protection, known as Contractors' Contingent Insurance. This policy covers his contingent liability in connection with accidents that result from the operations carried on by the sub-contractor. The cost of this insurance is small when it is considered that the insurance company represents the general contractor in all litigation covered under the policy. One actual case in point had nine trials, six appeals to the Appellate Division and three appeals to the Court of Appeals, and the cost of the litigations alone exceeded $4,500. The limits of this indemnity are always the same as the Public Liability policy.

The next form of insurance is protection which the contractor is sometimes obligated by contract to furnish the owner. This is called Owner's Contingent Insurance, and protects the owner against claims or suits brought by any person who has sustained injuries by reason of the construction work. The injured person may be an employe of the general or sub-contractor, a passer-by, a trespasser or a person having business on the premises. The limits of indemnity are usually the same as the Public or Contractors' Contingent Insurance.

Whenever a contractor owns teams or automobiles, or has control over hired teams or automobiles, he should protect his interests by carrying Teams or Automobile Liability Insurance. This insurance covers against claims brought by persons who have sustained personal injuries by reason of the negligent operations of these vehicles. Limits of indemnity are usually the same as for Public Liability Insurance. Linked with this insurance is the so-called Property Damage Insurance, which affords security against claims brought by persons whose property has been damaged by the negligent operation of the vehicle.

In conclusion, it may be appropriate to say that this explanation is a mere outline. To do justice to the subject, considerable space would be required, but I hope that the few thoughts I have given will prove helpful to those seeking information on this very important topic of Workmen's Compensation and Liability Insurance.

TENEMENTS IN 1916.

(Continued from Page 115.)

in tenement houses where cases of infantile paralysis occurred. The conditions in all such cases were treated as extremely urgent, and inspectors were required to see that bad conditions were cleaned up at once. Where owners were inclined to be dilatory, they were brought into court and fined.

As an instance of how the Department endeavors to check dangerous conditions as they arise in tenement houses, this year a special inspection was conducted relative to the fireproof self-closing doors required by law for the dumbwaiters, stair halls and other parts of the buildings. Such doors are designed to prevent the spread of fires. It found that in many instances the springs or other self-closing devices were either broken or removed and safety consequently greatly impaired. During the first three quarters of the year, more than 40,000 defective doors had been made self-closing as a result of this special inspection.

Improvements to existing fire escapes to keep them in a safe condition constitute naturally a large part of the Department's work. The statistics for only the first three-quarters of the year are available, and these show that from January 1 to September 30, 37,174 fire escape improvements had been made.

Between January 1 and December 1, 1916, when this report was prepared, 771 plans had been filed in the Department for the erection of 1,291 tenement houses (23,067 apartments) at an estimated cost of $66,502,500. During the corresponding period of 1915 there were filed in the Department 1,178 plans for 1,979 tenement houses (32,354 apartments) at an estimated cost of $69,756,350.

It is interesting to note that from January 1 to December 1 exactly the same number of new building plans were filed for the Borough of Manhattan in both 1915 and 1916, the number being 158. The number of new tenement houses planned for the Borough of Manhattan during the same period for both years was also practically the same, namely, 201 in 1915 and 204 in 1916. The cost, however, in 1916 far exceeded that of 1915, being $39,110,500 for the former and only $24,560,000 for the latter year.

Brooklyn has shown a decrease in the number of tenement houses planned this year as compared with those planned up to Deecember 1, last year. There were filed 329 plans for 566 tenement houses in Brooklyn up to December 1, 1916. The cost of the 566 tenement houses is shown to be $12,555,500. During the corresponding period of last year 554 plans were filed in the Brooklyn office for the erection of 979 tenement houses, at an estimated cost of $19,681,100.

The figures for the Bronx during the same period of each year are as follows:

1915—293 plans, 477 tenement houses, estimated cost, $21,602,250.

1916—137 plans, 220 tenement houses, estimated cost, $10,946,500.

For the Borough of Queens the figures for the same period are as follows:

1915—167 plans, 316 tenement houses, estimated cost, $3,859,500.

1916—145 plans, 299 tenement houses, estimated cost $3,845,000.

Certificates of occupancy were issued for 1,085 new tenement houses up to December 1, 1916, as compared with 1,235 for the corresponding period of 1915.

The number of alteration plans filed in 1916 during the period covered by this article was 2,201 affecting 2,403 tenement houses, at an estimated cost of $1,676,137. These figures compare favorably with those for the same period of 1915, the cost for 1916 being slightly greater than for 1915, although the number of plans was slightly less for 1916.

SHORT HISTORY OF ASBESTOS AND ITS MODERN APPLICATION

By B. TREADWELL, H. W. Johns-Manville Co.

THERE are people who will tell you just about how long ago an old Egyptian gentleman named Ptolemy lived and a great many things about his life. At any rate, he died several centuries before the Christian Era, and so probably his doings do not concern the average man very closely today. What interests us most about him, however, is the fact that he knew a great deal about asbestos, and that asbestos cloth had been found in Egyptian tombs thousands of years old, which is just as good today as when it was first made. This shows that asbestos is a durable material.

Coming a little nearer to our own times, we find the Romans and Greeks, who lived about two thousand years ago, have left many pieces of asbestos cloth, which they used for wrapping around the bodies of their wealthy people for cremation. In this wrapping, apertures were of necessity left to allow free passage for the flames. Legend tells us that the sacred fires of the Sun Worshippers were never extinguished from year's end to year's end. The lamps of the famed Vestal Virgins and those of many ancient temples were also kept perpetually lighted, and to make this possible it is said that they used as an auxiliary, wicks made in part of imperishable, incombustible asbestos fibers.

It is related that the great Emperor Charlemagne, who ruled over a large slice of Europe in the ninth century, had an asbestos cloth which he used to astonish his guests with by throwing it into the fire and taking it out again as good as new. It is not easy today to imagine the excitement such an event would cause in those far-off days—which we allude to as "The Dark Ages." Perhaps such of the "witchcraft" of those times was produced in equally simple ways.

About the year 1250 A. D., a famous explorer called Marco Polo was making discoveries of many new lands in the Far East. He found that the Tartars and Chinese knew about asbestos and its fireproof qualities, and were in the habit of using it for many purposes. They tried to mystify him by telling him it was made of the skin of the fabled salamander (a lizard which was said to live only in the midst of fire), but friend Marco was too old and wise an explorer to believe this and soon proved its real character.

The term "asbestos" is derived from the Greek and signifies "unquenchable," "inextinguishable," "unconsumable." The Germans call it "Steinflachs" (stone-flax). The Italians call it "amiantho," signifying "undefiled," "pure," "incorruptible." The French Canadian miners call it "pierre-a-coton" (cotton-stone), because of its similarity in appearance to cotton.

Asbestos is found in many parts of the world, in many different forms. Its origin is probably volcanic; and, while many theories have been advanced to account for its peculiar characteristics, the most generally accepted is that the deposits took shape during the pre-historic cooling of the earth's surface, and that either water or steam is responsible for the dissolution of the primary formation and for its rebuilding into its present fibrous form. Asbestos is closely related to talc and soapstone. A chemist would describe it as a silicate of magnesia. It has slight traces of other minerals, and strangely enough the more water it has naturally combined with these the longer and more flexible are the fibres.

The various forms of asbestos will go generally under two headings: Chrysotile and amphibole. The following is a typical analysis of chrysotile asbestos: Silica, 40.87; magnesia, 41.50; ferrous oxide, 2.81; alumina, 0.90, and water, 13.55; specific gravity, 2.219.

This is the only kind of fibre that has such commercial value. It is a fibrous form of serpentine. Color from a greenish-white or olive-green to a brownish shade.

In external appearance and chemical composition both types of fibres are much alike. The difference between the two, between good and bad asbestos, will be at once perceived when its fibres are subjected to tearing, twisting and bending between the fingers. Chrysotile will give out silky threads of considerable length, amenable to the various spinning processes, while the amphibole asbestos will split up into harsh and sometimes brittle fibres, occasionally breaking up when rubbed between the fingers.

Chrysotile is a hydrous silicate of magnesia, while the amphibole varieties are all silicates of lime and magnesia. It may be noted that none of the anhydrous varieties have much of the unctous feel which is a common characteristic of chrysotile.

While, as before stated, asbestos is found nearly all over the world, the principal source of supply is in the Province of Quebec, Canada. This is chiefly owing to either the unsuitability of the product of other countries for manufacturing purposes or to the difficulty of placing it on the market. Russia and China, for instance, are reputed to contain large quantities of asbestos, but, owing to lack of transportation and other facilities, it is almost impossible at the present time to secure a regular supply.

The discovery of asbestos in Canada is rather interesting. Large fires having swept away the forests of Eastern Quebec, the discovery of veins was facilitated by the weathering of the mineral on the surface. Within about a year mining operations on a small scale commenced and about fifty tons were taken out. For the next ten years there was a rapid development of the industry. Villages sprang up like mushrooms. The population, comprising, before the beginning of mining operations, only a few scattered families, increased to several thousands.

Today the asbestos mines in the Eastern Township constitute one of the most prosperous industries of Canada. This is of special interest to the mining and industrial world from the fact that in so far as now known they practically represent the only deposits where this mineral of a quality adapted for the spinning can be mined with a profit. The advantages of accessibility and ease of mining are so great that undoubtedly Quebec Province will long enjoy the privilege of being the principal course of supply, not only in North America, but in the world.

Asbestos lies in veins or pockets varying in width from half an inch to about four and a half inches, sandwiched in between layers of hard, semi-volcanic rock, known as serpentine. Sometimes a vein crops out on the surface and may be easily seen. It may go down only a short distance or may extend one hundred feet. The experience of asbestos miners, particularly in Canada, has been that, except for an improvement in color, the quality of the fibre does not improve the deeper the mine goes.

Owing to the irregularity of the veins, it is impossible to mine it by the means of shafts or tunnels and galleries. The open quarry system in use has one objection, it is impossible to carry on operations in bad weather.

The crude asbestos is mined in a rough block, often containing impurities, such as sand, traces of iron, etc., and all of these must be removed before the actual manufacturing stage is reached. The best pieces are first "hand-cobbed," a treatment which removes all external impurities. Next the rock is put through a course of crushing, screening and blowing. This not only separates the impurities, but also roughly grades the asbestos fibres into fine and course, long and short, and eliminates the finer, dust-like particles.

Only the finest, long fibres can be used in Johns-Manville roofing, and these are selected with special care to insure uniformity of texture and the greatest possible tensile strength. The shorter fibres and powdered asbestos are used in making fireproof paints, cements, plasters, etc., where tensile strength is not demanded.

Asbestos, as used in manufacturing today, is without doubt one of the most wonderful of the world's marvels. To dig a rock from the bowels of the earth and turn it into fabric as soft and flexible as duck, muslin or canvas; a cord which will hold many pounds or tie any package; a board which is as easily worked as wood and is far more durable; a paint, a powder or a fluffy, downy wool, is surely a series of remarkable achievements.

Comparing an asbestos roof with any other, two great advantages are at once apparent — fireproofness and durability. The storms of winter and the heat of summer cannot affect it in any way. There is nothing to rot or decay—nothing which has not existed for thousands of years in almost the same state as it is today. Unlike many products, its nature is quite unchanged in manufacture, and it retains its original unique powers of resistance to every outside influence.

The significance of asbestos as a roofing material is two-fold: First, because of the added protection against fire. This is a real protection. Asbestos can't burn, won't burn, and protects whatever it covers from burning. Think for a moment; how real the fire danger is and how easily a fire is spread from roof to roof. Think of the loss, the danger, the inconvenience, of a fire. No insurance policy can cover all this.

The other point is, protection from the weather, not merely keeping out the wet, but keeping the house warm in winter and cool in summer. Asbestos is used in great quantities as a material for covering steam lines to keep the heat in and for protecting cold water pipes against the surrounding warm air.

Every buyer of roofing ought to know what he is buying and whether he is getting service or just a roof covering which will need renewal every few years and will probably cause more or less trouble of the intervening time.

The list of asbestos products at present in use is quite a long one, including many types of fire resistant roofing, shingles and sidings, fabrics for many purposes, theatre curtains, clothing and tools for workers in heated metals, insulations for pipes, boilers and smoke-stacks, fireproof rooms and booths for motion picture machines, etc., besides a long line of domestic utilities, electrical insulations, railroad, automobile and street car accessories.

Asbestos Wood.

The possibilities of the application of asbestos in all of its forms to modern usage are varied and practically unlimited and this interesting mineral is now to be found as a component part of a great many articles in daily use. The many excellent qualities of this material has made it indispensable in the manufacture of products that have to withstand high temperatures. One of the unique uses to which asbestos has recently been put is as a fireproof and practically indestructible substitute for wood. The asbestos is combined with hydraulic coments and is formed into a product that may be used to advantage for many purposes that wood is generally used. This product can be readily worked with ordinary wood-working tools and holds nails and screws with tenacity. Asbestos wood can be painted or varnished and will take a high polish. This type of material is recommended for use in fireproof partitions, wainscoting, mouldings, ceilings, portable houses and garages, fireproof cabinets, acid and other tank linings and in fact is susceptible of an application that is ever widening in its scope.

ADAPTABILITY OF ARCHITECTURAL BRONZE

Possesses Artistic Possibilities, Both as to Color and Refinement of Detail—Permanence a Notable Feature

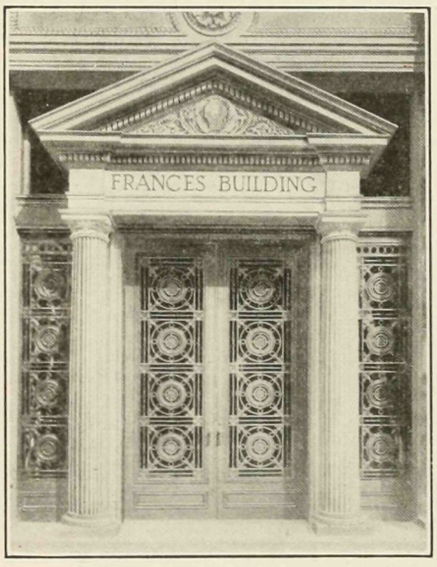
By C. A. FULLERTON, of Gorham Company

BRONZE has since the dawn of recorded history of man been regarded as the medium of the highest expression in metal work for architectural, sculptural and decorative purposes other than jewelry, in the nobler metals. With copper as its basic component and the alloys of zinc and tin, which go to make up bronze, it is susceptible of the greatest refinements of handling and its adaptability has made it the favorite of the greatest artisans of all ages.

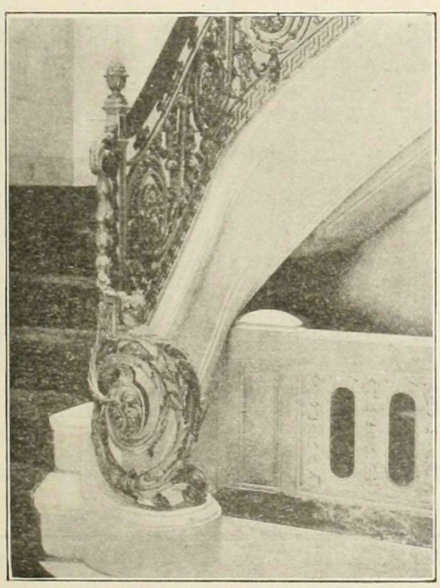
In addition to its artistic possibilities both in color, as to refinement of details, and adaptability, it possesses the added advantage of being permanent and of the most enduring quality of any of the nobler metals known that are possible for architectural and building purposes.

C. A. FULLERTON.

The fact that bronze will take on its own patine or coloring by exposure to climatic conditions and that this color is in itself a beautiful finish, requiring no further attention, makes it attractive from the standpoint of economy as well as beauty, so that architects and builders on the better class of construction gladly seize on this metal as the ideal one with which to construct permanent monumental work.



It has been estimated on numerous occasions that as compared with iron for certain positions where the upkeep is essential and where the question of appearance, neatness and richness are of prime importance, that it is as economical from the standpoint of capital invested to have work executed in bronze, upon which the upkeep is practically nil, as to execute it in ferrous metals that have to be repaired by painting frequently. This, taken in connection with the fact of the greater richness, which is an inherent quality of bronze, makes it the material de luxe for ornamenting the finer class of construction, and it is estimated that in the majority of cases and in the long run, considering interest on capital invested and the cost of the upkeep of iron for a like position and of like design, bronzework will be less expensive, or come out practically even, with the additional value of having the real thing in one's possession at all times.



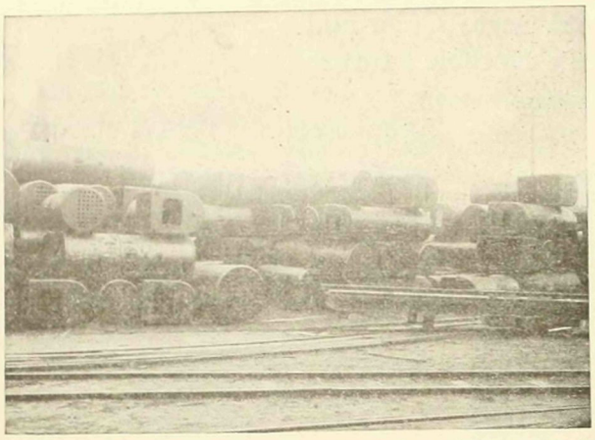
Numerous imitations of bronze work have been attempted and are continually attempted in the way of painting iron or electroplating iron. These methods are frowned upon by the discerning architect and designer, not only from the standpoint of sentiment, wherein an imition is manifestly carried out, but from a standpoint of practicability as well, as it is the common experience of those who observe that iron work which is electroplated will in a few years disintegrate the copper covering and the time comes when for purposes of appearance such work has to be painted in any event.

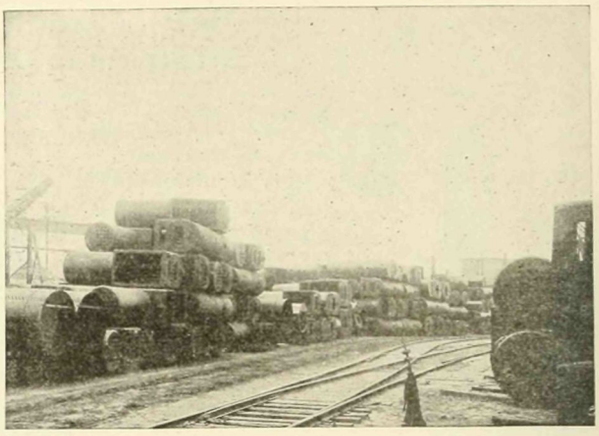
The bronze worker has no fight with the iron worker; they are sister industries; but we do insist that the iron designer and the user of iron use it as such and prepare and finish it with the only presently practical medium known for its beautification and preservation—paint.

The bronze industry in the United States is of comparatively recent growth. I believe that at the time of the Columbian Exposition in Chicago, the Columbian Building (executed by one of the large Chicago concerns) had an installation of architectural bronze work valued at about $50,000, which at that time was regarded as one of the largest bronze jobs in the country. Today bronze contracts of this size are quite the regular thing in the finer class of building construction; in fact, numerous contracts have been let in the last few years in which the bronze contract has run into the hundred thousands.

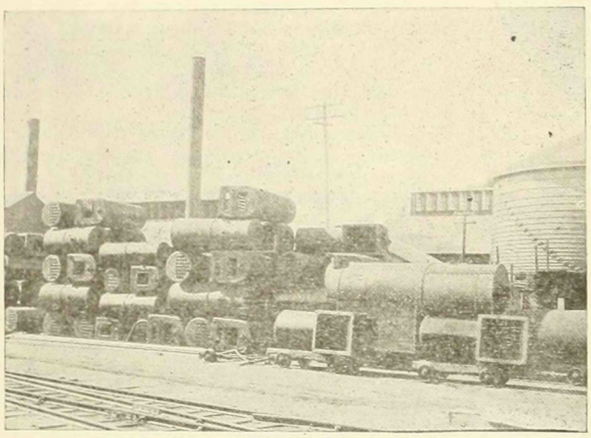
In the matter of the finer shop and store fronts, numerous progressive concerns have put in bronze fronts in place of iron and some of the most attractive shops along the avenues are of this material; it being recognized by the progressive owner that this material lends a class of distinction to his premises if properly handled that nothing else can do. Nearly every store front along Fifth avenue that is notable for its beauty of design, distinction and general air of classiness has a front of bronze construction.

This again is imitated by various classes of construction in bronze that dwindles down to the mere sheet case construction of those who cannot bring themselves up to the point of making an initial expenditure sufficient to put in the real things. It is observed, however, that the buildings going into this class of handling are doing the very best kind of advertising and establishing their class by their fronts and the aspect they present to the street. There is a subtle something about a well executed bronze front that nothing else can imitate. So also the astute builder of apartment houses is giving his buildings the class distinction of a private residence and the richness that is produced only by the use of this metal and in numerous high class apartments that have been erected recently builders, architects and owners have decided that it is money well spent to execute their entrance ways, elevator fronts and other metal ornamental and decoration of the building with architectural bronze work, which, in connection with the fine marbles and woods produces the highest grade of enrichment obtainable.

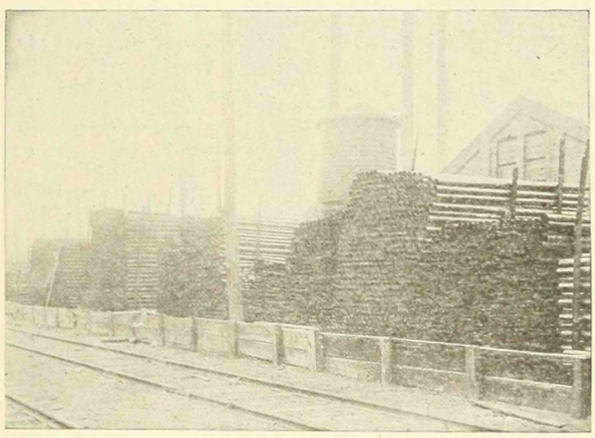




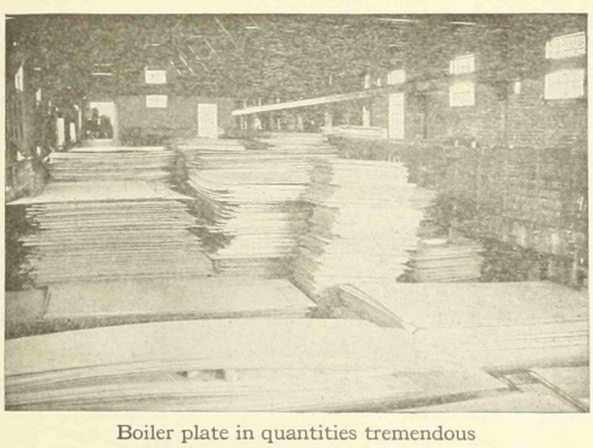
These photographs show a few of the many large piles of finished boilers in our yards today and each of them is a photograph of a different pile



Here they are — Kewanee Boilers — waiting your order



A pile of boiler tubes



Boiler plate in quantities tremendous

We Have the Goods

Somebody wired us and said: "When can you ship three Kewanee Boilers?" We wired back, "We are shipping them today — send along your order."

Then the Boss said to the advertising department: "Your job is not only to tell folks that we make good boilers—but that we have them ready for them."

That happened at 10 a. m. At 11 a photographer was in the plant making photographs of boilers and tanks already made and waiting your order — and of steel plate and boiler tubes and boiler heads all ready to be made into Kewanee Boilers. That was just four days ago. Here are the photographs.

Have we got the goods? We have.

We have in our yard—or have necessary material to make — 5500 Kewanee Boilers, Garbage Burners or Tanks. Send your order to Kewanee. If we haven't just what you want we can build it right away from materials in stock.

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KEWANEE, ILLINOIS

Steel Heating Boilers, Radiators, Tanks, Garbage Burners

New York City, 47 West 42nd Street

"ECONOMY" WATCHWORD IN HEATING BOILERS

Those Burning Either Hard or Soft Coal Best for Owner —Fluctuating Price of Coal Makes this Imperative

By CHARLES L. COLLETTE, of Kewanee Boiler Co.

WE yield strongly to the feeling that building activity will increase during 1917 and that the year will witness the erection of many high class apartment houses and commercial buildings of the type of structures that are the principal consumers of our product. Our business has doubled over former years, an increase accounted for by the number of buildings that are turning to the use of steel firebox boilers.

Although it is true that the increased sale of any product entering into the construction or equipment of buildings, is not an absolute indication of what can be expected during the coming months, the sales during the past year have proven very conclusively that better building conditions in New York City prevail, and the requests for boiler quotations point quite clearly to the fact that one of the best building years that New York City has ever had lies just ahead of it.

Some years ago a rather apt expression, "boilers are boilers," was used, but today this is not true. Practically every boiler manufacturing concern in the country is specializing in one or more particular makes of boilers which are adapted for certain work.

It has been found that a horizontal tubular boiler, installed with a brick setting under usual local competitive conditions, is not as efficient for heating as a boiler specially designed for heating purposes. And it is true that the most popular heating boiler of today, for buildings of any considerable size, is a steel heating boiler of the firebox type—that is, a boiler where the firebox or combustion chamber is a part of the boiler.

For the larger heating installations steel has very thoroughly proven its great superiority over any other material, and the advantages of a firebox boiler for heating are its ease of operation, comparatively small space required for its installation, and due to the fact that the combustion chamber is entirely surrounded by a water jacket (except on the bottom), its greater effective heating surface and its ability to steam quickly and to make steam even when only a small fire is kept on the grates.

The first steel heating boiler of the firebox type was equipped with the ordinary up draft grate. In this type of construction the fuel was fed onto the top of the fire.

Due to New York City's stringent smoke ordinance and the general ease of obtaining anthracite coal, this type of furnace proved successful. But in the past few years many building owners have wisely seen that a boiler which would permit them to burn either anthracite coal or the higher volatile soft coals would make possible a very large saving in their heating costs.

The price of coal is something which is subject to great changes and this has been particularly true in the last two years when large amounts of our domestic coals have been exported. But, generally speaking, a dollar spent for bituminous coal buys more heat than the same money spent for anthracite. And this means that the building owner who is far sighted enough to heat his building with a boiler which will burn either hard or soft coal and still keep within the stringent provision of New York City's smoke ordinance, will effect a saving in his fuel bills, well worth having.

For many years engineers have recommended what has long been known as the down draft type of furnace for the proper burning of any coal containing a large per cent. of volatile. This type of furnace is equipped with two grates, one above the other. The fuel is fed onto the upper grate and the draft is through the upper door down through the fresh coal and through the bed of hot coals. Consequently the gases distilled from the fresh coal are drawn down through the hot bed of fuel and are completely burned before reaching the comparatively cool surface of the boiler.

Inasmuch as all of these gases are completely burned there is nothing left to make smoke and the result is the ability to use soft coal, comply with the smoke ordinance, and get a greater degree of efficiency from the boiler than is possible with hard coal. The facts just mentioned have caused the more important and keener building owners to equip their buildings with boilers of the type just described.

Although this particular boiler is designed for the burning of high volatile soft coal it has been found possible to burn either hard or soft coal in it with great efficiency. This means that the owner of a building equipped with a boiler of this type can buy and use the coal of which he can get the greatest amount for a given sum of money. In a sense, it renders him independent of the various manipulations of the coal market. When hard coal is scarce and high in price he can use soft coal, and when soft coal is impossible to get or when its price makes its use prohibitive, he can use hard coal in the same kind of a boiler.

It is, of course, impossible to forecast whether or not the coal situation in the City of New York will be clarified and whether or not New York will finally use hard or soft coal. The experience of the past years indicates that there may always be the great fluctuation in price which is now so noticeable. But whether this situation is relieved or not there can be no doubt but what the wisest move on the part of building owners is to equip their buildings with a boiler that will satisfactorily and economically heat them with whichever kind of coal can be bought to the best advantage. And it is quite apparent that the big building owners are working along these lines.

There is no one manufacturer who has a monopoly on the making of the down draft steel firebox boiler which has been described and which is being used in New York City for both hard and soft coal. As a matter of fact there are at least a dozen big manufacturers in the country who are making a type of boiler of this kind which has proven its ability to do the required work.

HARDWARE SITUATION.

Though Prices Are High, Producers' Profits Are Only Normal.

By E. C. WALDVOGEL.

MANUFACTURERS of builders' hardware, which includes door locks, butts, bolts and other goods in the line of finishing hardware, have not found business for 1916 as satisfactory and prosperous to themselves as have producers of many other goods. There have been several reasons for this condition. The volume of business has not been large, and although many large buildings such as factories and commercial structures have been erected, buildings like these require but comparatively little finishing or building hardware. Structures having many openings, doors, windows, closets, as in residences, hotels, office buildings, etc., have not been erected to any large extent.

The costs of production have also been very high and the several advances in selling prices made by the manufacturers have barely kept pace with increases in costs of materials and labor. The scarcity of material has also added to the expense. Manufacturers to give as far as possible reasonably prompt deliveries have often bought material in the market at a premium over regular market prices so as to obtain quick shipments; have paid express rates for transportation on the material to the plant and on the finished product to customers.

The outlook for a larger volume of business for 1917, however, is promising, and, in fact, the last three months of 1916 have shown an improvement over the first nine months of the year. There will be more building of the kind that requires a larger proportion of finishing hardware and the dealers are also buying more freely for stock. Certain lines of industry and certain investments have produced a great deal of wealth and at least some of this will be put into real estate.

Although to many of the prospective builders and hardware dealers present prices may seem high, we believe that they have come to realize, as have the manufacturers, that there is nothing in sight to indicate any recession in prices for many months to come, whether the long looked for peace comes at an early date or the war continues for a year or several years longer. Manufacturers of most lines of iron and steel products have orders on their books that will carry them through 1917 and the new business coming to them in the natural coure will carry them beyond the coming year. Certain items of products to insure delivery when needed must be contracted for from twelve to eighteen months in advance. All this being a fact, dealers are ready to place themselves in a position to take care of their wants knowing that there are going to be consumers for the goods and they might as well furnish these goods as their competitors. Prospective builders are also going ahead rather than wait for possible lower prices after two or three years. There is one thing that dealers and builders can feel sure of and that is that manufacturers to-day are selling their products as close to cost as they did two years ago, that their selling prices must advance as cost of material and labor advances, and cost of labor and material are governed to-day as always by supply and demand. What these two are today and probably will be for some time to come is plain to everyone in business.

As to builders' hardware itself, its designs and finishes, there have been some very marked changes in the past few years. The lines or designs of the trim, such as escutcheons, plates, knobs, sash lifts, etc., are simple, strong and bold, highly ornamental pieces being rarely used and only to meet exceptional conditions in the ornamentations of ceilings, mouldings, or finishings of the room. The finishes on the hardware are principally those of the metal of which it is made, that is, brass or bronze, and doing away with the oxidized finishes. Polished and dull brass and bronze surfaces are the most durable and satisfactory on builders' hardware. These finishes should also be given the preference where reasonably prompt delivery is a consideration.

All the varied shades of oxidization cannot be carried in stock by the manufacturers or dealers, but the polished, dull brass and polished bronze finishes can and are in such goods as are required first, namely, butts and locks. Dealers and builders should bear this in mind when ordering or specifying hardware, and also should remember that these three finishes give the best service and cost less than the hardware with oxidized surfaces.

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STATUS OF THE BUILDING MATERIAL MARKET

Gradual Advance in Cost of Materials Has Reacted Upon Building Situation—Labor Strikes Also a Factor

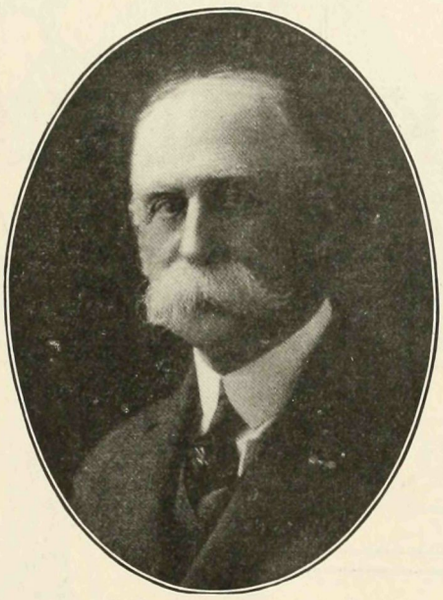
By FRANCIS N. HOWLAND

THE gradual advance in the cost of other than masons' materials from various causes has reacted upon the building situation, especially as regards speculative building, that at present is at a low ebb and, as the cause continues, is likely to come to a standstill.

Labor strikes, shortage of all kinds of material entering into the construction of buildings, high wages of workmen, and scarcity of same, have all tended to create a condition that may well cause business men to pause, and ask, where will it lead us, provided it continues much longer? We have also been met with freight congestion, delayed shipments and other railroad troubles that have added to the general discomfort and naturally added to the cost of all articles coming by rail.

No doubt the war in Europe has been one of the factors responsible for the present unfavorable conditions, for while it has resulted in pouring into this country millions in money that would in time be absorbed in real estate and allied interests, it has upset the labor market, and caused a shortage in all industries using unskilled labor, so that brick, lime, cement and other building material manufacturers have not been able to meet the call on them.

As to when we may expect lower prices, it is hard to say, but it does appear as though comparatively high prices will prevail until the cause is removed, viz., the close of the European conflict; then, with the stoppage of the many munition manufactures, workers will naturally drift back to their old employments



FRANCIS N. HOWLAND.

in such numbers as to result in a fall in wages all along the line.

Considering all that has been written on the subject, and judging from past experience, I think it would be to the advantage of the prospective builder, especially the speculative one, to wait until a more favorable time for operating.

At present writing there is a decided shortage in building material caused by conditions mentioned before, and whether a shrinkage in building operations will help the dealers during the coming winter is a problem.

Of course, there is harm to the building industry from "jacking up prices," but from my viewpoint it is a condition thrust upon the manufacturers from causes they could not foresee and help, and in consequence dealers and users must take their medicine and await the return of normal conditions.

I believe it would be to the future advantage of the brick industry if manufacturers would be contented with present prices of their product, and not have such an advance that would tend to drive purchasers to old brick, hollow brick, cement products and other articles that could take the place of brick.

For in over fifty years' experience in the building material line it has been noticeable that the reaction from too high or too low prices of a commodity has resulted in disaster sooner or later. And it does seem that brick manufacturers should put a price on their output for at least six months, or, better still, for the life of the work dealers are asked to give quotations on, the same as cement, lime and other building material manufacturers do.

If a fair price for brick could be arranged for between manufacturers and dealers for the coming six months I believe it would result in a better feeling, and in the end more profit to the manufacturer; for it would carry him through a period in the spring season when work is slow in starting, and an accumulation of brick in market would cause very low prices, especially if abnormally high prices had been asked during winter months.

SAND AND GRAVEL.

Biggest Business in History of Trade During 1916.

By FRANK F. GALLAGHER.

THE past year brought to the sand and gravel trade of the Metropolitan district the biggest business in its history. Besides the demands of building construction, which during the last half of the year have been abnormal, and the requirements of the subway and other public works in the city, there has been a large amount of terminal and industrial construction in the cities on the New Jersey side of the harbor. The demand for gravel particularly has taken all that could be mined and shipped, and the product of the Goodwin-Gallagher Company, for one, has been sold for several months ahead. In fact, it has not been possible for several months past to buy either gravel or broken stone in the open market for prompt delivery.

Labor has to some extent hindered production, but the greatest obstacle to free business has been the limitations on transportation facilities. It has been impossible to get bottoms enough to distribute the material in required quantities, owing to the great pressure put upon harbor transportation by the congestion of freight, primarily caused by the extraordinary foreign commerce engendered by the war in Europe. We can neither build, buy nor charter boats at reasonable prices. The shipyards are full of work, the British Government is buying up available tugboats, and extraordinary rates are asked for scows, barges and lighters. Scows used to be plentiful for charter at $6 a day; now $15 a day and more is asked for their use, and it is impossible to get a sufficient number even at that price. The highest rate for a covered barge was formerly $10 a day; now $18 to $20 is asked, while ordinary lighters without power cost $15 to $20 a day. Our firm tried to get twenty scows built a year ago, but were unsuccessful in getting any shipyard to take the contract for a reasonable price or delivery.

I fear that the high prices of practically all materials will have the effect of reducing the amount of speculative building construction that is contemplated; but still there will, in my opinion, be enough work of other kinds in the coming year to make 1917 one of the biggest building years in history. This will be due primarily to the revival of real estate buying for permanent investment and the improvements that will be necessitated thereby.

The large demand for sand and gravel during the last half of the year has not produced the profit for the wholesalers that might ordinarily be expected. Early in the year the price was very low, and there was a cut of five cents a cubic yard from the previous year for sand. The companies, expecting the second half of the year to be no better than the first half, allowed themselves to be contracted up heavily and they have consequently not netted more than eight per cent. over the old price with which to meet the higher costs of production and transportation.

TREND OF HOLLOW TILE.

Prices Steadily Advancing and No Prospect of a Recession.

By HENRY M. KEASBEY.
Vice-Pres. National Fire Proofing Co.

HOLLOW tile was not so sensitive to the influence of war in Europe as steel and did not respond so quickly, but during the past year the price has been advancing steadily without any temporary recession such as has characterized the steel market. Although clay is not a war material, the cost of labor and coal, which are large factors in the cost of manufacturing hollow tile, has advanced greatly and caused several sharp rises in the price of the finished product. After the first few increases some buyers believed that prices would fall again and decided not to come into the higher market. They were disappointed. When they came in later they paid even higher prices. There are still a few who see the mirage of lower prices near at hand. With all the world predicting at least another year of war, I believe that it is safe to say that they too will buy at higher prices.

The owner has found that the introduction of hollow tile for enclosure walls has helped to off-set the increase in the price of building materials and labor, because it has reduced the cost of curtain walls and cut down the dead load to be carried by the structural steel. The specification of this economic material for large buildings now under way and to be started within the next few months indicates the general adoption of the enclosure block.

There has been a very marked increase in the use of smooth-face hollow tile for the outside walls of factories. This tile eliminates the cost of stucco, and presents a smooth surface which does not catch the soot and dirt which is ever present in factory districts. The large amount of factory construction due to war prosperity in every line has increased the demand for this material.

A considerable percentage of the production of hollow tile is now going to the farmer for use in various ways and there has been a steadily increasing demand for tile silos during the past year. The farmer is learning that permanent, fireproof construction costs no more than temporary, flimsy construction, in the long run.

The demonstrated economies that can be effected by the use of segmental tile for sewers has added very materially to the tonnage of hollow tile products throughout the country.

Increasing interest in the reduction of our absurdly large annual fire loss has been reflected by increased bookings for tile for walls and long span combination floors for residences, hospitals, schools and various institutional buildings.

INSTANTLY
The Hot Bath is Ready

One turn of the handle to the left and the

"GEYSER ELECTRIC WATER HEATER"

delivers hot water in the quantity desired. Economy is reduced to its simplest factors. Quantity and temperature under absolute control. Turn handle to neutral position, current consumption ceases. Turned to the right, cold water flows from the tap.

For the bath, the kitchen, the doctor's or dentist's office, hospitals, barber shops, hotels, cafes, bars—anywhere that hot water is desired at a moment's notice, free from the contamination of a piping system and absolutely sterile.

No trouble to attach. Sell the "Geyser" as a primary or auxiliary water heating system everywhere that current is available.

Supreme Court has decided we control the absolute right to the manufacturing of "Geyser" Electric Water Heater. Others take warning, as we will prosecute any infringing on same.

Write us today to send you full information.

FELDMAN MANUFACTURING CO., INC.

Times Building, 42nd St. and Broadway, NEW YORK

DEVELOPMENT OF ELECTRICITY IN CITY FOR LIGHT AND POWER

By ARTHUR WILLIAMS, General Commercial Manager, N. Y. Edison Co.

TWO things stand out beyond all others in any consideration of the development of electricity for light and power. The first is the improvement of the machinery of the electrical industry. This includes not only the machinery for the production of current but the machinery for its use. This improved generating machinery permits of economies by the central station company in the manufacture of current—better electrically operated apparatus permits of corresponding economies by the user.

It is these two factors—the one resulting in cheaper generation and the other in more efficient consumption, that make possible the second outstanding factor of the industry—the remarkable reduction in the cost of electric service to those who are served by the central station.

We are approaching the thirty-fifth anniversary of the beginning of the central station system of New York. In September, 1882, Thomas A. Edison, in the old converted warehouse on Pearl street, closed the switches, and sent the first current into the city's underground mains. The anniversary of this event together with a recent reduction in the electric rates in New York, serve to call attention to and emphasize the steady reduction of the cost of this universal commodity.

Thirty-five years ago electric current was sold at the rate of twenty cents per kilowatt hour, and the lamps then in use consumed four watts per candle power. From 1902 to 1905 lamps had been improved to a degree where 3.1 watts per candle were consumed and the rate had been reduced to fifteen cents. Through a series of rate reductions, coupled with a corresponding activity on the part of manufacturers of lamps, we have today a rate of only seven and a half cents, and a lamp which in its large sizes consumes but little more than half a watt per candle power of light. Even the smaller sizes operate at the remarkable efficiency of 1.25 watts per candle.

Less confusing than these terms of watts, and efficiencies and rates are the actual costs of a given degree of illumination. When electric light was first available in New York, current sufficient to provide ten thousand candle power of illumination for one hour cost $7.50; by 1905 this cost had been reduced to $3.12½. In May, 1914, the cost at the prevailing rate and with the best lamps was only $1.29, while today under the new rate the same light can be had for only fifty-four cents. This, in terms of dollars and cents, is the story of thirty-five years of progress in the electrical industry in New York.

It may be permissible at this time to refer briefly to the remarkable growth of our own company, for the growth of the company reflects not only the development of electricity in the city, but the growth of the city itself.

Beginning business in 1882 with a total customers' installation of only 1,284 lamps, the territory served was the little district within the confines of Wall, Spruce, Nassau and Ferry streets and the East River—about one square mile. The company now serves 183,000 customers, with a total of lamps numbering 6,781,000, and the territory embraces practically all of Manhattan and the Bronx. It was not until 1884 that the company entered the power business, with a few scattered motors on its lines.

Today the power load exceeds 484,100 horsepower, electrical energy being used in almost every line of the city's endeavor. We find it not only erecting giant buildings, but constructing our subways and boring the tunnels under the rivers; we find in New York one of the biggest factory districts in the world, and one of the cleanest, for practically every shop is run by electric motors.

ARTHUR WILLIAMS.

Not only is electricity used for power and light, but we find an ever increasing demand for energy to charge the storage batteries of electric vehicles—passenger cars for service in the city, and trucks for the delivery of goods in almost countless lines of trade. Nor should electricity as a medical agent be overlooked, for current is more and more becoming a valued assistant by our physicians and surgeons. Taking the total number of incandescent lamps, all the arc lights, the motor equipment, and the installation of electric heating, and the provision for battery charging, we find that The New York Edison Company today is supplying current, equivalent to that consumed by 14,825,819 fifty watt lamps.

In 1882 the little power plant in Pearl street, equipped with six generators of 125 horsepower each, provided hardly as much energy as almost any one of our large buildings requires today. The great waterside stations occupying two blocks on the riverfront equipped with the latest types of generating machinery provide electrical energy for a connected load exceeding a million horsepower.

HOLLOW METAL WINDOWS.

Builders Favor Product As Means of Stopping Spread of Fire.

By L. T. WIGHTMAN,
of S. H. Pomeroy Company.

IN the seeking for a greater measure of fire safety for buildings, the question of window protection has received its full measure of attention at the hands of architects, owners, contractors and manufacturers. Indeed, so intent have these investigators been upon the fire-resistant qualities of windows, that the importance of windows simply as windows has often been overlooked, and what may be called window efficiency frequently has been sacrificed.

A fire retardant window should, of course, have the maximum of fire retardant properties. But if it is to be also a good window—with all that that implies of comfort to the occupant and of economy to the owner—it must also be easily operated, must have good weathering qualities, must be durable to such an extent that it maintains its good qualities indefinitely with the minimum of up-keep cost. And it is always to be remembered that the quality of the windows is a large factor in the rentability of a building.

The evolution of the window toward fire resistant quality has been, briefly, thus: from wood frames and sash to frames and sash of so-called fireproofed wood; then to metal kalameined wood construction; then to frames and sash of hollow metal with wire glass. The fact of the matter is, however, that the first real fire retardant window was the hollow metal window, which, after many improvements, remains today the best window for all-around purposes where high efficiency both as a window and as fire-retardant is sought.

The pioneers in the introduction and manufacture of hollow metal windows were Pomeroy and Voightmann who, in Chicago in 1897, brought out the first window of that type. And though a multitude of manufacturers in various metal lines throughout the country have since placed hollow metal windows on the market, it is interesting to note that the S. H. Pomeroy Company, Inc., of New York City—an outgrowth of the original Pomeroy-Voigtmann association—is today the one concern specializing exclusively in the manufacture of hollow metal fire retardant windows.

One of the most recent developments in window protection is the increasing interest in street front fire safety, which has grown out of the growing realization of the conflagration risk as an extreme fire hazard. Until very recently, architects and owners have been content to install fire retardant windows on side and rear exposures only. This was due partly to an underestimate of the hazard of street front exposures, and partly to the fact that the market afforded no fire retardant windows that were architecturally suited for fronts.

It remained for Mr. Pomeroy again to do pioneer work in his specialty, by perfecting and introducing a heavy-gauge hollow metal window—in steel, copper or bronze as desired—that has every essential of the ideal street front window combined with the maximum of fire protective capacity. These newest windows are now being installed in increasing numbers—not alone for street fronts, but also for side and rear exposures where the utmost of window efficiency is sought.

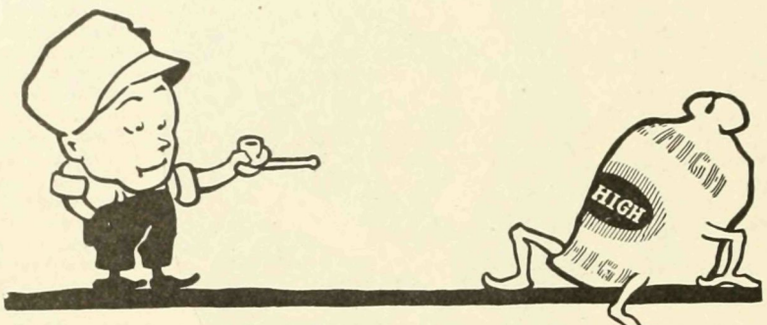
The Label Service on fire retardant windows, as rendered by the Underwriters' Laboratories, has not been an unmixed good. While it has had a most valuable effect in raising the standard of fire retardant efficiency and is a guarantee of fire resistant capacity, it entirely ignores the qualities which make a window a good or a poor window.

Purchasers ignorant of this fact buy windows with the approval of the Underwriters as indicated by the label thereon, in the belief that this guarantee covers every phase of window efficiency. And frequently a rude awakening follows, when the poor weathering qualities and the difficulty of manipulation and the heavy up-keep cost begin to manifest themselves.

The Underwriters' Label guarantees the fire resistant capacity of a window. But the only guarantee a purchaser can have as to the other essential qualities of a window are the experience and the record, the reputation and the integrity of the window manufacturer.

The weathering qualities of a window—its ability to exclude wind and cold and dust without sacrifice of easy operating qualities—affect not only the comfort and satisfaction of those who must live with that window; they have a vital effect upon the revenue returned by a building.

In the first place, the tenants must be kept comfortable if they are to be retained. And this cannot be done where poor windows are installed. Further, the escape of heat around poor windows and the admission of cold and drafts, makes heavy inroads on the coal bill. And all the expense involved in weatherstripping, adjusting and repairing poor windows, is so much withdrawn from the revenue of the building. And a window that must have its own shortcomings made good by weatherstripping, cannot be considered a good investment. For weatherstripping must be repeatedly renewed—a periodical expense to be charged against the poor window. While a slightly higher price paid for a better window at the outset will eliminate this later expense.



Now-Speaking of Concrete

No other building material is used so effectively in civic and rural improvements as concrete. It builds for permanence; it eliminates excessive upkeep expense.

Whether you plan to build a skyscraper, house, barn, silo, road or sidewalk, concrete can be efficiently used at a reasonable cost.

Great bridges, dams, tunnels, storage elevators, and sundry other structures are given maximum strength and long life through concrete.

Concrete structures have power to resist all destructive forces; they stand and serve indefinitely. Choose the most dependable materials for your concrete.

LEHIGH
CEMENT

CEMENT PRICES HAVE NOT ADVANCED IN PROPORTION TO CONDITIONS

By W. P. CORBETT, 1st Vice-Pres. Alsen's American Portland Cement Works

I AM a thorough believer in the propriety and wisdom of saying nothing rather than talk complainingly, and as a man in the cement business has so few opportunities of speaking optimistically I should prefer to abstain from any comments.

There is often more or less suspicion that when business men complain of poor times, they are expecting too much and are really doing as much business and obtaining as fair a profit as they are entitled to. But the fact remains in the cement industry that the periods of reasonable net profit have been few and far between, and while, at the present time, cement has advanced considerably over prices a year ago, yet the truth must be told, namely, that the price is inadequate under present conditions.

Coal, which is such an important factor in the manufacture of cement, is today, for prompt delivery, even when obtainable, at least 500 per cent. higher than a year ago. How much this may be blameable to manipulation in addition to uncontrollable causes or how long the present status can continue, does not benefit the present condition of affairs.

Steel, which is needed so extensively by cement plants, is up 100 per cent. and slow in delivery. Dynamite and other essentials in proportion. Cloth sacks are 100 per cent. higher today than when we last made a contract for them, and all manufacturers are losing heavily today on every cloth sack they send out, for they still foolishly pay for the handling, cleaning and sorting, in addition to selling them below their actual cost in the first place.

Labor has advanced, which seems eminently fair and reasonable, because labor should share in any prosperity and because labor needs more money to pay for the present high expense in living. But the trouble with labor is that it is inefficient, scarce and unwilling to work to an extent to earn fair wages. In other words, at higher prices labor is more independent, less interested, less diligent and worth less from a standpoint of quality of service than when formerly paid less. In saying this I mean no injustice to the exceptions, which only prove the rule.

Thus at the very time when, by working to a fuller capacity, the cement mills might do all they could to keep down the steadily increasing cost of production, they are handicapped by the deficiency and inefficiency of labor to add to their other difficulties.

If cement should advance as much as 50 cents per barrel this winter, which few anticipate will be the case, it would be considered by many who do not study the question unreasonably high. Yet copper, having advanced, say, 300 per cent., and with no indications of any reduction in the price for many months to come, and other products which might be cited, there is little if any comment created. I mention this to show the fact that the cement people, especially the Lehigh Valley mills who sell lower at factory than New York mills or Western mills, by frequently working with little or no profit, have simply encouraged the supposition that cement manufacturers should never make a reasonable profit and should be expected to act in a way injurious to their stockholders, and never expect the fair profit, much less good profit, that other industries enjoy and which is needed over certain periods to offset times of depression.

Yet in these times when so many manufacturers are reaping high profits, the cement people are running along in about the same old rut, and every now and then a 10-cent advance to inadequately take care of perhaps a greater increase in the cost is deemed sufficient for the good old General Cement Dobbin who is expected to pull an extra load of the human family and frisk a little when an extra slap is applied. To summarize:

Cement has not advanced sufficiently to care for the enormous increase in the cost of manufacture, in the East, at any rate, and the usual preposterous loss which the manufacturers permit by repurchasing cloth sacks at the same price at which they sell them and, in addition, going to heavy expense in repairing, cleaning and sorting them, is now a greater burden than ever before. To show a reasonable and proper profit, cement must, therefore, be advanced at least moderately, or the cost of production must be immediately reduced which, from all indications, could only be accomplished miraculously.

The recent election is disquieting and is carrying out decidedly the minority's desires of the "thinking men of this country." Eliminate the "solid South," which does not vote on the merits of a candidate, such munition workers as look only at their present wage scale, and the apparent majority of women who were misled by the specious cry "He kept us out of war," and the wishes of the better part of the country seem to have been frustrated. Thus the manufacturers of the country in general, including the cement manufacturers, must do everything in their power to await, in Congress, the wisdom—nay the necessity—of preparing against the fierce increase in competition which this country will inevitably meet at the close of the cataclysm in Europe. And such psychological talk as "A million soldiers by sundown" or other fatuous dreams, however sincerely believed, must give way rapidly to clear vision, far sightedness and no under-estimations of our commercial competitors.

In line with this we must have a real merchant marine and preparation to act as an insurance against war. Fortunately the Administration has of late been making a little headway in that direction. A man who would pay premiums year after year as an insurance against accident, theft, or death itself, to a company which was not able to make good when the time for payment arrived would be considered lacking in intelligence. To the same extent a country that is going to pay out annually millions of dollars for protection must see that sufficient is spent to insure a real and not an imaginary protection, or the money is gone to waste.

Consequently the temporary disappointments or discouragements which the election has caused to a majority of patriotic business men must not for a moment militate against a general effort to make the very best of conditions facing us and with all courage and all good nature and good sportsmanship work and plan for a lasting prosperity and do everything we can to bring the Administration to a further realization of preparedness in every sense of the word.

Growth of Cement Industry.

Quite a definite understanding of the widespread increase in the application and use of Portland cement may be obtained from the fact that while 8,482,000 barrels of this important material were manufactured in America in 1900, at the present time the annual output is approximately 100,000,000 barrels. According to the statistics that have recently been compiled for the cement industry, the United States leads all of the other countries in the world at the present time in the production of this well-known and widely used material. Portland cement is now manufactured in many different localities with raw materials that vary considerably according to the section of the country in which the article is made. Clay, limestone, marl and cement rock are the popular raw materials used in the manufacture of this product. The word "Portland" is merely a generic name and has practically no modern significance. There are now almost as many different brands of Portland cement as there are of flour or condensed milk.

LIME MARKET.

Prices Will Advance—Legislation Should Benefit Consumer.

By EDWARD B. PAGE, of Rockland & Rockport Lime Co.

THE lime conditions for the coming year will be hard to forecast; none of the manufacturers have any idea of what their costs or what their production will be, but in the face of this unsettled condition and realizing that in order to do business and be fair to the dealer and contractor, most manufacturers have agreed to maintain a price for six months from January 1, 1917. In taking this action we felt that it was necessary to establish a price so the builder could start his work without feeling that his prices were of no moment and that he would be at the mercy of the manufacturers, so in the case of lime most manufacturers are taking a gamble rather than to permit the building industry to go to smash.

Prices will be named that are in close keeping with conditions prevailing in October, November and December, 1916, and the manufacturers are taking a chance that things will be no worse. Not only the price of coal, but car shortage has played havoc with deliveries this year. For September and October, 1916, the supply of lime in New York and New England was far below the requirements. Costs advanced so fast that advances in prices were made over night. All coal contracts, if written at all, are being made at great advances for 1917 delivery and labor conditions do not seem to indicate much promise of improvement in 1917.

One of the hardest things we have had to contend with was the State road builders hiring our labor away from us, and I understand other manufacturers have had the same trouble. Car shortage, strikes, coal shortage, and what not has made the life of the lime manufacturer anything but a bed of roses, and when the strikes were over in New York in the building industry then all the lime makers were having their troubles with labor, and for the first time since I entered the trade I have known as many as six different brands of lime on one operation this autumn.

On January 1, 1917, the new government Lime Barrel Bill became effective with penalty. This is an ideal measure and will be of much value to the consumer as it requires that a large barrel shall contain 280 pounds of net lime, thus preventing the selling of barrels containing 230 to 250 pounds of lime as has been done in some localities.

Lime will sell in this country at a higher price than it has reached for a decade. The advances in 1916 have not been more than sufficient to absorb the additional coal costs, and I look to see the best grades of finishing limes selling to the consumer at about $2.50 per barrel, and about $2.25 for common lime. Masons' hydrate will probably reach $14 per ton and a possibility of finishing hydrate reaching above $16 per ton.

In the last five years the consumption of hydrate for road building as an admixture with cement has become universal, and the increase in the consumption of this material for soil has grown to enormous proportions. Lime seems to be coming back into its own as I do not feel that a cement mortar is complete without it. Tests made at Columbia, by Professor MacGreggor, have proven what the lime makers have always claimed, and the building trade knows, as do the chimney builders, that a cement lime mortar has no superior for laying brick, the largest chimney in the world being laid up with such a mortar.

It is hard to forecast what building conditions in New York will be in 1917, but New England shows much promise. Much money during war times has gone into New England and labor there has not even had time to spend it. Many are building small houses, so I look for continued prosperity in that section.

This is the first of a series of advertisements aimed to acquaint you with the quality of Edison Cement and the progressiveness of the Edison Organization.

FOR many years the Edison Portland Cement Company has maintained a leadership in the adoption of improved methods of Portland Cement Manufacture.

The *long kilns* now used in practically all Cement Plants, not only in this country but abroad as well, which insure uniform burning of the raw materials, were designed by Mr. Edison and first installed in the Edison Plant.

Likewise the *automatic weighing device,* making possible an accurately proportioned mixture of materials, was also conceived by Mr. Edison, and its use is universal.

The *giant rolls,* wonderful machines, which in a single operation reduce to small particles great blocks of stone weighing up to ten tons, are another of his achievements.

These inventions of Thomas A. Edison are typical of the man, and illustrate how thoroughly he has analyzed and measured the future of Portland Cement and its adaptation to the needs of mankind.

Traymore Hotel, Atlantic City, N. J.—Built with Edison Cement

The recent action of the American Society for Testing Materials in establishing a higher *standard of fineness* for Portland Cement is further proof of the wisdom of Mr. Edison, who for many years has been a most earnest advocate of finely ground cement.

Now, the addition of the giant tube mills, the largest ever installed in any Cement Plant, renders a *further perfecting* of the product.

These great tube mills, each containing as the grinding power over forty-five tons of steel balls, produce a very finely ground and uniform cement, without the loss of any of the impalpable powder which makes possible a *quick-hardening* Portland Cement—a cement which facilitates rapid construction, the demand of every builder.

The Edison Portland Cement Company is a part of the Edison Laboratories, the sole purpose of which is to place at your disposal products worthy of the name they bear.

Edison Portland Cement Company

Boston New York Philadelphia

Business Established 1832

The Lawrence Cement Company

No. 1 Broadway NEW YORK

SELLING AGENTS FOR

Dragon
PORTLAND CEMENT

IN SUCCESSFUL USE SINCE 1889

Book on Request Showing Uses and Testimonials

"Concrete for Permanence"

CAN IT BE MERE COINCIDENCE?

KNICKERBOCKER PORTLAND CEMENT

(Made by the Wet Process)

—has quickly won a pre-eminent place in the building world;

—has been used in many prominent construction projects.

Delivery by rail or water

We have our own dock at Hudson, N. Y.

KNICKERBOCKER PORTLAND CEMENT CO.

Main Office: 30 East 42nd St., New York

Plant at Hudson, N. Y.

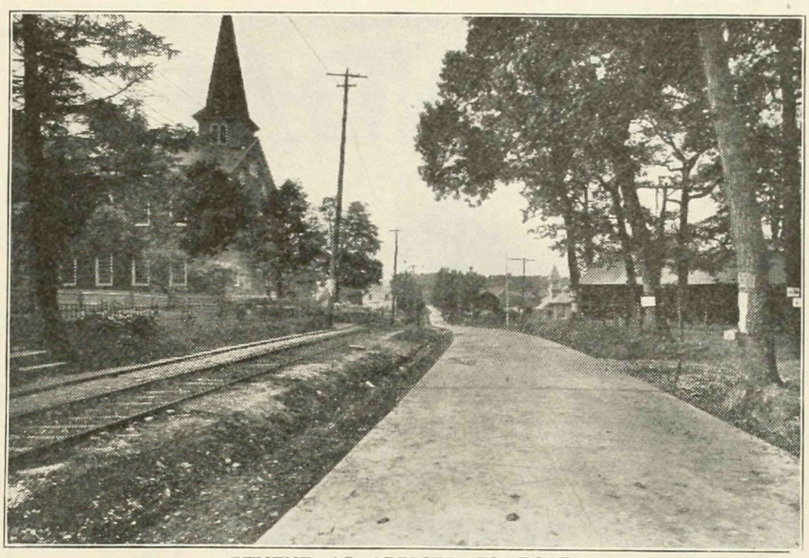
GROWING USE OF PORTLAND CEMENT IN AMERICA

"Concrete For Permanence" Is Becoming More and More Realized —90,000,000 Barrels Annually Used For Building Construction

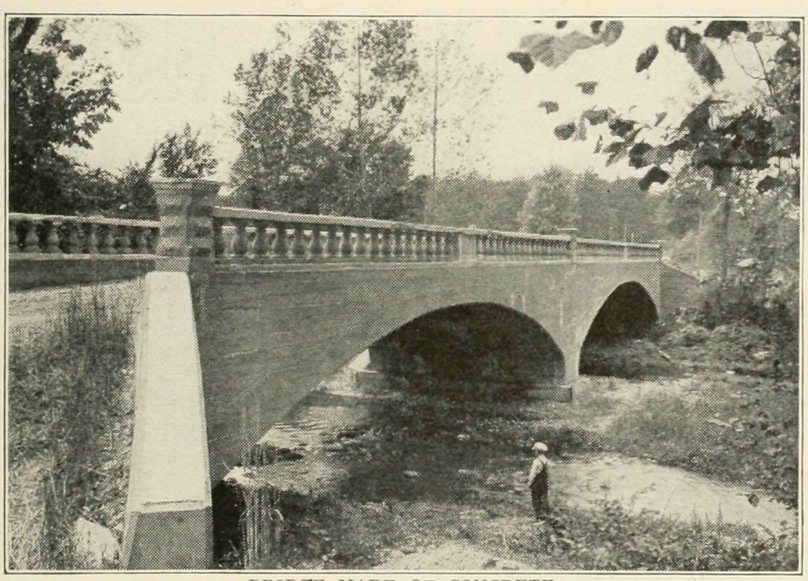
By H. C. CAMPBELL, Portland Cement Association

BUILDING for permanence, which means fire-safeness as well, is taking deep root in this country. The extent to which the idea of "Concrete for Permanence" is gaining is illustrated in this one fact, that whereas ten years ago approximately only one-fourth of the cement produced annually at that time went into building construction, today approximately one-half of the 90,000,000 barrel production is going into that channel of trade.

It has taken time and diligent work to get started even in proclaiming the economic truth contained in the slogan, "Concrete for Permanence" which cement manufacturers are using today with such telling effect. Some idea of the work which remains to be done in impressing upon those who build that impermanent construction is waste, may be learned from a comparison of fire loss per capita between the United States and Europe. This comparison shows that the per capita loss by fire in this country is $2.51 per year, as against only 33 cents per capita in the cities of six leading countries in Europe. The difference between these losses indicates the range of difference in the extent to which the idea of building for fire-safeness has taken hold in the two countries.



CEMENT AS APPLIED TO ROADS.



BRIDGE MADE OF CONCRETE.

As an interesting point, and one having some relation to the subject of permanent construction as to the type of material which may be used in rebuilding Europe immediately following the close of the war. The opinion is held by men qualified to speak—men who are familiar with the attitude of the European mind toward building for permanence—that although there will be great need of rapid construction, so deeply has the idea of concrete for permanence taken hold that the war itself will be unable to dislodge the idea.

In discussing this point, R. W. Lesley, an authority on the cement industry in this country, says that "to determine the class of this construction one must take the European viewpoint as to what constitutes permanent buildings. It is true that great expectations have been raised among the lumber interests—expectations that for the reconstruction of destroyed Europe $1,000,000,000 worth of lumber will be needed.

"This seems hardly possible when it is remembered that wood as an element of prime construction has been practically unknown in most of the central countries of Europe for very many years and that nearly everything has been built of brick and stone and stucco, and of the most permanent and fireproof character. That frame construction, wooden floors, wooden sidewalks and wooden bridges will take the place of the permanent construction that Europeans have known is not to be believed and this fact is especially emphasized in the action taken in the rebuilding of Messina after the terrible destruction of that city by earthquake.

"Assuming, therefore, that permanent construction will supersede the permanent construction destroyed by the war, the question is what form of permanent construction will be adopted in this rebuilding period. The question of immediate and yet permanent construction seems to narrow itself down to concrete, put in place by modern American methods and under the supervision of American engineers and possibly under the direction of American contractors."

Reverting to the undoubted increase in permanent construction in the United States, this increase is apparent in the rebuilding of roads, in the construction of factories and warehouses, grain elevators, railroad and other coal pockets or bins, and in bridges, both small and monumental. The Tunkhannock viaduct on the Delaware & Lackawanna Railway, the longest concrete viaduct in the world, is one illustration of the growing use of cement in construction.

Owners of real estate having tracts to be improved, large and small, are realizing more clearly than ever that permanence and fire-safeness means a greater degree of certainty in profits. The use of concrete certainly means a lessened expense in upkeep, and even where vacant ground is improved for the purpose of effecting a sale, buyers are more inclined than in times past to demand a greater degree of assured permanence in the structures which they buy.

Knowledge of how best to make and use concrete is fast accumulating. Cement manufacturers are taking a direct and personal interest in how the ultimate consumer uses their product, upon the well established theory that one success leads to another, and successes in the use of concrete as the one best type of material, are innumerable.

(Continued on Page 152.)

DRIVEWAY OF CONCRETE.

BROOKLYN BRIDGE BRAND

ROSENDALE NATURAL CEMENT

HAS BEEN USED IN MANY OF THE

MOST PROMINENT STRUCTURES

IN GREATER NEW YORK AND VICINITY

The following are only a few of the structures in which Rosendale Natural Cement has been specified and used to the entire satisfaction of the Architects, Builders and Owners, viz.:

New York and Brooklyn Bridge, 250,000 Barrels
New York Croton Aqueduct, 265,000 Barrels
Washington Bridge, Harlem River

Williamsbridge Reservoir
New York Clearing House
The Hotel Manhattan
Museum Natural History
New Netherlands Hotel
Navarro Apartments
Webb Academy Home, Bronx
St. Luke's Hospital
Hunt's Point Trunk Sewer
Wanamaker's New Building
Broadway Chambers

Park Row Syndicate Building
Manhattan Life Ins. Co. Building
Brooklyn Post Office
Long Island Storage Warehouse
Eagle Warehouse & Storage Co.
Terrace Wall & Water Tower
Mechanics & Traders Bank
Somers Bros.' Building
Greene Ave. Trunk Sewer
Old Williamsburg Trunk Sewer
Times Building, 42nd St., City

SPECIAL CLAIMS OF MERIT

Constant in Volume, Great Spreading Quality, Free from Grit, Does Not Work Short, Sets Under Water, Uniform, Makes a Perfect Joint, Dark Rich Brown Color. Has stood the test of 90 years on all kinds of Construction.

True Economy with Safety in the use of this NATURAL Cement: Compression Strength, One part Cement and Three Parts Sand, in 3 months 2,000 pounds per square inch.

COMPARISON OF PRICES

Present Retail Price Portland Cement	$2.35 per Barrel
Present Retail Price Common Lime	2.10 per Barrel
Present Retail Price Rosendale Natural Cement .	1.30 per Barrel

MANUFACTURERS

Consolidated Rosendale Cement Co.

WM. C. MORTON, Sales Agent

50 Church Street - - - - - - - - - - - NEW YORK, N. Y.

For sale by all Masons' Material Dealers.

INCREASED USE OF CEMENT IN BUILDING FIELD

Low Initial Cost, Permanence and Practicability Some Reasons For Its Growing Popularity—Dull Seasons Eliminated

By W. S. MALLORY, President Edison Portland Cement Co.

IT is safe to predict that there will be a considerable increase in the use of cement during the coming season in building operations. Last year there were used five million barrels of cement in the City of New York alone; in 1915 ten and three quarter million barrels were used in the State of New York, and 1916 showed a three per cent increase over these figures. In 1916 the building industry reached a volume of $1,356,989,397. Commenting on the amount of building construction during 1916, the F. W. Dodge Company, in its annual table of statistics, points out that the new construction in the year 1916 has not supplied the demand. Of industrial building construction there was much, and concrete was used to a great extent, but residential construction was below par, and should show an increase partly to supply demand, and as investment. Residential buildings are turning more and more to concrete, because it has many advantages which are being recognized, and will obtain, where other types will be impossible on account of prohibitive prices, maintenance, depreciation and lack of permanence. Modern hotel and apartment construction has recognized concrete in the matter of floor and other construction, which will naturally expand to residences, particularly apartments. Industrial building construction may be said to have adopted concrete.

One of the big factors for an increased use of cement is doing away with the dull period, affecting not only builders and their employes, but all concomitant industries. When the first ice crystal appeared, the alarm was sounded, and until the warming rays of the spring sun appeared, building and other concrete construction was at a standstill. It was really a great step towards national economic progress when the cement manufacturer, the engineer and contractor got together and eliminated this. Now concrete buildings can be erected in winter as well as in summer, with equally good results. It took some time to overcome the deep-rooted belief that structures put up in winter were not good buildings.

Labor has been mentioned as one of the prohibitive factors in connection with protable construction at present, and it is a powerful factor to reckon with. This is offset largely in concrete construction on account of the fact that more mechanical devices are used for mixing, handling and distributing concrete than in any other material of construction, requiring little skilled labor. Where brick is placed in the hod, or wheelbarrow, and carried or taken up in an elevator, concrete is mixed, discharged, hoisted and spouted to place almost without human agency. This, too, has been a factor in the almost incredible speed with which industrial buildings have been erected during the past year, which must attune the investor favorably, as early returns are within vision. Data covering materials of construction entering into all types of buildings for the past two years show an interesting increase in the use of cement, and it can be safely said that it is one item which is specified for all. The advantages shown on small scale readily lead to an increase, and the expression "I may use it" soon becomes the "I will and must use it." While the above statements reflect largely on the builders, there are many advantages in connection with concrete construction which the investor, industrial, hotel, apartment house or residence, cannot readily overlook. These advantages are summed up as follows: Fireproofness, waterproofness, verminproofness, sanitary qualities, light available, load-carrying capacity, permanence, adaptability, speed of construction, low heating charge, low initial cost, fire protection value.

Fireproofness.—It has been demonstrated by numerous fire tests that heat penetrates concrete slowly, and that even in great conflagrations concrete is practically impervious to fire. This finds ready proof in the Baltimore and San Francisco conflagrations, where concrete was tested most rigorously. The most satisfactory proofs probably lie in the fact that in the reconstruction of both of these cities, concrete was the advocated material of construction. In this connection considerable interest attaches to the report of the committee on the Edison fire, which visited the plant of Thomas A. Edison, Inc., West Orange, N. J., which states "considering the extraordinary conditions surrounding this fire, the behavior of the concrete buildings was highly satisfactory and constitutes an excellent demonstration of the merits of concrete as a fire-resisting building material." To Mr. Edison himself, the fire was a great and impressive exhibition of the value of reinforced concrete construction, and he ordered that all future factory construction be built of this material.

The best criterion, however, is the practice of insurance underwriters. The most scientific underwriters, as exemplified by the Mutual Companies of New England, have stated that they will quote lower rates on concrete industrial buildings than on any other type of structure.

Waterproofness.—In fires, water is a serious source of damage to the contents of a building. The monolith concrete floor, provided with a small curb and scuppers, obviates this. It also makes for increased cleanliness, for the floor can be washed down with a hose without doing damage. The New York Board of Fire Underwriters are accepting concrete floors with a granolithic finish, placed on two inches of rich cinder concrete as waterproof and give the same rating as other types of floors which have three or five-ply tar and felt waterproofing laid between the structural part of the floor and the floor surface.

Verminproofness.—Mice, rats, cockroaches and other pests are excluded automatically from a concrete building, as there is no place for them to hide, and this property is very valuable to owners, where goods contained are subject to inroads of vermin.

Sanitary Qualities.—Besides being immune to vermin, concrete buildings are sanitary from the standpoint of the absence of dry rot and dampness. They have proved hygienic because cement is a lime product and naturally sanitary. It has also increased efficiency, due to ameliorated health and working conditions.

Light Available.—The normal fenestration for a reinforced concrete factory is 50 per cent, and in many cases as high as 85 per cent, compared to 20 or 30 per cent in other types of construction. This not only increases efficiency, but materially reduces lighting charges, and allows of extra ventilation.

Load Carrying Capacity.—Much data are available showing load tests of concrete construction, and this is universally accorded as one of the qualities of concrete construction. The investor will be glad to learn that it increases in strength with age, and that buildings designed for a given number of stories, have easily taken the loading of an additional floor without increasing columns, after a lapse of time.

Permanence.—Mr. Edison in discussing ancient buildings declared that wood rots, stone chips and crumbles, brick disintegrates, but concrete is his choice for indestructibility and permanence. The poets may speak of anthems sung in stone and fanes in marble, but the modern investor is of a practical and economic mind. Even at that the Romans used concrete, the dome of the Pantheon is of concrete, as are also the foundations under the palaces on Palatine Hill in Rome, still in excellent condition. No wonder Horace sang of building monuments more lasting than brass. The cloacae or sewers seen in Italy and France (ancient Gaul) also reveal the permanence of concrete. Technical investigation has conceded this beyond peradventure.

The investor finds in this a profitable source, for it materially decreases maintenance and depreciation charges, which are prime considerations.

Adaptability.—Concrete, on account of its plastic nature, readily lends itself to unusual conditions of design and construction, and the architect cannot complain of its plastic mood not lending itself to motif. Many engineering enterprises must have failed but for concrete. In building construction it has proved itself, particularly in foundation work. No one, even if only superficially acquainted with concrete, can deny it its aptitude.

Speed of Construction.—The speed records made in the last two years alone in concrete construction in the industrial field prove this. To one gifted with a little imagination it was almost Aladdinlike. Data show that where more speed was required to insure quick construction, concrete was chosen. The individual cases are too many to enumerate, but several are on record where buildings were turned over after forty-eight working days, complete in all detail. This, too, is of importance for the investor.

Low Heating Charge.—It has been found in reinforced concrete buildings that it costs less money to maintain an even temperature than with most other types of construction. It may take some time to heat a concrete building, but after it has been done the loss of heat by radiation is slow. The low conductivity of heat is responsible for this. This is of value in any heating, ventilating or cooling system.

Low Initial Cost.—It has been shown by comparison that concrete construction is low in initial cost, being from 10 to 20 or even 25 per cent lower than other types of fireproofed buildings. Compared to non-fireproof buildings, concrete shows a difference of 30, 40 and even 50 per cent. This means that a prospective builder can obtain a fireproof structure, if he uses reinforced concrete, at a cost but little in excess of the non-fireproof, or at best, slow burning type of construction.

Fire Protection Value.—Even if an owner insures his building and contents he is not fully protected against fire, for it will not protect him against the income accruing from the building during the time it is perforce unoccupied. Neither will it protect him against the loss of data, valuable papers, models, machinery and devices difficult to replicate on short notice. Add to this disorganization, loss of business, and it is readily inferred why concrete construction is the best.

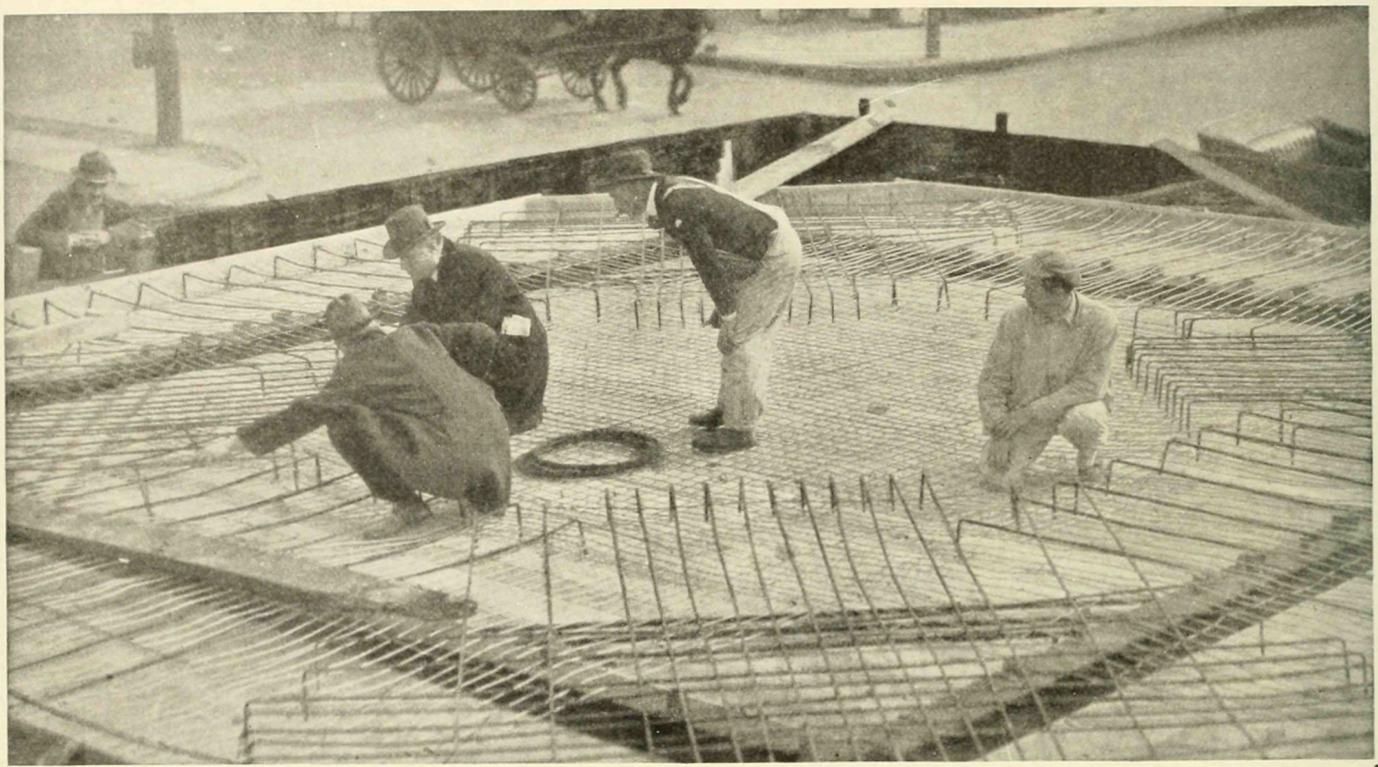
Considering all these factors and the many objections which militate against ordinary types of construction at this time, it is not saying too much when we predict an increased use of cement during the current year. There may be outward apathy, but the fundamentals of economic activity are pervading this country, through the influence of observation in Europe. We too are beginning to realize that most dull seasons are only a state of mind.

Clinton Fireproofing System

Long Span Type

R. S. CHEW, Patentee

ALBERT OLIVER & SON, Inc. 101 Park Avenue, N. Y.



Showing placing of reinforcing mesh and bars on a panel twenty feet square. The slab is built of cinder concrete 6½ inches in thickness. Officially tested for the City of New York by James S. MacGregor of Columbia University under the supervision of the Superintendents of Buildings of all boroughs of Greater New York. Loaded with pig iron placed in isolated circles. Final load nine hundred and sixty pounds per square foot.

Tested for the purpose of offering economical and high class construction to the tax-ridden property owners of the City of New York.

Clinton Electrically Welded Wire Two Way Reinforcement Was used in this construction.

Octagonal Reinforced Floor Company

Grand Central Terminal

New York

REINFORCED CONCRETE, ITS GROWTH, DURING PAST QUARTER CENTURY

By ALBERT OLIVER, of Albert Oliver & Sons, Inc.

REINFORCED concrete has become such a well-known term and so many structures, small and great, have been reared during the past quarter of a century in which it has played an important part that we seem to have arrived at a point where the naming of reinforced concrete has become almost as familiar as the naming of brick-work. After an association of about a quarter of a century with this branch of the building industry, it is only natural in discussing the matter that I should hark backward to the time when the industry was young, when engineers theorized and builders took chances, and I suppose if the engineer had not theorized and the builder taken chances, that today we should be building in the same old way with brick, stone and wood, and reinforced concrete would still be one of the things to be fought out and worked out.

As I contemplate what has been accomplished, and particularly what is now being accomplished in this admirable construction, I experience many a moment of mirth when I think of what some of the poor fellows did in the early stages, the mistakes they made, the problems they claimed to have solved, the certainty that some one material in which they were all together likely to be financially interested, was the best material and the only material, the swelling out of the chests of chesty people who had the slogan of John B. Day and Jim Murtrie, "We are the people," backed off the boards by a thousand per cent.

The above deals with the engineer, the salesman and the "booster," but behind all of these were the people who put up actual money, built factories, assembled machinery, spent large sums of money on patents and went at the business of marketing their goods with truly energetic American spirit. Some of the concerns fell by the wayside. Some of the ideas were not practical and certain types of reinforcing and methods of placing have long since been junked.

It is not a peculiar happening, it is a perfectly natural one, that types of reinforcing designed along the simplest lines came into the field at an early stage and have never been crowded out and are today, when the art of reinforcing concrete is well understood, still the leading factors in the field of reinforcing. Expanded metal was the earliest mesh reinforcing which secured broad use. On floor spans up to 8'0" this material has always performed in the best manner; in retaining walls, culverts and in any number of uses in connection with concrete, those acquainted with the history of the construction must accord one of the first places to expanded metal. Looking away backward to the times when I was closely associated with the companies marketing this material I am well able to testify to the splendid results secured from its proper use.

Offered for use at about the time expanded metal was first making headway as a reinforcing for floors and roofs came the Roebling system of flat bars, twisted at the ends, hooked over the I beams and forming a support for concrete slabs. Attached to this construction was generally placed the Roebling wire lath, this forming a centering for the concrete mixture. An enormous amount of this construction was employed. It was wrong in theory and in practice when compared with other systems, but it was pushed with all the vim of the Roebling interests and it had their tremendous influence behind it, the result being that for upwards of fifteen years this type of reinforcing was probably the most generally used of any used throughout the United States. This system has passed along and will not be revived.

Another reinforcing used in general for what is known as "long span construction" and known as the "Columbian system of reinforcing," secured wide use in the early days. The Columbian bar rolled with one or more wings extending from both sides presented first class features as a reinforcing member excepting when placed in floors where owing to the thinness of the slab, it was impossible to prevent cracks from appearing on the upper surface of the floor directly along the lines of the reinforcing. This bar has passed as a factor in the reinforcing line. Excepting for the twisted bar, the Columbian was about the first of what is known as "deformed reinforcing." Twisted bar was early in the field. It is still holding its own and owing to its simplicity and economy will undoubtedly continue for all time to be viewed favorably by the engineer, who, in the final analysis, is the man to say whether or not a material of this character shall continue to be used. It will be useless to recite here the names of the many deformed reinforcings now in use. Suffice it to say that all of them have their adherents and engineers will accept any of those now in general use without pinning the buyer down to one particular make, because after all it is just about a name. They are all good or they would not be in use.

Early Systems.

About eighteen years ago, the Clinton Wire Cloth Co., recognizing the growth of concrete construction, placed on the market the Clinton electrically welded wire. It was claimed for this material that it possesses certain engineering and structural advantages over other mesh materials furnished in sheets and necessitating lapped ends. One of the early claims made was that a straight line is the strongest line and that a continuous bond throughout the length or breadth of the structure formed the ideal knitting together of the concrete construction in which the welded wire was used as a reinforcing. The claim has always been made that the transverse wires welded at intervals along the tension or carrying members formed the best bond against displacement of the reinforcing in the concrete and gave the ideal distribution of stresses sidewise throughout the slab. Engineers have always recognized the superiority of drawn steel wire (which in its very manufacture is a tested material) over ordinary rolled sections of steel, and it is undoubtedly owing to the features named above that during the past ten or twelve years wire mesh reinforcing delivered in rolls has rapidly displaced other forms of reinforcing and especially where used in either stone or cinder concrete slabs from 6'0" to 12'0" between bearings.

Later Materials.

Some years later than the Clinton entrance into this field came the excellent material known as "Triangle mesh," manufactured by the American Steel & Wire Co. This material, with many engineering features in its favor, with the weight of one of the greatest corporations in the world helping to send it along and distributed under the supervision of one of the best sales departments in the world, has obtained wide use and may be put down as one of the materials that will stay in the market and that must be reckoned with by any competitor in the field of reinforcing.

Another system embodying the continuous reinforcing features secured early use. This was known as the "Metropolitan system" and consisted of gypsum and shavings, reinforced by wires strung continuously over the points of support, drawn taut and deflected at the center points between supports. This form of placing the reinforcing had the effect of throwing the wires in tension. The system obtained considerable patronage and is still in use. Several other manufacturers of mesh reinforcing have, at one time or other, offered their materials in the market with indifferent success. The reinforcing rods, bars, expanded metal and wire meshes above named hold the market now and will continue to hold it for the reason that they are simple in construction and effective in use, all of them largely eliminate waste, each material named is efficient and in nine cases out of ten it can safely be said that salesmanship is the deciding factor in which shall be used in any structure.

PAINTS AND VARNISH.

Market Trend During 1917 Uncertain, Though Prices Will Be Maintained.

By ARTHUR DAVIS, President, Standard Varnish Works.

IN spite of the difficulties and perplexities which have faced the varnish and paint industries during the past year, the demand for varnish, enamel, paint and kindred specialties increased very materially over the previous year. These industries, like others in this country, have been confronted for two years with unusual conditions brought about by the European conflict.

The manufacturer of varnish and paint has been confronted with extremely high raw material markets, and during such an upward swing in values it was impossible for manufacturers and others to adjust their selling prices to accord with the markets. Efficient help has been scarce, the munitions plants, steel mills and other "war brides" having had the pick of good labor. Some raw materials have been very scarce and hardly procurable; but notwithstanding these acute conditions, the volume of business in varnish and paint has been very large during the year just closing.

The manufacturers of finishing materials are usually wideawake and constantly working to improve the standard of their products in all the essential qualities demanded by the most exacting architects, and they welcome at all times any suggestions or ideas for improvement which may come to them from that source.

Few new varnish or paint specialties have been developed during the past twelve months, manufacturers having been too busy with the complex situation and in taking care of their customers' wants to work out many new problems.

The call for high grade enamel made in the rubbed effect is increasing very fast, and the demand for oil stains and the better grades of all finishing materials throughout the entire country is becoming very popular.

The use for waterproofing and damp resisting paints and protective coatings is becoming more widely appreciated every day and there is no doubt that in a short period these materials will be used all over the country in much larger quantities as the necessity for doing so is better understood.

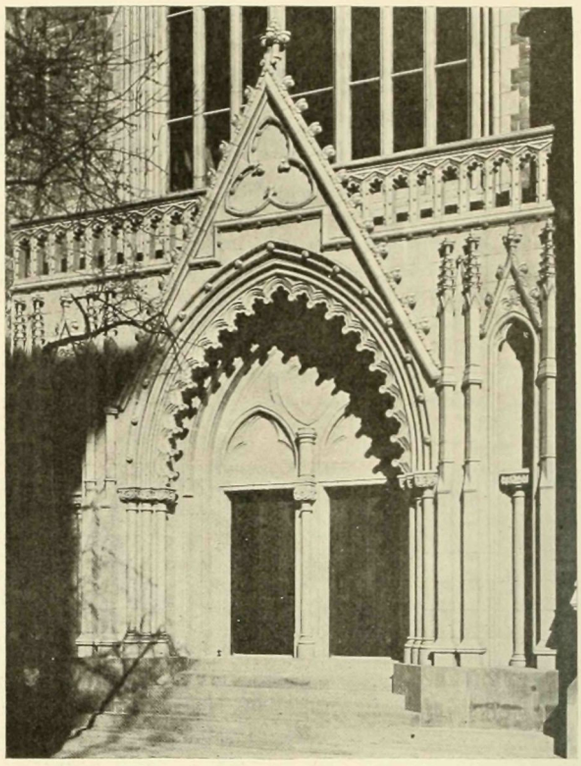
The "Clean-up" and "Paint-up" campaigns that have been carried on throughout the country have accomplished a great deal to increase the consumption of varnish and paint and too much credit cannot be given to this valuable work.

It is rather uncertain at the present time to say what the year 1917 has in store for the varnish and paint industries. Prices will be higher than those prevailing in 1916, owing to the continually increasing cost of oils, gums, colors, pigments and almost every article entering into the composition of varnish and paint.

The demand for finishing material will much depend upon building operations. There is no doubt, however, that the united States will continue to be prosperous after the war ends, and while there probably will be some temporary reaction due to new problems occurring after the war terminates, there is little doubt that the industrial and financial resources of this country will be needed in Europe for some time after the war ceases. And if our country does enjoy continued prosperity, the varnish and paint trade will certainly share in it.

INTERIOR OF CIRCLE BUILDING, COLUMBUS CIRCLE, NEW YORK
James C. Green, Architect

Piers, roof arches, windows and balcony of Atlantic Terra Cotta, in color similar to Tennessee marble and with a bushhammered surface.



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Bannister & Schell, Architects
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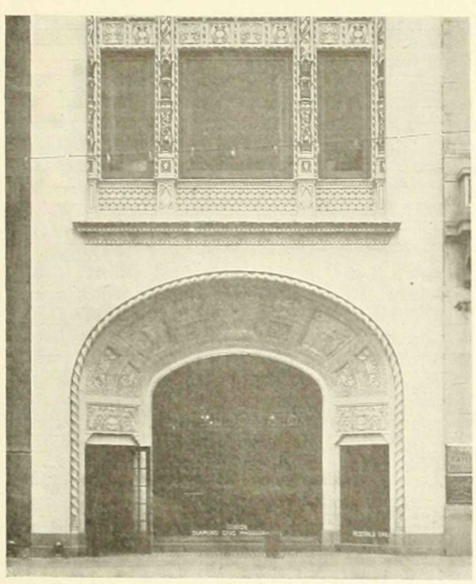

EDISON SHOP, 473 FIFTH AVENUE, NEW YORK
Shape & Bready, Architects

Entirely of Atlantic Terra Cotta; in granite color for the entrance and side piers, cream and gold for the windows and polychrome for the frieze.

Atlantic Terra Cotta Company

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WOOLWORTH BUILDING, NEW YORK
Cass Gilbert, Architect

Entirely of Atlantic Terra Cotta for fifty-two stories on all elevations, in matt cream, polychrome and gold.

ARCHITECTURAL TERRA COTTA NOW IN FAVOR

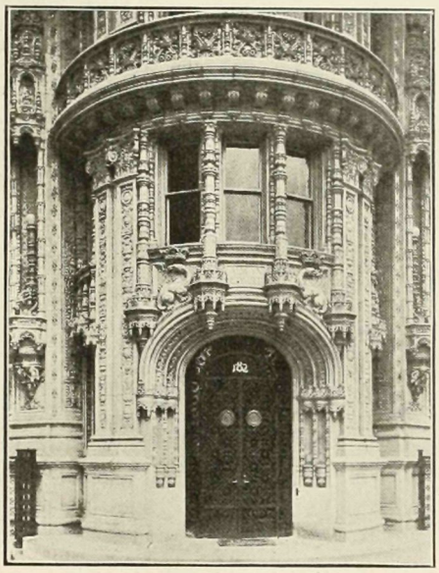
As Applied Today the Product Tends to Make a "City Beautiful" as Well as Spelling "Permanence"

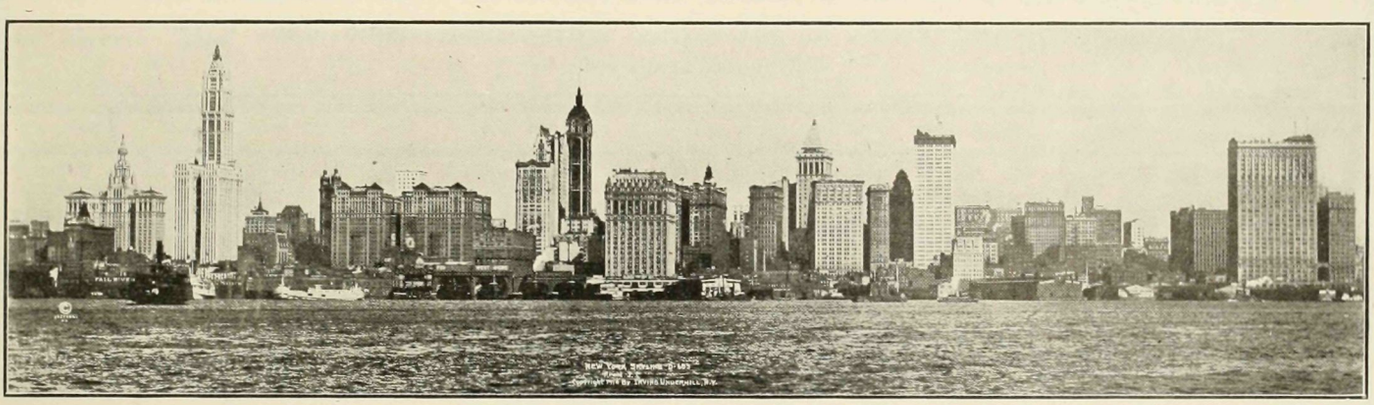
By EDWARD H. PUTNAM, Atlantic Terra Cotta Co.

F knowledge of architectural terra cotta was as general as its use it would probably be as well known as brick. Architects have been familiar with it since 1878, the year it was first manufactured in this country, but there are a few real estate operators who still consider architectural terra cotta "a peculiar red ornamental piece stuck somewhere on a building." Nothing could be further from the truth.

Even to those who are familiar with terra cotta the statement that more than half of the visible building material in New York's downtown skyline is terra cotta will come as a surprise, but the fact remains. Look at the illustration for a moment. In the Municipal Building, at the extreme left, the terra cotta is confined to the modeled arch over Chambers street; the entire visible part of the Woolworth Building is terra cotta, most of the Hudson Terminal Buildings, part of the City Investment Building and the Singer Tower, practically all of the West Street Building, a large part of the United States Express and the Adams Express Buildings, and a large part of the Whitehall Building. Almost all of the other large buildings, particularly those that are light in color, contain architectural terra cotta to a considerable extent.

In the central part of the town the proportion of terra cotta is not so great for new buildings are comparatively rare, but wherever there is a new building standing out above its ancient neighbors, architectural terra cotta will be found.





In the upper part of New York, in the apartment house district, the first place goes to brick but the proportion of terra cotta is large for practically every modern apartment building uses architectural terra cotta for the trim, windows, friezes, belt courses and entablature. There is also a rapidly growing use of terra cotta for entrance and base of the higher type of apartments.

The reasons for this really remarkable use of terra cotta are not hard to find. Economy is one, but the wide adaptability of architectural terra cotta is the predominant reason. In no other permanent, fireproof building material is modeled ornament so easily and inexpensively obtained, and no other material possesses so wide a range of color. Practically any color is possible in terra cotta from soft grays to the brightest faience—even lustrous gold—and the colors may be used alone or in combination. In a supplementary way terra cotta may be used with other materials, harmonizing or contrasting in color and texture with smooth or polished limestone, marble and even gran-

From a terra cotta point of view the Woolworth Building is particularly interesting, because it would have been commercially impossible in another material, and because the design took full advantage of the possiblities of architectural terra cotta in modeled ornament and color. The first three stories are of marble and the other fifty-two are entirely of terra cotta on all elevations. The basic color is a dull, variable cream white, but nine other colors are used. The colors are not used so much to add their own value; generally they occur in the backgrounds of modeled ornament, and by strengthening the natural shaddows give the detail greater relief. Conversely, in some instances bright colors are used to relieve too dark a shadow; for example, bright gold occurs in the detail under the twenty-seventh story canopy and it shines brilliantly when it catches the horizontal rays of the sun.

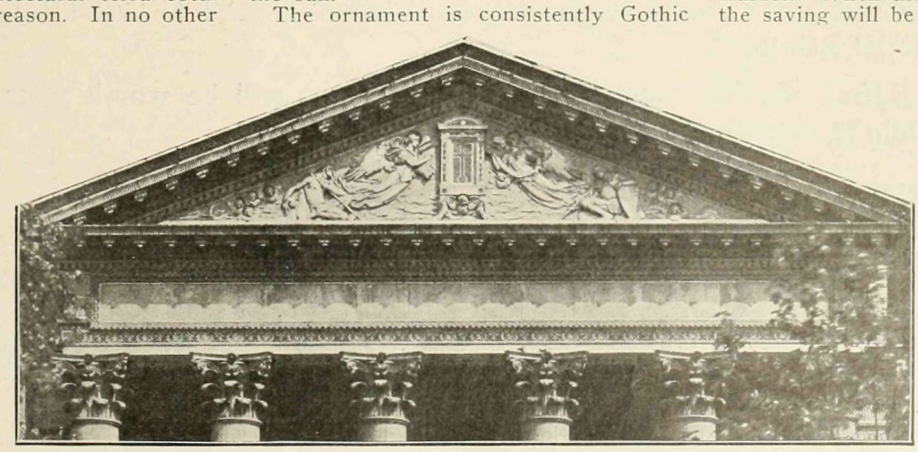
The ornament is consistently Gothic in character and very intricate. The cost would have been out of all reason for any material in which each piece had to be cut separately. In terra cotta one model was made by hand for each piece different in size and shape, moulds were taken from the models and the required number of pieces pressed from these moulds. As a great many exactly similar pieces were required the original cost of the model was divided. The same method applies to plain ashlar pieces and the economy is easily apparent.

It should not be inferred that architectural terra cotta can be used to advantage on the skyscraper only. It is as appropriately used, and with equal economy, on the small, one story store or for the trim of a small building.

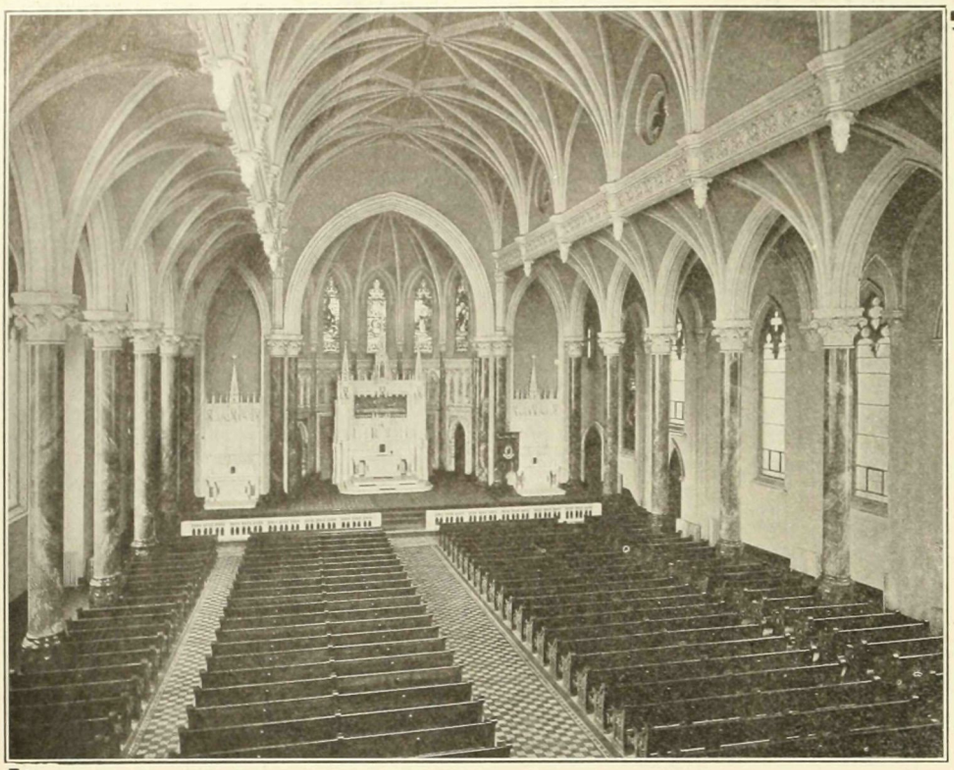
It is an evident fact that a store to be successful should have an attractive front and one that will stand out prominently among its neighbors. This can be done very easily with one of the white or cream terra cotta glazes, or a light gray. And a terra cotta facade never becomes permanently dirty. Dust may gather on a glazed surface but it is never absorbed, and a simple cleaning down with soap and water will restore the original freshness of the terra cotta. This is particularly important when eye-level work is of terra cotta.

The fireproof quality of architectural terra cotta is one of its greatest advantages. There are many instances on record where buildings erected of terra cotta have been completely gutted in a general conflagration, but the outside comes through without injury beyond smoke stains that would be removed easily.

There is no unit by which the cost of architectural terra cotta can be measured; too many factors enter into a determination of the price, the character of the modeling, the color or colors, and the texture. Prices are based on an estimate of the whole building taken from the architect's drawings and specifications. In general the price will be from 20 per cent to 50 per cent less than stone and correspondingly less than marble. When the modeling is intricate the saving will be even greater. In the case of very intricate modeling the cost of terra cotta might be no greater than one-tenth the cost of stone.



And in architectural terra cotta you have a material that is fireproof, weatherproof, permanent and susceptible of modeling in any form and treatment in color or colors in combination. It is the most adaptable building material available, and the mos teconomical.



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COMPOSITION FLOORING FAVORED FOR MANY KINDS OF BUILDINGS

By R. E. BURNSIDE, President, Asbestolith Mfg. Co.

ALTHOUGH composition flooring has been in use in this country for between fifteen and twenty years, and for a much longer time in Germany, and is familiar to many of the best informed architects, as well as owners of up-to-date buildings and private residences, the fact that it is not more generally known has been a frequent source of surprise to the writer. Certainly it would seem of interest and benefit to the prospective builder of a public or private structure to have some authentic information as to a floor that has proved by the test of years of actual use that it has durable, fire resisting and sanitary qualities of a high order, lends itself in considerable degree to decorative effects and—all things considered—fully justifies its first cost.

The fact that it is in more general use, in proportion to population, in the Western States than in the East, proves once more the assertion that the West knows a good thing when it sees it, and is quick to adopt it, whereas we Eastern folks are content to put up with our horse cars, Belgian block pavements and Rip Van Winkle methods of construction long after they have been thrown into the scrap heap by our more progressive Western neighbors.

The principal ingredients of practically all composition floors are magnesium chloride salts, diluted to form a liquid for mixing, and magnesite. To these are added other ingredients to give color, cohesion and greater durability, as well as resiliency, these varying according to the formulas of the manufacturers. The best of these ingredients were formerly those imported from Germany and Greece; but since the war American manufacturers have taken advantage of the scarcity and high prices of the imported products and are now turning out materials which compete successfully as to quality with the foreign products. Care must of course be exercised by the manufacturer of flooring to see that he gets the best, and he must test his material to see that it is uniform, so that his mixture when laid will set evenly and present an evenly wearing surface.

There are two methods of laying composition floors, each of which has its advocates. In both of them the material is mixed with the liquid until it becomes plastic and is laid in that condition, being spread over the surface similarly to cement, and finished with a trowel. It is usually carried up on the wall about six inches, with a rounded surface, or cove, at the floor line, thus doing away with cracks or sharp corners where dust or filth might accumulate. It is also carried further up on the wall to form a wainscot, where desired. It may be laid on wood or cement under-floors and backing, and either in new buildings or in old ones where it is desired to renew the floors and make them sightly and sanitary.

The two methods referred to are the single layer and the double layer methods of construction. In the former the material is laid in one layer of monolithic material throughout the entire thickness, usually of one-half inch, while in the latter a bottom coat of porous material is first put down, this not being intended as a finish or composed of the same ingredients as the top coat; the bottom coat being usually ¼ in. to ⅜ in. thick and the top coat taking up the remainder, about ¼ in. to ⅛ in. It is claimed for this method that the bottom coat forms a "cushion" and adds to the resiliency, or springiness under foot, of the finished floor.

Those who lay the single layer floor claim, on the other hand, that with the proper ingredients floors are made with sufficient resiliency to satisfy all demands, and in addition have a much longer life than the double layer floor through their greater thickness and monolithic character, and also are in much less danger of showing surface cracks through the disintegration of an under coat of porous materials and inferior ingredients. The writer does not hesitate to say, after an experience of more than sixteen years in laying composition flooring, that he is fully convinced that the single layer method is the correct one from the standpoint of durability and, in the end, of economy.

SLIPPING HAZARD.

Legislation Passed Designed to Better Existing Conditions.

By H. WEAVER MOWERY, of American Abrasive Metals Co.

THE effects of the nation-wide agitation for greater safety to life and limb in public and industrial activities are becoming evident. Records being compiled under official supervision show that, in our industries alone, each year, 40,000 men are killed, 2,000,000 wounded and more than $600,000,000 wasted. Definite figures as to casualties other than industrial are not yet available, but it is known they are infinitely greater. The stupendous economic loss from these sources is inexcusable because it is in large measure needless.

The success of consistent "Safety First" endeavors in the industrial field is being duplicated in those realms of particular interest to readers of the Record and Guide. More than sixty per cent. of all industrial casualties are preventable. Probably a larger proportion of public casualties are also preventable.

One of the greatest industrial organizations of this country shows an accident decrease of 43 per cent. per unit of employees for an eight year period. In three of those years they expended for safety $2,003,712.29, or an average of about $668,000 a year. The estimate gross saving in casualty expense for the same period was $4,775,692.64, or approximately $1,600,000 per annum. Assuming that the expenditures for safety were maintained at the same rate during the eight years, the total would be about $5,330,000. The saving in casualty expense would represent a yield of thirty per cent. on the investment, to say nothing of the many indirect economic and lessened suffering.

Of particular interest to those holding New York City real estate are the results from the investigation of street and sidewalk hazards by a committee appointed by the Mayor. The writer of this article at the request of the American Museum of Safety prepared a report which was presented to the Mayor's Safety Committee. In that report of existant conditions attention was called to the many vicious hazards encountered in our sidewalks. Unguarded areaways, sidewalk cellar entrances, coal hole covers that were slippery, broken or otherwise unsafe, and while coal was being unloaded were usually without guards of any sort to prevent persons stepping into them, were some of the particularly prolific hazards to which attention was called. A concentrated effort, by the city, to eliminate these and similar hazards due to unsafe material conditions, though vigorously opposed by some whose pocketbooks were touched, has resulted in reducing the yearly average of about seventy fatal sidewalk casualties in Manhattan to less than forty.

One of the most prolific sources of casualty has been discovered in slippery tread surfaces. In New York State about 2,000 workmen are injured yearly from this cause. It is impossible to tell how many persons in our business buildings and engaged in activities other than industrial or manufacturing are injured through slipping; but the casualty liability insurance companies consider that the most prolific source of their troubles. They should know because they pay the claims.

But the recent legislation seeks to prevent conditions which permit slipping accidents to occur. The New York City Building Code, which went into effect March 14, 1916, in Section 153, entitled "Interior Stairs," requires that "the treads and landings shall be constructed and maintained in such manner as to prevent persons from slipping thereon." The New York State Labor Law in Sec. 79, A-3, embodies the same requirement for all factory buildings over one story in height. Pennsylvania has adopted similar requirements. The specification of the National Board of Fire Underwriters require all fire door saddles to be of some approved anti-slip material. Many other authorities in similar manner have given recognition to the slipping hazard and the necesity for avoiding this danger.

Every surface of cast iron or steel on which people walk or work constitutes a hazard. Mud, oil, soapy water or concentrated wear make such surfaces dangerously slippery. Elevator saddles, trench plates, gutter covers, stair treads, floor plates and kindred forms usually are the most dangerous forms of the slipping hazard. Well defined efforts are being made by architects, engineers and others charged with supervision of building construction and repair to avoid the slipping hazard wherever possible.

PARQUET FLOORS.

Moderate Cost of Construction Has Widened Field of Use.

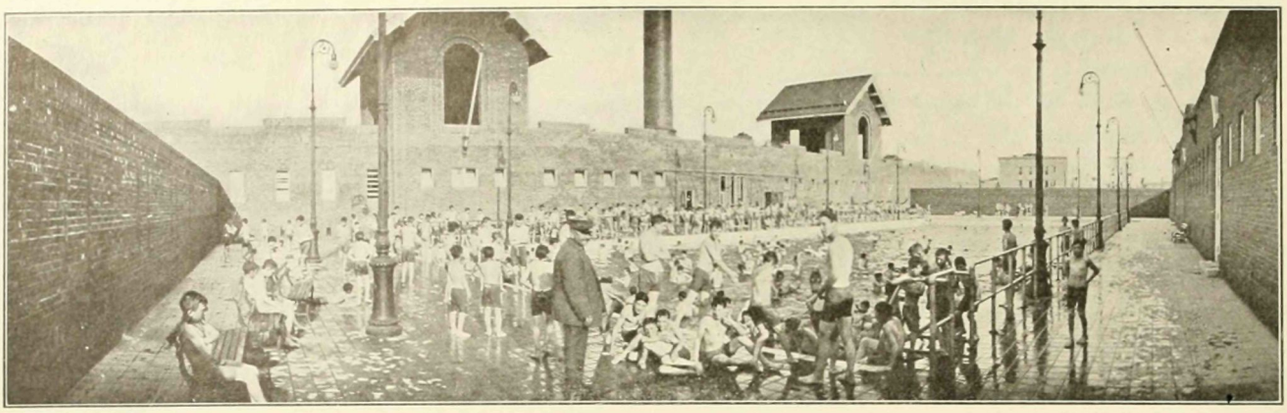
A FEW years ago the installation of inlaid parquet, or wood mosaic floors, was thought practical only for use in dwellings of the highest class or for limited areas in buildings of a public or semi-public nature. This was due to the cost of the flooring. During recent years, however, floors of this character have become universally used in apartment houses and in the homes for families of moderate means. Manufacturing costs as well as the expense of installation have been greatly reduced in recent years and thus these floors have come within the realm of those practically in all walks of life.

Parquet floors are now obtainable in a wide assortment of woods as well as designs, and, when properly laid, add much to the appearance of a room and become a feature of no little decorative importance. When properly selected and cured woods are used, and when the materials are installed according to the best modern practice, these floors become an artistic and permanent asset to the building. The life of these floors is dependent, of course, upon the care they receive, which should be the same as that accorded a fine piece of furniture. Provided parquet floors are not abused, they should last well and give good service for a long period of years.

Of the materials generally used in the construction of parquet floors, quartered white oak is by all means the most popular, although other woods are often used. Quartered white oak is tough and hard and is susceptible of a variety of color treatments. This wood also takes an excellent finish which lasts well under careful usage.

These floors are usually laid in geometrical designs composed of short strips of wood and finished with an ornamental border. For the borders many other kinds of woods are used: birch, red oak, ash, mahogany, ebony and practically any other wood that is sufficiently hard and durable and which offers a color contrast. The borders tend to break up the monotony of the floor area and if well designed are an attractive feature.

The maintenance of parquet floors is a simple matter that requires little more than good common sense and a slight expenditure of energy. They should never be scrubbed in the manner that other wood floors are cleaned, but should be wiped up first with a mop that has been dampened with a light floor oil and then polished with a prepared floor wax, either liquid or solid. Water in any quantity is fatal to a parquet floor.



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PROPER LAYING OF OAK FLOORING

Information Given on How to Prepare for the Work—Laying, Nailing and Scraping Explained

By W. L. CLAFFEY

TODAY, by improved machinery, equipment and quantity manufacture, the cost of making flooring has been so reduced that beautiful oak floors are now within reach of everyone. Oak flooring is generally laid by a profession commonly known as floor layers, who specialize in the laying of hardwood floors. These floor layers may be divided into two classes—good workmen and a class that are careless. The expert floor layer obtains his reputation by the high class and perfect work that he turns out. It is practically his only asset in the game. Many large and prosperous floor laying concerns have reached their prosperous condition chiefly through conscientious workmanship in their earlier days. The floor layer that is careless in his work will never succeed. It is not necessary to be an expert to produce a good floor laying job, but it is essential that considerable care should be exercised and all the details from the start to the finish should be carefully studied before the floor laying work is taken in hand.

Before starting to lay oak flooring, the stock should be examined to ascertain if it has absorbed any moisture while at the lumber yard, on the wagon, or at the job, as usually during rainy weather oak flooring will absorb considerable moisture, mostly at the ends—thereby causing it to swell as much as one-sixteenth of an inch. If this condition is not discovered before the floor is laid, unsightly crevices will appear in the floor. The sub-floor, as well as the plaster work, should be thoroughly dry before starting to lay oak floors. If in winter the rooms should have a temperature of about 70 degrees to insure the best results and the oak flooring bundles should be in the rooms at least ten days to thoroughly dry out in case the stock has been subjected to any moisture, before the main work is started.

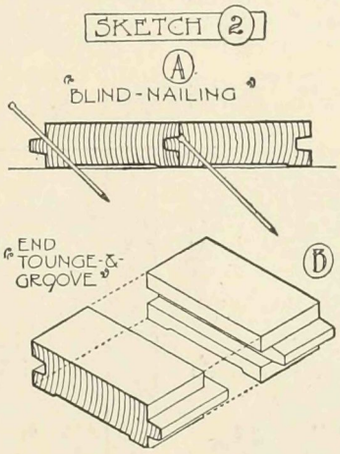
Oak flooring leaves the mill in perfect physical condition, but is often abused by improper handling before reaching the job. There are many lumber yards and contractors that almost treat oak flooring like rough lumber. This is a mistake. The sub-floor should be thoroughly swept, and it is well to use a damp-proof paper, and where sound-proof results are desired, a heavy deadening felt is recommended.

The sub-floor should be of serviceable wood, but not less than ⅞-inch thick, dressed one side to an even thickness. Sub-floors should be nailed securely to the joists, but not driven too tight together so as to permit it to swell, then bulging; four-inch to six-inch strips are preferred widths for sub-floors.

When starting with the first oak flooring strip it is well to leave at least ⅜ inch for expansion space between the first strip and the base-board, and likewise at the other end of the room, as there is more or less expansion and contraction in all kiln-dried oak flooring. Oak flooring should always be laid at an angle to the sub-floor and after laying and nailing three or four pieces, use a short piece of hardwood 2-inch by 4-inch placed against the tongue and drive it up with a heavy hammer.

The nailing of oak flooring is very important. All tongued and grooved oak flooring should be blind-nailed. The best flooring made can be spoiled by the use of improper nails. The steel cut variety is recommended for 13/16-inch stock—use 8-penny nails every sixteen inches; for ⅜-inch flooring, use 3-penny wire finishing nails every ten inches. If even better results are desired the nails can be driven closer.

The floor layer should use discretion in regard to certain strips that do not blend in color with the majority of strips.

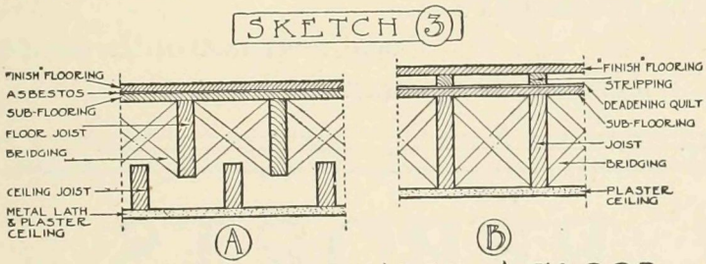


OAK FLOORING

A few badly discolored pieces in a room will mar the appearance greatly. Badly discolored pieces should always be set aside and used in closets and other out-of-the-way places. Where there is a wide variation in color it is good policy to separate the pieces before they are nailed down. This insures a more regular run of color and blends better together than if scattered throughout all the rooms. Every floor layer should watch this feature of his work closely, as it is the appearance of the floor after laid that counts.

Oak floors with some care should last a life time. The wood itself practically is never permitted to wear—that is, in the better grades that are used in homes. It is the wax or varnish finish that wears, which is always replenished. Honest and careful workmanship on the part of the floor layer spells success. A good job of floor laying is the best of advertising, while a poor job gets nothing but kicks.

Scraping oak floors is always done in the better grades, or in all homes where people dwell. In order to get the best results for a nicely finished surface it is best to scrape it. This scraping process can be done by the ordinary scrapers, such as used by cabinet makers, or by one of the many types or power or hand machines that are generally used by contractors and carpenters. Always scrape lengthwise of the wood and not across the grain. A floor properly scraped looks very smooth, but it should be thoroughly gone over with No. 1½ sandpaper to obtain the best results in finishing. After this the floor should be swept clean and the dust removed with a soft cloth. The floor is now ready for the filler which should be put on as soon as possible after the laying work is finished, as the filler fills up the pores of the wood and keeps it from shrinking.



TWO WAYS TO DEADEN A FLOOR

PLASTERING.

Conditions Satisfactory Despite Threatened Strikes and Lockouts.

By J. M. KRAFFT.

LABOR conditions in the plastering trade, in spite of a number of threatened strikes and lockouts during the year just closing have been unusually satisfactory. The danger of serious strikes has been practically removed by arbitrations and trade agreements, while under old conditions the only ultimate method of settling a dispute between employer and employee was a resort to force.

Such agreements invariably serve to bring both parties closer, to create such trade legislation that will work for the good of both interests and to place the responsibility for the settlement of disputes, infractions of rules by either party, or other grievances, upon the trade board composed of an equal number of employers and journeymen. Wages in all principal cities range from 70 cents to 75 cents per hour, with a five and a half day week, except in Boston and Philadelphia, where a five-day week prevails. The short week in these two Eastern cities was adopted at a time when work was scarce and with the object of distributing wages to a larger number of men.

If the scarcity of mechanics which manifested itself during the early autumn of 1916 continues, the five and one-half day week will undoubtedly be restored during 1917. The problem of supplying plasterers' laborers in sufficient numbers to properly supply plasterers during times of prosperity such as we are about to experience, will shortly claim the attention of the employers. If the embargo on immigration by European countries continues, then this must undoubtedly be accomplished by a wholesale recruiting of the less skilled laborers now used for digging subways and foundations into the ranks of the more specialized plasterers' and masons' laborers.

Material prices are climbing skyward in leaps and bounds and the only reliable prediction as to their limits is that they will keep on going up. Finishing lime in 300-pound barrels sold early in 1916 for $1.75 to $1.80, and is now up to $2.10. Patent plaster neat is $2.00 to $3.00 per ton higher, with hydrated lime and Keenes cement as close seconds.

An analysis of the situation shows that rather than being due to an unusual domestic demand the causes for these sudden increases are to be found in scarcity of common labor, lack of vessels to carry rock from quarries to mill, and as a consequence high water freight rates. The railroad car shortage also adds its contribution to an already perplexing situation. It is almost impossible to obtain a sufficient amount of material for a job of any magnitude, unless orders are placed one to two months in advance.

There is reasonable basis for the belief that we are upon the threshold of a prosperous building season. A return to the prosperity prior to 1907 is predicated first, upon the regulation of our foreign commerce which we seem to be totally unable to handle along with our own, and second, upon a campaign of preparedness by our railroads to relieve the sluggish movement of "the blood of the nation through their strikes." It may readily be seen that the first remedy is not easy of accomplishment, as it would seem to involve constitutional rights.

Europe is buying upon compulsion, which has the effect that the buyer is reckless as to the price he pays. The result is that we pay the same price for our goods as the foreign buyer. It is time that the immense volume of business, both domestic and foreign, gives employment to our workingmen, and thus the first step towards permanent prosperity has been accomplished.

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MODERN STACKS.

Proper Proportion Necessary to Obtain the Best Results.

By H. F. BALLARD, of A. Custodis Chimney Cons. Co.

ONE of the most important features of an up-to-date steam plant is a properly proportioned modern stack. Such a stack not only adds to the architectural appearance of the plant, but is a paramount factor in its efficiency.

On account of the various conditions which affect the draft requirements in any particular steam plant, an expert should be called upon to determine the size of the stack, which, when correctly designed, is undoubtedly the best and most economical means of producing draft.

There are several different types of stacks, but only two are of sufficient importance to be given consideration here. These are the radial brick and the reinforced concrete.

The reinforced concrete stack is ordinarily so designed that the walls are not stable from their own weight. These walls are reinforced with steel bars which extend into the foundation and thereby anchor the walls to the foundation. It is evident that the stability is entirely dependent upon the adhesion or bond between the concrete and the steel, and if this should become weakened the structure will be in danger of falling.

It has been found that the hot flue gases when constantly in contact with concrete slowly destroy its strength and completely break the bond with the steel. When this occurs the stack then becomes a menace to neighboring life and property.

These difficulties with the reinforced concrete stack may be overcome to a certain extent by lining the stack with fire brick for its entire height, thereby protecting the concrete walls from the direct action of the hot flue gases, and by making the walls of the stack heavy enough to be stable by their own weight instead of being dependent upon the uncertain bond between the concrete and steel.

The radial brick stack is without doubt the best stack on the market today. It is so designed that it is dependent upon its weight alone to resist the enormous wind pressure to which a stack may be subjected. It is built of perforated radial bricks of various sizes which are manufactured to fit the circle of the chimney. These radial bricks are made from a refractory clay especially selected for its heat-resisting qualities and high crushing strength when burned. Each brick is perforated with a series of holes which facilitate a thorough and even burning of the clay. The perforated radial bricks are laid up with a cement-lime mortar which penetrates the perforations in the bricks and forms a very strong joint. The various sizes of bricks permit of a more thorough bonding of the wall than is possible in any other kind of brickwork. The walls are further reinforced with concealed steel bands.

The perforations in the bricks form a dead air space in the walls of the stack which prevent radiation and thereby retains the heat of the flue gases inside the stack and increases the efficiency.

The radial bricks are manufactured in various colors and the stacks can easily be designed to conform to the architectural features of the other units of the plant. Various fancy designs or even firm names can easily be built into the stack by the use of various colored brick, thereby furnishing an absolutely permanent advertising feature.

The radial brick stack is very rapidly growing in favor for use in office and hotel buildings, as it takes up a very limited space and does not radiate heat. It is also used extensively in connection with chemical works to carry acid fumes to the upper air currents. It is particularly adapted for this purpose when constructed with special acid resisting brick and mortar.

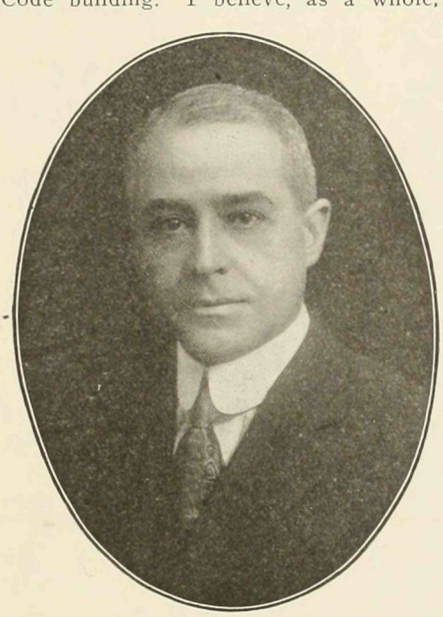
FIREPROOFING IN 1916.

New Building Code Has Done Much to Make Structures Safe.

By G. EDWARD ESCHER, of White Fireproofing Co.

PERHAPS the most notable development in the building industry during the past year has been the trying out of the new Building Code which was passed during 1915 after a dozen years or so of unsuccessful endeavor to form a code which could be enacted into law. In all former cases, an effort was made to pass the code as a whole, while in the last and sucessful attempt the code was revised section by section, and each section was separately adopted by the Board of Aldermen.

The workings of the provisions of the Code covering the subject of reinforced concrete and fireproofing were watched with particular interest, as it was around these subjects that most of the storm of opposition broke in former attempts at Code building. I believe, as a whole,



C. EDWARD ESCHER.

the new Code has proved satisfactory and gives very slight ground for criticism, although, of course, there are many different opinions as to how certain matters might have been handled.

In framing the reinforced concrete and fireproofing provisions of the new Code, the Building Committee of the Board of Aldermen wisely used the extensive data, collected during the past twenty years or so by the Bureau of Buildings as a basis for the new requirements, and under the able guidance of its technical adviser the committee has achieved results which have been universally commended. The result is that fireproofing has now been standardized very much as brick work, steel work, or any other constituent part of a building.

During the past year fireproof construction has become even more strongly entrenched in the minds of the public as a necessity in any building making pretence to being called first class. The tendency has been to construct many buildings fireproof, even though the law did not require that they should be so constructed. This has been notably the case in residence construction, practically all fine modern residences being constructed of fireproof materials.

Not only has all legislation during the decade enlarged the scope of fireproof construction and correspondingly lessened the number and kind of buildings which might be constructed non-fireproof, but the Board of Fire Underwriters, as well as the large money loaning institutions, have given this subject particular study and have used their influence to encourage fireproof construction wherever possible.

Among all the different fireproof materials now on the market—all of which are non-combustible, but not necessarily desirable on this account for use as fireproofing materials in buildings—it is interesting to note that cinder concrete continues to grow in favor. Indeed it would hardly be an exaggeration to say that it is now in universal use in all steel skeleton buildings. Not only is it an economical material to use, but its light weight, its sound-proof qualities, its adaptability to the various conditions arising on almost every building, and its remarkable fireproof properties, now so well recognized, are responsible for its great popularity.

As wood continues to advance in cost the substitution of fire resisting materials will continue to increase automatically without working any hardship on the building public, while the benefit to the city at large cannot possibly be overestimated.

PIPE COVERING.

Is to Steam Pipes What Clothing Is to the Human Body.

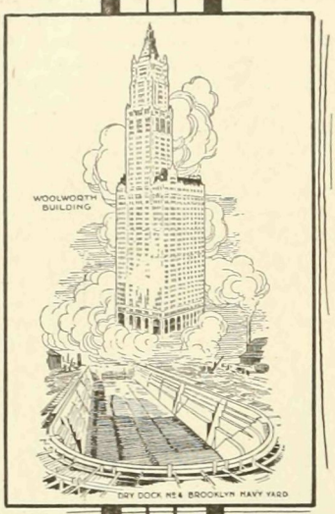
By ROBERT A. KEASBEY, of Robert A. Keasbey Co.

WHILE almost everyone today has a greater or less "bowing acquaintance" with the art of covering pipes, boilers and other heat and cold carrying vessels, yet many fail to realize, the cardinal advantages of insulating against loss. Pipe covering is to the pipes what a blanket is to the human being. The thickness of the covering and the number of blankets depend upon the coldness of the atmosphere. The comparison differs, however, in that the covering of steam pipes is an investing proposition. The investment is profitable and may be fairly considered under two types of investment—immediate return or permanency of material. A happy combination is immediate return and permanency of material.

The type of material which a person may be justified in using depends upon the temperature and location of the vessel to be covered. One buying pipe covering should employ good, practical common sense or procure the services of someone skilled in the art to determine which type of covering may be best adapted for his particular type of work.

Insulation may be divided largely into two classes—the insulation of heat and the insulation of cold. Of the former type of covering, it may be properly claimed that any thickness and type of covering within reason will pay for itself many times before its virtue is exhausted. In other words, a piece of asbestos paper wrapped around a pipe would pay for its cost and a one-inch thickness of 85 per cent. Magnesia would bring returns equal to that thickness and the price. Not so with the cold insulation. This type of covering must be of a proper quality and thickness to effectively insulate the pipe or vessel, or moisture or frost will begin to appear on the outside of the covering and in a greater or less period of time the whole line of pipe covering or the insulation on a vessel will begin to break down by reason of the forming of moisture or frost and the work will be entirely destroyed, doubtless long before it has earned its first cost.

The best known heat and cold insulation in the minds of the average person is asbestos—in certain cases its value rises almost to a superstition. Asbestos in itself is not inherently a non-conductor and is only comparatively so in proportion to the air chambers which happen to be lodged or are formed within its volume. Asbestos is a very valuable commodity in the industrial world, in that it forms a binder with other commodities which possess the non-conducting properties necessary. It is also made up into various mechanical forms for numerous mechanical types of work. Probably the best known steam pipe and boiler covering is that which may be designated as 85 per cent. carbonate of magnesia covering, meaning that it has a carbonate of magnesia base with about 15 per cent. asbestos fibre, the fibre intermixed with the carbonate of magnesia to toughen and strengthen the carbonate of magnesia. Other materials of lesser cost and efficiency are used, each one having its particular place in the trade.



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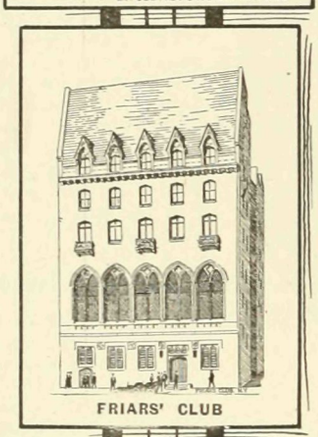
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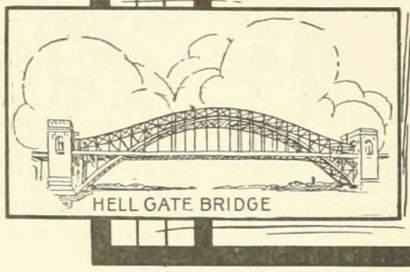
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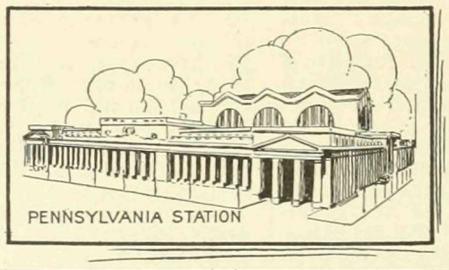

PENNSYLVANIA STATION

USE OF AUTOMATIC SPRINKLERS LOOKED UPON AS A NECESSITY

By EDWARD P. BOONE, New York Fire Exchange

IT is about thirty-seven years ago since the first complete system of automatic sprinklers was installed in this city for the purpose of extinguishing a fire originating within the building. This system was looked upon by those of the public who happened to see or hear of it as more or less novel, rather a foolish idea, probably the outcome of a crank's work, for who was there who would invest his or somebody else's money to decorate the ceiling of a building with hideous piping and much more hideous rosettes or sprinklers, filled with water that were likely to let go at any minute, probably at night when there was nobody in the building and deluge your stock irreparably, all to help put out a fire? It was indeed a hard problem but the problem has been met.

The growth of sprinkler equipments in this city and nearby localities was exceedingly slow because no one seemed to take very much interest in them. The property owner and the real estate agent objected to the cost and to the appearance—responsibility for loss in event of leakage—the insuance companies, with the exception of a few, rather frowned on them, due to lack of experience, consequently the reductions in fire insurance rates were slight and but little inducement was offered for their installation.

Little by little and largely due to the untiring efforts of certain inventors and manufacturers aided by insurance companies engineers, the present day automatic sprinkler was devised and the method of installation planned.

At the first, complete installations were confined mostly to manufacturing plants, department stores and warehouses, with now and then a loft building, but the action of the insurance companies based upon their experience with sprinklers, in granting liberal reductions in insurance rates, coupled with that of the State and Municipal authorities in compelling the installation of sprinklers in buildings of certain types of construction and occupancy and the publicity given to them by the press, has resulted in equipments being planned and installed in practically every new building erected in this city within the last five years for manufacturing and mercantile purposes. In addition thereto a number of existing buildings have been equipped so that at present there are 2,300 sprinklered buildings in Greater New York, with about 100 in various stages of installation. Today it is rare for a building to be planned for any purpose without consideration being given to the question of sprinkler equipment along with the general mechanical equipment.

A careful study of the record of fires that have occurred in sprinklered buildings in this city, will convince even the most skeptical that the automatic sprinkler has proven its worth and has come to stay. With a record of 90 per cent. of the fires controlled or extinguished there is little left to say.

A study of the real estate conditions will give one an idea of the value of the automatic sprinkler from the investment standpoint, for it is one of the principal factors in the renting of a building, especially of the loft type.

Among the important questions to be considered after the design and probable occupancy of the building has been settled is that of heating. It should be definitely determined that all portions of the building will be heated to about forty degrees Fahrenheit during the winter. Unfortunately water will freeze at thirty-two degrees Fahrenheit, even when in pipes, a condition that some of those planning equipments must realize if a wet pipe system of sprinklers is under consideration.

The latter system is preferable for the following reasons: It costs less to install and to maintain and results in a slightly greater reduction in insurance rates. By way of illustration: A complete wet pipe system of 1,000 sprinklers, including tanks and alarm service will cost about $15,000, maintenance cost about $300 per annum, insurance reduction approximately sixty to seventy-five per cent., depending upon grading of equipment. The same equipment, but dry pipe system, including tanks and alarm service will cost about $16,000, maintenance cost about $450 per annum, insurance reduction approximately fifty to sixty per cent., depending upon grading of equipment. It may also be said that the dry pipe system, being under the control of one or more automatic valves under constantly maintained air pressure of forty pounds in the pipe system is somewhat complicated and with its auxiliary attachments calls for much more care than the wet system.

Much depends upon a satisfactory supply, one giving a heavy pressure being most desired. Unfortunately, the city water supply, due to lack of pressure, especially in lower Manhattan, is not available as a supply for sprinklers in buildings exceeding forty feet in height. Consequently, tanks and pumps must be installed as supplies, resulting in an increase of approximately forty per cent. in the installation. In some cases this makes the installation impossible for the reason that the building is not able to withstand the weight of tanks, or the cost where value of buildings and contents is moderately low and when foundations must be increased, is not warranted.

It is hoped the city authorities, appreciating the value of the automatic sprinkler in controlling and extinguishing fires and the fact that every equipment installed reduces the possibility of conflagration, will take steps which will result in the pressure in the domestic service mains in lower Manhattan being increased to about seventy-five pounds, thereby making city water available for sprinklers in buildings up to one hundred feet in height with approximately the same reduction in insurance rates, as now granted for sprinklers having tank supplies.

A great deal depends upon the installation itself, it should be rugged and strictly in accordance with the rules of the Fire Underwriters. No shoddy work should be permitted. Repairs should be left to installing companies. No one would think of taking his watch for repairs to a blacksmith, why then place your property in jeopardy by having some unskilled concern attempt to repair sprinkler equipment?

After the equipment is installed and placed in commission comes the most important of all, that of maintenance. To invest money in an automatic sprinkler equipment and then expect it to take care of itself is unreasonable, it is not expected of the elevator equipment, why then of the sprinkler equipment? It must be properly maintained, methodically and thoroughly inspected by some responsible party if it is to be relied upon, and if it is both properly installed and maintained it will in all probability control, if not extinguish any fire that may occur within the premises, unless building construction or occupancy conditions be very unusual.

Finally, as a means of fire escape, a life saver, no better means has yet been devised than the automatic sprinkler, for a building so equipped where hundreds are employed or gather in their business pursuits has a real life-saving equipment. And why? Because the water is discharged on and in the vicinity of the fire, thereby restoring confidence to the confused brain and giving time for restoration and orderly egress from building, and while in operation it sounds an alarm that in most cases brings aid in a very few minutes.

WATERPROOFING.

Some Practical Hints Given to Those Interested in Subject.

By ARCHIBALD C. REID, of Toch Brothers.

THE early history of waterproofing is shrouded in mystery, for the reason that there is little or no literature on the subject. The first successful waterproofers were the Romans, and they were also the first successful manufacturers of cement. Waterproofing in those days consisted primarily of building foundation walls so thick that it was difficult for water to penetrate them.

The remarkable development of the Portland cement industry during the past few decades, owing to the increasing popularity of reinforced concrete buildings, stucco residences and other types of Portland cement construction, has only been paralleled by the facility with which suitable materials have been provided for waterproofing and protecting such construction and to relieve its monotonous tone; artistic effect being desired almost as much as stability and permanency.

While some maintain that waterproofing is unnecessary in Portland cement construction, and rely solely upon proper workmanship to produce watertight structures, the futility of such dependence is evidenced by the phenomenal sale of compounds and coatings to prevent water or moisture from penetrating new structures as well as leaky foundation walls, boiler and elevator pits, stucco dwellings, silos, reservoirs, swimming pools, and other forms of Portland cement construction.

It is theoretically possible to so grade the aggregates of concrete as to obtain water-tight construction without the aid of a water-proofing compound, and laboratory tests are cited to prove this, but this result is rarely, if ever, accomplished in the field. The strict supervision of the proportioning, mixing and placing of the aggregates which is necessary to produce water-tight construction can not be exercised to advantage in actual practice. Therefore, in many cases, an integral waterproofing compound should be incorporated which does not hasten or accelerate the setting of the cement, but which does lubricate the mass, reduces the number of voids, and produces an impenetrable body.

It is obvious, however, that no one method of waterproofing is applicable to all conditions. In the case of the well known tar and asphalt waterproofing it will be readily seen that the material could not be used on the outside of a concrete sea wall. In the case of a concrete floor in a manufacturing plant, on which either acid or alkali liquids are spilled, the so-called integral method would be ineffective. In the case of a concrete wall of a building subjected to rain and dampness, it is quite evident that two methods might be employed to make a building of that sort waterproof.

There are practically five methods of waterproofing in existence. The first is the old time tar and asphalt method, with or without paper, burlap or other fabric. The second is the newer type of membrane method, in which the waterproofing must be elastic. The third is the integral method. The fourth is the method of coating a surface with a non-saponifiable medium. The fifth is the newest method, known as the "Self-Healing Bridge Cement" method, which was originated and first put into successful use by Toch Brothers.

As the manufacture of efficient waterproofing compounds and coatings requires technical and scientific knowledge, laboratories and resources not possessed by the ordinary paint and varnish manufacturer; architects, builders, contractors and owners would save themselves worry and expense by insisting puon the use of only those materials which have proved in the past their merit under actual conditions of service.

In the manufacture of Toch Brothers' products every precaution is taken to insure quality worthy of their "R. I. W." trade mark, which products are to be found in every part of the world.

STAINED GLASS.

The Spirit of the American School is the Spirit of Art.

By THE TIFFANY STUDIOS.

STAINED glass dates back to the early centuries. Specimens have been unearthed, which, according to the inscriptions they bear, were executed in 24 B. C. At best, these examples were crude in design and coloring, and would be of little or no interest but for their antiquity.

The Eleventh Century witnessed the beginning of stained glass as an art, instead of a mechanical artisan's trade. The art reached its zenith in the Thirteenth Century. It was then that the glazier thought and worked in the very spirit of glass, and developed his design, bearing in mind the power in glass, its value, depth and brilliancy, as well as its limitations.

The Fifteenth Century marked the decadence of the art. The artist became too ambitious in his desire to produce pictures portraying his saint lore. He used large pieces of glass upon which to work out the detail. The result was weak and dull, the reason being that the painting was done with opaque enamel so that the brilliancy and beauty of the glass was lessened. However, this practice has been in vogue up to the present day and is still employed on the Continent as well as in America.

The American School, as it is called to distinguish it from the Continental, or antique, was founded in 1875 by Louis C. Tiffany. It began in the true spirit of the art, to endeavor to preserve the innate properties of glass; and, while doing reverence to the best of the old, to aim to increase and broaden the possibilities of the art. Through experimenting, Mr. Tiffany discovered the process for a beautiful quality of glass, formerly unknown—this is what is known as Tiffany Favrile glass. It carries beauty of surface to the highest degree, without the extreme opacity or heavy corrugation which characterized the ordinary "opalescent" glass of commerce.

When constructing a window of this glass, the artist searches through several pieces for parts which possess some shading or combination of colors which he desires; if the desired effect cannot be obtained in one thickness of glass, two, and sometimes as many as three or four pieces, are applied, one upon the other. This is a process known as "plating." The leading of the window is given due consideration, so that it frequently forms much of the design which was formerly painted in.

The spirit of the American school is the spirit of art. This is evidenced by such noteworthy examples as the glass curtain, recently completed and installed in the National Theatre in Mexico City; the glass mosaic mural decoration in the entrance hall of the Curtis Publishing Company Building, in Philadelphia; the window of "The Bathers," which Mr. Tiffany placed in his home in Laurelton; and by the window entitled "Adoration of the Magi," which is soon to be installed in Christ Church, Brooklyn, New York.

HIGHER GLASS PRICES.

Greater Demand During 1916 Than Ever Before in History of Trade.

By R. T. CONLEY, Manager Pittsburgh Plate Glass Co.

PLATE glass was in greater demand during 1916 than ever before in the history of the business, and in consequence we have had an advancing market. This is a decided contrast to the conditions existing during 1915 and was born with the revival of business. Buildings of all kinds are springing up in every section of the country. The furniture trade has revived and with it the mirror business came back to life. The manufacture of automobiles has exceeded the fondest hopes of their prophets. These are the three great outlets for plate glass. In addition, the miscellaneous use of plate glass is increasing, such as for coverings for desks, tables, dressers and other kinds of furniture.

The foreign situation has been an important factor in the market. During the past year, after the passage of the Underwood Tariff Bill, the importation of plate glass increased so materially as to demoralize the home market. The European war not only stopped this, but in closing down the foreign factories created an opportunity for the American manufacturers to market their glass abroad. Last year they exported approximately five million square feet and these figures will at least be equaled this year. A larger quantity could be exported if they were in a position to supply the demand.

At the present time all available factories are in operation and production is as near maximum as labor conditions will permit. Like other manufacturing lines, the industry has been confronted with an increased cost, due to the advance in the prices of some material used in the manufacture of plate glass, the higher wages paid to the workmen and the shortage of labor.

At present the market is firm, and while retail prices have not advanced entirely in keeping with manufacturers' prices, due to the influence of cheap glass in the hands of the distributors, yet this is rapidly decreasing and higher retail prices must follow. Indications point to continued good demand and a firm market.

The past year has been a notable one for the window glass industry, and from a manufacturing standpoint particularly gratifying for the following reasons: There was more glass made than ever before, there was more glass sold, prices advanced and kept advancing and the largest export business ever known has made 1916 notable.

On September 1, 1915, the stocks in the hands of the manufacturers amounted to 1,300,000 boxes. The stocks in the hands of the manufacturers on September 1, 1916, amounted to only about 500,000 boxes.

The cost of production advanced with the increased demand. Owing to the war, munition, machine and other manufacturing plants offered higher wages than they ever paid before and immediately labor became unrestful and discontented. Some material used in connection with the manufacture of window glass also rose on the wave of higher prices. It was therefore necessary for the manufacturers to get better prices for their product, and in consequence they made several advances which aggregated about 30 per cent. above the prices current during the summer of 1915. The workmen demanded and are receiving a substantial advance in wages for the present fire, which will probably cause a further advancement in selling prices.

In reviewing the reports of building permits for the past six months we are confronted with a healthy increase throughout the country.

COUNTRY HOUSES.

(Continued from Page 91.)

ing of years gets so damaged that the beauty which age alone can supply is entirely lost when a residence is either destroyed by fire or has to be rebuilt. In consequence, therefore, many a time where an effort has been made to save the house, also the planting has been destroyed and both have gone.

One of the author's clients whose residence is of a very handsome character and which is surrounded by planting bearing a charm comparable with some of the finest gardens in England leaves most specific instructions with his gardeners that should a serious fire take place, first every effort should be made to get out the works of art and pictures. Also that in the efforts that be made to save the house under no circumstances should the garden be destroyed, realizing that sad as it might be the house could be replaced within a reasonable time, but the collection and the garden would take many years to get back to their present condition.

One of the fundamental laws governing the design of workmen's houses is that the exteriors at least, that is, the roof and walls, should be fireproof. These are built in districts where ample fire protection exists, but country houses are denied these favorable conditions and yet how often is this risk ignored? If the expense is the cause of varying from fireproof material far better either make the house a little smaller or omit the decoration from one or two of the important rooms for the time being, for this is an insurance far superior to any policy issued by any insurance company in the world.

Where houses are already existing it is impossible, of course, to change the same, but there is no reason that should prevent having ample water supply with properly located hydrants outside and inside the house with hose racks always attached and with chemical fire fighting apparatus in every closet throughout the house, and even this precaution is often ignored.

Where a house is built of fireproof materials and an ample fire fighting system is installed regular inspections should be made to insure this being in first-class condition. Should a fire take place in a nonfireproof house and not be gotten under control within the first fifteen minutes the hope of saving it is very slight.

In all matters of this nature prevention is better than cure and the way to prevent trouble is to eliminate the cause. This can be done and as many of the architects who are specializing on the very best residences now insist to the utmost of their ability that their clients see the risk that is being run if the construction be not made as fireproof as possible so that they are fully aware of the chances that are being taken before they proceed.

The United States has taken upon itself a great responsibility. It is today creating homes by which it wishes to be judged by the world and also by the coming generations and there is no excuse for either lack of knowledge, lack of materials, or lack of money to provide the same, and this country is collecting from the four quarters of the earth art treasures in a profusion that has never been equalled since the time of the Roman Empire. These have got to be handed along, for they are blessings that are being bestowed upon this country which are not possible anywhere else, but with this blessing goes full responsibility as these objects and the character of the time and people are placed in their charge for definition and preservation and to shirk this is inexcusable.

ELMHURST SECTION.

(Continued from page 101.)

The Queensboro Corporation has already erected apartment houses, which have been rented before their completion, and it is expected within the next year or so that at least twenty-five or thirty large apartment houses will be constructed in the territory between 25th and 33d street stations.

If it is possible to fill large apartment houses in this section, and it has already been proven so, there is bound to be a tremendous increase in the value of real estate, and instead of lots being worth $1,800 to $2,000, the approximate limit for detached single-family houses, they will be worth from $5,000 to $20,000, which has been shown by the apartment house development elsewhere in the city.

Long Island City, where the greatest commercial development of New York is taking place, is within three miles of Elmhurst, and can be reached with excellent transportation. The better paid people who will be employed by these large commercial organizations in Long Island City, must be housed in good buildings with attractive surroundings, which want will be fulfilled by Elmhurst. The average workman will probably wish to locate nearer his place of work, and will select Long Island City or Woodside for his home.

There is everything in favor of the rapid development of the territory along the new Roosevelt avenue elevated line, and this growth will probably take place first in the Elmhurst section, owing to the fact that street and sewer systems have already been laid out, and apartment houses have been started, as a nucleus on which this tremendous growth can take place on the opening of the new elevated line.

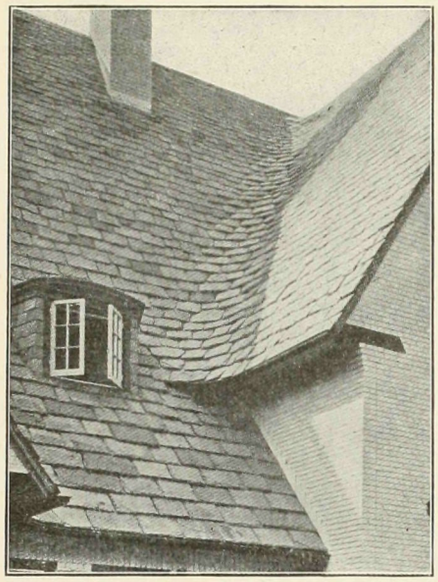
SLATE ROOFING.

Unique Effects Produced By Proper Application of Product.

By E. J. JOHNSON, of E. J. Johnson, Inc.

IN these days when extreme architectural roof effects are being sought by the public, the staid old black slate roof of uniform color and regularity of vertical and horizontal lines does not always seem to fit into the "style." There is sought variety in appearance both in color and form. To meet this requirement manufactured roofings in many colors and a variety of patterns are being constantly placed before the public by extensive and attractive advertising. The possibilities in slate to meet these varied needs are little known even among the architects, who recognize as a fundamental principle that any building material in its natural form is greatly to be preferred to a manufactured article—the one being real, while the other is but an imitation at best, and not only stamps itself as such to the eye, but proves itself inferior in time.

Slate for roofing is obtainable in a variety of natural colors, and these colors lend themselves to a variety of extremely effective haphazard combinations resulting in the richest color effects and architectural beauty. The basic natural colors in slate are black, blue black, grey, green, purple and red, while in each color there are a variety of shades as well as combinations of two distinct colors in many individual slates; again while some slates retain their color others weather to rich tones giving effects that may be well likened to the autumn tints of the hillside.



UNUSUAL SLATE ROOF TREATMENT.

Again the average person knows the roof slate only in its standard thickness (approximately 3-16 inch) and in its smoothness of surface and neatness of edges, whereas roofs are now being made up of slates in thicknesses up to 2 inches with rough dressed edges and having a surface showing a decided texture—such roofs generally being of the "graduated" character, which consists of slates starting at the eave very thick and graduating toward the ridge both in exposures and thicknesses, such slates also being laid "random" in width, thereby breaking up the uniform vertical lines as showing in a roof of uniform size. Such a roof may start at the eave with slates two inches thick and exposure of 15½ inches, other courses following up the roof, 1½ inch, 1¼ inch, 1 inch, ¾ inch, ½ inch and ⅜ inch thick with exposures gradually reducing until the upper courses next to the ridge may show 6½ inches to the weather.

Further excellent effect is obtained by "staggering" the butts of slates, thereby showing rough and uneven course lines throughout the roof. Rounded Valley showing the courses of slate continuing around the valley and on to the adjoining section is an added feature, as is also the finishing of hips and ridges with slate, avoiding the showing of any metal whatever.

While these "graduated" roofs have been made up largely in the greens, purples and reds, there are many circumstances where the building and its surroundings call for the sober, subdued blue black with a possible mixture of the dark greys.

Where cost does not permit of the graduated roof, a somewhat similar effect may be obtained without extra expense by using standard thickness slates of one length throughout the roof with various widths, thereby getting away from the uniform vertical lines of a standard roof, this being quite effective in the black slates, as also the slates of other colors, either one tone or mixtures.

ARCHITECTURAL IRON.

Decrease in Volume of Business—Radical Change Necessary to Care for Future.

By F. D. JACKSON, of the Hecla Iron Works.

THERE has been a considerable decrease in volume of business in the architectural iron industry. Architects whose work would include this kind of material have had few commissions for some time past, and it is only within the past year that there is an appearance of their getting busy. Again, it may be that overproduction of commerce buildings, and making plans to conform to the new building and fire laws, have caused a decrease in the requirements for this material.

To maintain plants in operation, and to keep a working force, has often compelled employers to take work at low prices. The result is that some plants have been closed down within the past year, and some diverted to other uses. In shops and in the field workmen have, for lack of work, or tempted by higher wages, taken up other employment.

Next to the mill that rolls the steel frame, the architectural iron plant is the largest for production of manufactured material for buildings. An architectural iron plant covers considerable acreage, and the cost of maintenance and overhead, or burden, is heavy. In addition to a force of constructing draughtsmen a number of semi-professional men and about twenty trades are required to keep a plant in operation.

The work has many interesting features, both in contracting, and in the many problems in construction. To estimate the value of architectural iron on which to bid is no easy proposition. Costs cannot be calculated and are known only at completion. No two buildings are alike—conditions vary, and contract drawings are often unlike full size drawings giving the design to work by. To carry out some designs as to construction and the effect desired is difficult and requires special study, often at the architectural iron contractor's expense.

Conditions now prevailing in this industry necessitate a radical change, or there will be insufficient equipment and men to do the work if required in any volume in the future.

The architectural iron and bronze maker does not receive enough money for his work. How conditions can be improved has been debated by makers off and on for several years. The Iron and Bronze Society formed last July may be the means to this end. It is an association of owners of the larger plants in this country, both West and East. By co-operation with architects, and others interested in the building industry, this society may be able to put matters on its proper basis.

BITUMINOUS ROOFINGS.

Adaptability of Material to Roofs Having Slight Incline.

By J. I. HOLDER, of Barrett Co.

BITUMINOUS roofings may properly be termed roofings having a felt base of rags (mixing of cotton and woolen rags) and asbestos fibre saturated with tar or asphalt. Such roofings embrace what are commonly known as built-up felt and pitch roofs, with gravel, slag, or tile surface, prepared or ready roofings, and asphalt shingles.

The incline of the roof deck is the most important factor in deciding the type or character of roofing to be used. Prepared or ready roofings and asphalt shingles are designed for and give their best service on steep roof decks, and should never be used on buildings of permanent character where the incline of the roof deck is less than two inches to the foot. The reason for this is obvious, as on a comparatively flat surface water does not readily run off, and in the case of prepared or ready roofings there is nothing to keep the roof watertight except a two or three-inch cement lap, which is not strong enough to stand the wear and tear of the weather for any length of time. A roof is no stronger than its weakest point.

Built-up felt and pitch roofs are composed of successive layers of felt and pitch or asphalt, cemented together to form a waterproofing membrane, and surfaced with gravel, slag or tile. Such roofs give their best service on inclines of less than two inches to the foot, although very good results have been obtained from the use of such roofing on inclines as steep as five and six inches to the foot, but for such construction careful and experienced workmen are required. However, the flatter the incline, the better the built-up felt and pitch roof can be applied, as more pitch can be used, and it is pitch that gives life to the felt and to the roof.

The built-up roofs on comparatively flat surfaces, which have proven by the test of time to be the most durable when properly constructed, are those composed of tarred felt and straight run American coal tar pitch, and it is safe to say that ninety per cent. of the flat roof buildings throughout the country carry this type of roofing. Authority for the lasting qualities of these roofs is found in the recent yearly reports of the American Railway Engineering Association. The following is quoted from one of these reports:

> "The built-up coal-tar roofs have shown by many years' trial their value for protecting flat roofs. Instances where a life from twenty to thirty years has been obtained are not at all rare.
>
> "Where proper materials and the requisite skill in application are available, built-up roofs of coal-tar felt, coal-tar pitch and gravel or slag are recommended for roofs with a pitch of two inches or less to the foot."

Such roofs are highly fire protective. The gravel or slag surface performs two important functions:

First—Fire protection.

Second—It holds in place a liberal volume of pitch (as much as 75 pounds to the 100 square feet can be properly held in place).

One of these types of roofing has become standard throughout the country for comparatively flat roof decks (roof decks having an incline of two inches to the foot or less) and has been placed in Class "A" by the Underwriters' Laboratories, Inc., who work under the direction of the National Fire Protection Association.

It is interesting to know that this widely advertised roof is now being guaranteed and bonded for twenty years in cities of 25,000 population or more, and in smaller centers wherever inspection service is available.

No other roofing on the market today carries such a long maintenance guaranty backed by a surety company bond, and it is significant that the manufacturer, as well as the surety company, must have faith in the material used.

FABRICATED STEEL.

Shops Unusually Busy—Termination of War Will Not Have Immediate Effect.

By ROBERT T. BROOKS, Vice-Pres. Geo. A. Just Co.

ACCORDING to our reports the fabricating shops throughout the country are unusually busy for this season of the year. Some shops have sufficient work on hand to keep them running at full capacity for the next ten or twelve months. Many local shops are sold up for seven or eight months, and probably no shop in the Metropolitan district has less than three months' work on hand.

This condition is, no doubt, largely due to the great demand that has developed for fabricated steel in lines other than the building line. It is also true that shops which have heretofore confined their operations to building work have accepted considerable tonnage from sources other than the building business.

The great demand that has been created in this country for steel products has naturally also advanced the price of steel required in building construction. Like all other kinds of steel the deliveries by the rolling mills of structural steel has been retarded. This is especially true of plates and the smaller sizes of beams, channels and other shapes. But even under these adverse conditions the trade has found no difficulty in making ordinary mill deliveries in four to five months from date of contract, or to make stock deliveries at an advanced price to meet individual requirements. Judging from information now at hand, it would appear that these conditions will probably prevail for the ensuing year.

At this writing, the base price of material is advancing. Present indications are that prices will go still higher, therefore business placed during the winter months will be placed at lower levels against prices which may prevail later in the season. It is also true that shops which have only three or four months' work ahead are now making close bids on fabricated work. It would be wise, therefore, on the part of those contemplating new operations, to place their orders promptly.

Present indications do not point to any substantial reduction in the price of structural steel. Even a sudden termination of the European War will not at once lower prices, as many people expect, for the mills are unquestionably oversold in certain lines and many are declining business along these lines when deliveries are to be made within the year.

In this connection it may be well to point out that while the present price of fabricated steel is high, a proper basis of comparison has not been made. The price of steel work for buildings in the period from 1909 to 1915 was certainly sub-normal, and it is doubtful if those now engaged in the building business will again see fabricated steel sold at the low prices which prevailed throughout that period. Comparisons would be less misleading if made with the prices which prevailed prior to 1909. Other factors also contribute to make the present price. Amendments to our building laws account for some of the increased cost of the modern fireproof structure, and some is due to the increased cost of labor, both in the shop and in the field. These conditions have probably come to stay, and they should not be ignored when making comparisons or in planning future investments.

REVIEW OF BROOKLYN.

(Continued from Page 85.)

ready in hand will be needed, and this contract will be let within the next two months.

The Museum of Arts and Sciences is one of the achievements of distinctively home life in Brooklyn. No city has a feature that ministers to its social and artistic needs more than does this worthy institution which has found so congenial an atmosphere in Brooklyn. An appropriation of approximately half a million dollars to complete another wing of the famous group of buildings on Eastern parkway opposite Prospect Park has been the aim of the borough administration during the past year. Authorization of about this amount will be given, and Brooklyn will be enriched by this new facility which has proved its worth through years of useful service.

The new and beautiful group of buildings at the Botanical Gardens on the public grounds and fronting on Washington avenue has not attracted the attention that I think it should. Partly through the individual efforts and gifts of Alfred T. White, Frederic B. Pratt and other citizens, and partly through liberal appropriations on the part of the city, this delayed improvement has taken form. It is one of the benefits coming to Brooklyn this year through the co-operation of the city and borough administration. The improvement of the grounds devoted to public garden uses in connection with these buildings is distinctive, anw may well excite the Borough's pride.

A thorough study of the Coney Island waterfront and the proposed boardwalk, or public thoroughfare, on the ocean front has been made. It is recognized that the large financial outlay of the city to its pleasure grounds at Coney Island demands further extension. Probably the final plan has not yet been worked out, but plans that largely meet the demands of such a structure have taken form and are meeting with most favorable comment. It is a part of the unfinished work of the year, and there is every prospect that a workable basis between property owners and city will be adopted during the coming year. The completion of subway lines to Coney Island gives emphasis to the need of enlarged facilities for the people at this great playground of the city.

The above is a mere outline of what the Borough administration of Brooklyn is doing to care for the growth of the Borough, and to meet the reasonable expectations of nearly two millions of the city's population. It but feebly presents the work and thought of the past year, for there has been active, earnest and sincere effort to make the most of the financial appropriations and other opportunities at our disposal. We have realized the tax burden that property owners are carrying, and we have sought to lessen these wherever possible, and in no case to encourage public works simply because they were desirable. Brooklyn has had her full share in the distribution of the city's financial favors and her social and material advancement has been satisfactorily enhanced.

DRY GOODS SECTION.

(Continued from Page 67.)

liarities of the industry, at 30 cents a square foot; to supply electric light and power at 2½ cents per k. w. h., and to provide in addition free automobile service from Garment City to 32d street, Fifth avenue and the hotel district. They agree also to provide the colony with ample dwelling houses for the labor to be employed, as well as amusements, churches, etc. Sketches of these plans have already been submitted to interested bodies, and there is a danger, in the absence of an alternative, that some scheme detrimental to New York interests will be resorted to by the wholesalers.

Through such men as J. H. Burton and Walter Stabler as leaders, the "Save New York Movement" has by constructive effort rendered New York City a real contribution. They have accomplished practical results that others felt were visionary and only theoretically sound.

The success of the undertakings of the "Save New York Movement" is therefore paramount. They are attempting, in a big way, the solution of an intricate problem, whose influence is far-reaching. It is hoped that the very tenants who are to be benefited by the movement will themselves respond to the idea of building cooperative model loft buildings to house their own businesses. This is a forward step and can perhaps be utilized in the solving of a problem that means so much to the real estate of New York city.

SHEET METAL WORK.

Condition of Market Good for Roofing, Cornices and Skylights.

By M. F. WESTERGREN.

ADVANCED cost of materials and scarcity of skilled labor have combined in greatly affecting the sheet metal working trade as a whole. Comparing the present prices of material with those of two years ago, we find that sheet iron of all kinds has advanced more than 100 per cent, sheet copper more than 150 per cent. and bronze fully 200 per cent. Clear white pine lumber, as used in our work, has also advanced, although not to the same extent.

The cost of labor has also advanced considerably and labor is getting more and more scarce, especially where mechanics of special skill are required to perform the finer classes of work, and with the scarcity of this class of labor it becomes necessary to work overtime to a great extent; this of course, increases the cost, already high, still more.

The effect of this advance in material and labor is noticeable especially in the construction of large office and mercantile buildings. Where two years ago no first class office building would be erected without the installation of copper or bronze windows, today we find some of the most prominent buildings in the city, now going up, having iron substituted for copper and bronze.

During the past year the sheet metal trade has been comparatively active. During the first part of the year there was the speculative class of work. During the latter part of the year all kinds of work have been plentiful. The situation at the present time, however, is rather serious. While work is still plentiful, a great deal of difficulty is experienced by the shortage of material. Iron sheets of all kinds are scarce, and some brands it is impossible to procure in the market.

Delivery on sheet bronze, for instance, can not be made in less than five months' time, and shipments in general are getting so difficult that if business keeps on as at present a great deal of delay will, undoubtedly, occur from this cause. It is not only difficult to receive material from the mills, but the railroads are absolutely unable to forward same in a reasonable time. Under these conditions, while we have been busy, the business has not been especially prosperous.

The prospects for 1917, however, seem bright, and though material and labor is high, "judging from the requirements for space in lofts, in our particular vicinity," I do not believe the cost will interfere with building, as it is possible to rent at once at satisfactory rentals.

These are the conditions at present. The after war conditions, however, appear to me thus: All the countries in the world are getting closer together and what happens in one country affects another to a very great extent. It seems to me necessary that we change some of our methods, especially in the labor market, not to curtail production, but to vastly increase the same, to speed up in all possible ways, to be able to compete. If we do, it is possible that the present high wages paid in this country may remain. But, if we continue with the idea of curtailing the output, no doubt the wages will also have to be reduced in the same proportion or more. If the labor leaders are willing and able to see the conditions in this light I see no reason why the new year should not be a prosperous one.

PORTLAND CEMENT.

(Continued from Page 135.)

It must be clearly borne in mind, however, that the material with its possibilities and limitations determines a style of design, and, therefore, unless construction is followed out according to the material, it is impossible to obtain the most satisfactory result from either an architectural or a practical point of view.

Reinforced concrete construction is a new art and to obtain the best results the owner, architect and engineer must work together. Then it will reveal its unlimited possibilities.

SOUVENIR

TWENTY-FIRST ANNUAL DINNER

REAL ESTATE BOARD OF NEW YORK

WALDORF-ASTORIA

FEBRUARY THIRD, 1917

COMPLIMENTS OF

THE RECORD AND GUIDE

Officers.

Laurence McGuire, President
William L. DeBost, Vice-President
Edward C. Cammann, Secretary
Alfred V. Amy, Treasurer

Board of Governors.

Thomas P. Graham (1919)
Eugene J. Busher (1918)
Edward C. Cammann (1917),
William L. DeBost (1917)
Lawrence McGuire (1918)
Thomas Hovenden (1918)
Charles A. Cone (1918)
Alfred V. Amy (1919)
Charles F. Noyes (1917).

Speakers and Guests.

Hon. John Purroy Mitchel
Hon. Robert Adamson
William C. Reed
Hon. Elon R. Brown
Hon. Maurice E. Connolly
Robert Grier Cooke
Hon. Frank L. Dowling
Hon. Robert E. Dowling
Frederick H. Ecker
Haley Fiske
Hon. Marcus M. Marks
Hon. Douglas Mathewson
Franklin Pettit
Hon. Lewis H. Pounds
Hon. Wm. A. Prendergast
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Gen. Louis W. Stoesbury
Charles G. M. Thomas
Cornelius Vanderbilt
Hon. Robert F. Wagner
Martin W. Littleton
Francis Martin
Oscar S. Straus
William P. Rae
Laurence McGuire, Toastmaster

Banquet Committee.

Elisha Sniffin, Chairman
Albert B. Ashforth
Gerald R. Brown
William L. DeBost
Joseph P. Day
Robert T. McGusty
Walter Stabler
W. J. VanPelt

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John E. Henry, J.
Frederick G. Hobbs
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Thomas Hovenden
Herbert R. Houghton
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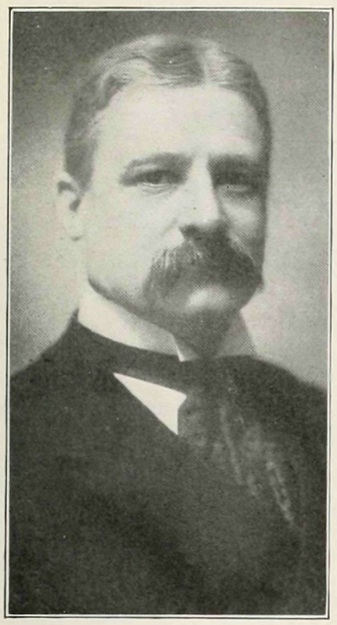
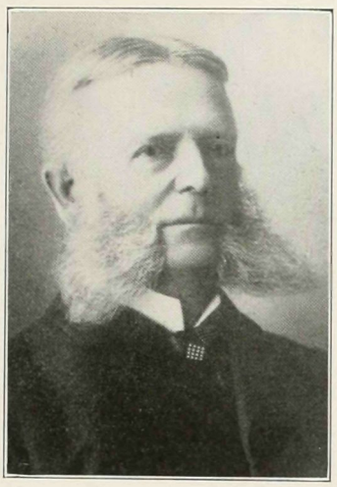
C. S. Lyons
Edgar A. Manning
Russell Marston
M. Morgenthau, Jr.
Charles F. Noyes
Maurice Mandelbaum
Mark Rafalsky
Horatio J. Sharrett
Louis Schlesinger
Robert Simon
E. A. Tredwell
W. J. VanPelt
S. Fullerton Weaver
William H. Winters
F. R. Wood
Walter C. Wyckoff
William B. Cardozo
J. Wray Cleveland

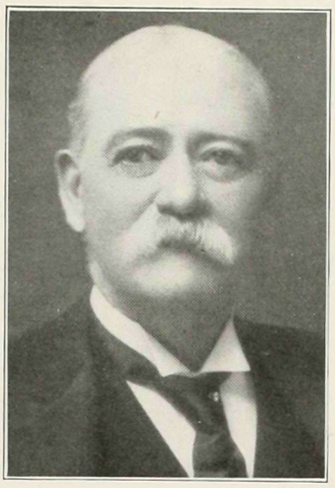
Presidents of the Real Estate Board



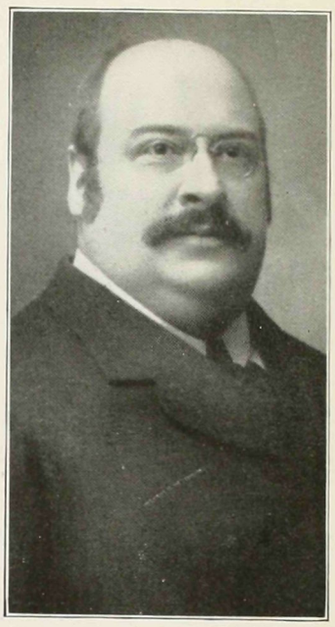
WM. HENRY FOLSOM
(1896-1898)



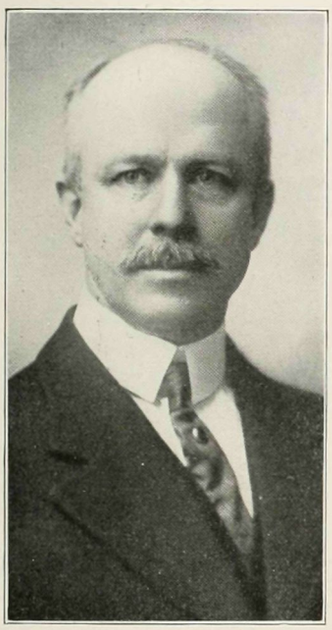
SAMUEL F. JAYNE
(1898-1899)



JOHN F. DOYLE
(1899-1902)

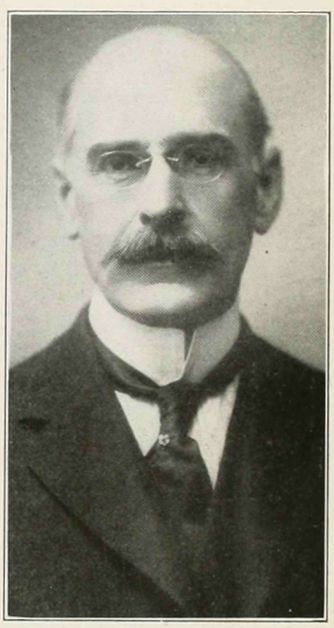


FRANCIS E. WARD
(1902-1905)



JOEL S. DE SELDING
(1905-1906)

LAURENCE McGUIRE
(1914 ——)

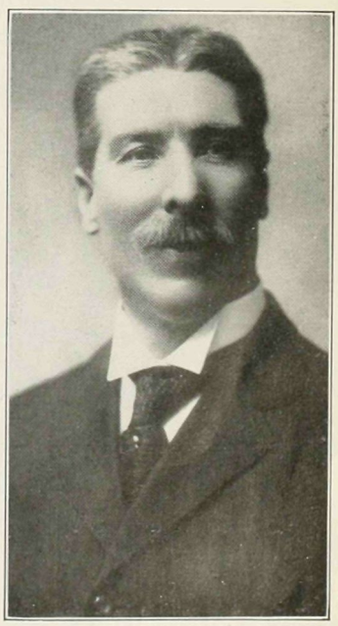


DAVID A. CLARKSON
(1906-1909)

JOSEPH P. DAY
(1909-1911)

IRVING RULAND
(1911-1913)

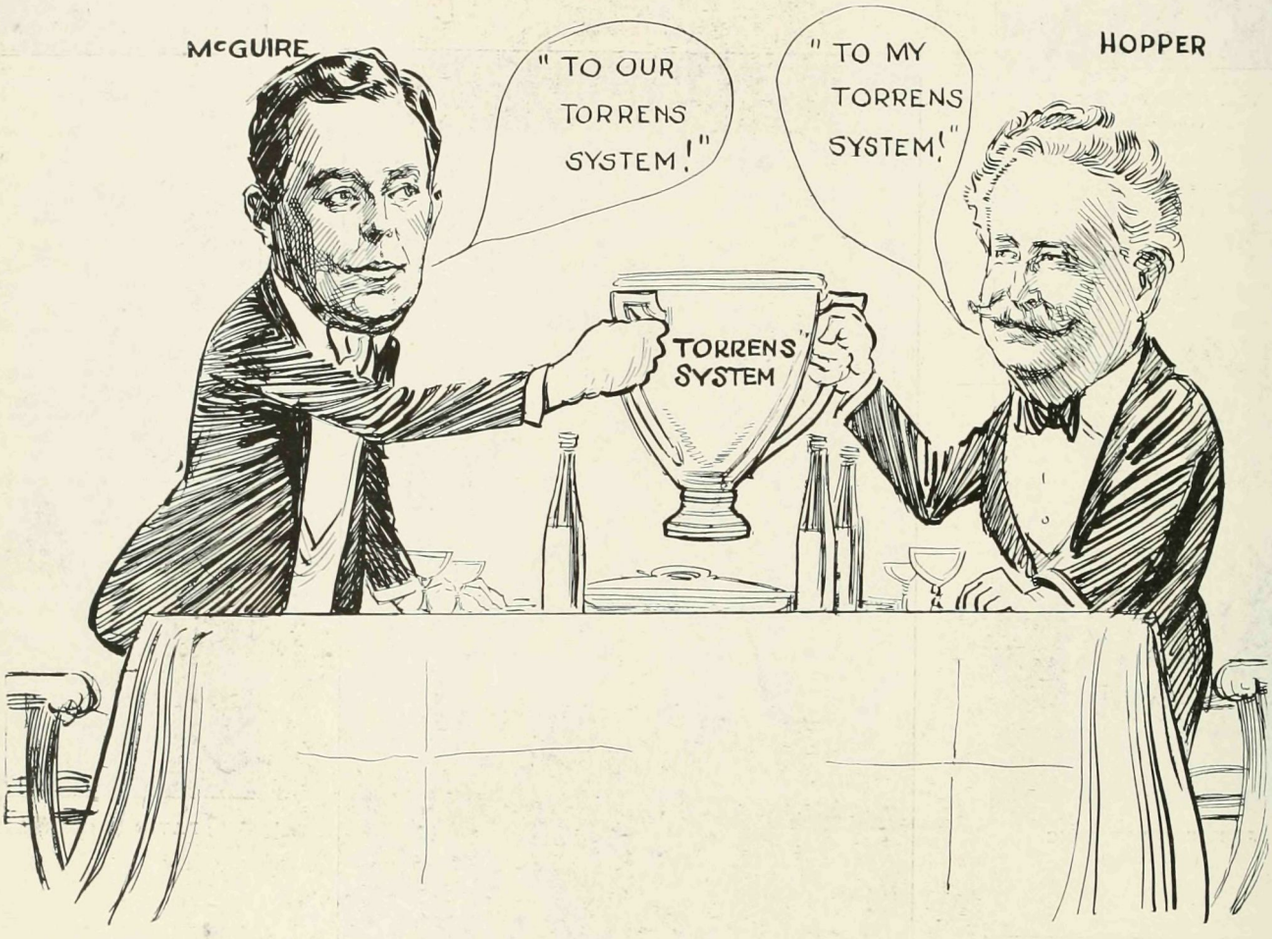
ALBERT B. ASHFORTH
(1913)

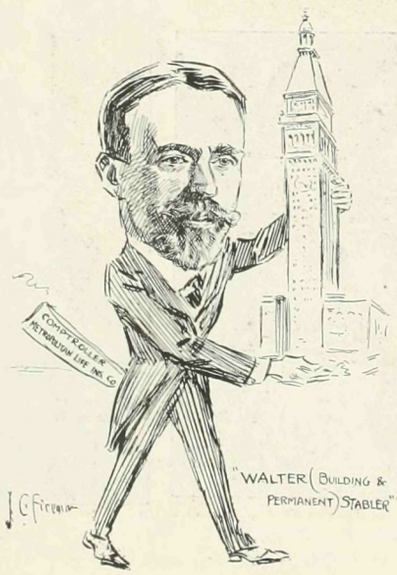


E. A. TREDWELL
(1913-1914)

"Works while he Plays"

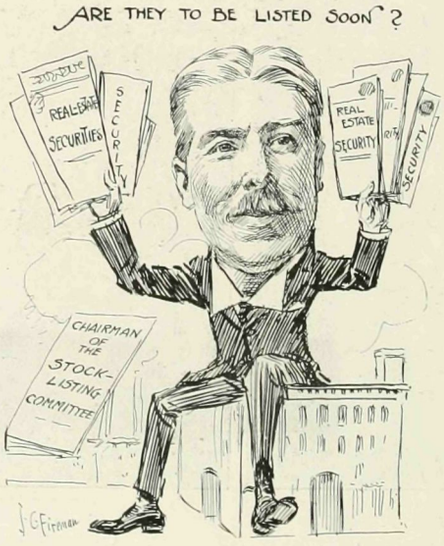
The Best Dinner-Manager The Real-Estate Board ever had"





"WALTER (BUILDING & PERMANENT) STABLER"

ARE THEY TO BE LISTED SOON?



SHORT HISTORY OF THE REAL ESTATE BOARD

Growth of Organization, Enlargement of Scope and Accomplishments During the Past Two Decades Reviewed

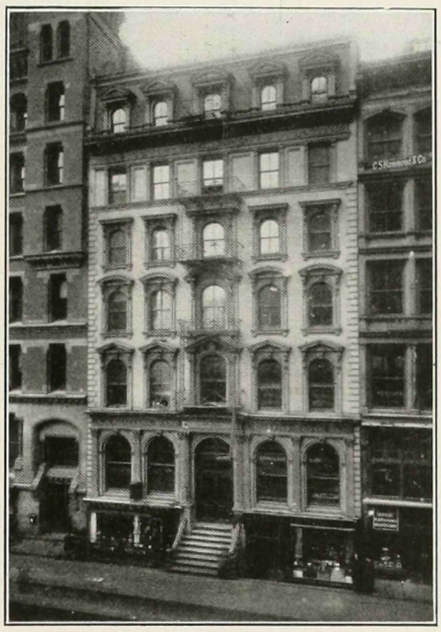
THE Real Estate Board's removal to its present home, from 115 Broadway, marked an important step in its history since its organization as the Real Estate Board of Brokers in 1896. Previous to 1885 there was no organization of brokers or unity of real estate interests outside of an Auctioneers' Association, in the old Exchange Salesroom in the basement, at No. 111 Broadway. The growth of New York and the specialization, which naturally followed, brought many new questions and problems into the realty field. Individual interpretation of the laws of equity had created a condition where every office was a law unto itself. The system had begun to break down through overweight. The necessity for some standardization was keenly felt by the leaders of professional realty.

On April 14, 1885, the Real Estate Exchange and Auction Room, Limited, was formally opened with a membership of 500. They had previously purchased the good will and records and furniture of the old Exchange Auction Salesroom of No. 111 Broadway. There were no dues, but each member subscribed $1,000 for a certificate of membership entitling him to all privileges of the Exchange, as well as an individual share in all the profits of the corporation, which had purchased the premises No. 59 Liberty street. This old five-story brick building was remodeled at heavy expense into the Liberty Street Auction Room. It is now the site of the Chamber of Commerce Building, the ground floor being occupied by the Lawyers' Mortgage Company.

For some years the stock certificates sold at a handsome premium, going as high as $1,400 for a $1,000 share, but in 1891 the auctioneers split from the old exchange, owing to a long series of differences, and for a period of four years the Real Estate Exchange kept on, practically with a limited auctioneers' annex, as all the legal sales were required by the judges to be made at No. 111 Broadway, under the auspices of the seceding auctioneers. In the final settlement, at the collapse of the Exchange in 1895, the stockholders received back the amount of their original subscription. Through the sale of the property No. 59 Liberty street, the original stock investors suffered no loss on their investment.

The first three presidents of the old Exchange in order were the following: E. H. Ludlow, Hermann H. Cammann and E. A. Cruikshank, men known for a generation in the entire realty field as embodying the highest principles and standards of real estate ethics.

The objects of the old Real Estate Exchange were not unlike those of the present Real Estate Board, except that the Exchange had the auctioneers as members, controlled by the Exchange, whereas today the auctioneers are separately organized from the Board as an association. However, the auctioneers today are nearly all individual members of the Real Estate Board.



NO. 156 BROADWAY.

In 1896 the Real Estate Board of Brokers was organized with William H. Folsom as its first president. It was located at No. 59 Liberty street, the home of the old Exchange. In 1898 the Board moved to the old Trinity Building, No. 111 Broadway. This building was demolished in 1904 to make way for the present Trinity Building, and the Board moved to the old Boreel Building, at 115 Broadway. When that building was torn down in 1906, another move was made to the Haight Building, No. 156 Broadway, and from there the Board moved back, in 1910, to the United States Realty Building at No. 115 Broadway, built on the site of the old Boreel Building. The Real Estate Board of Brokers was incorporated in 1908.

On June 26, 1913, at a special meeting, amendments to the Constitution were made and the name changed to Real Estate Board of New York. Associate members were admitted and other restrictions to legitimate growth were removed.

By October, 1914, membership in all classes had grown to 693. Since October, 1914, it has increased to nearly 1,000. A special membership campaign, to be inaugurated in a few days, is expected to bring a very large addition to the membership.

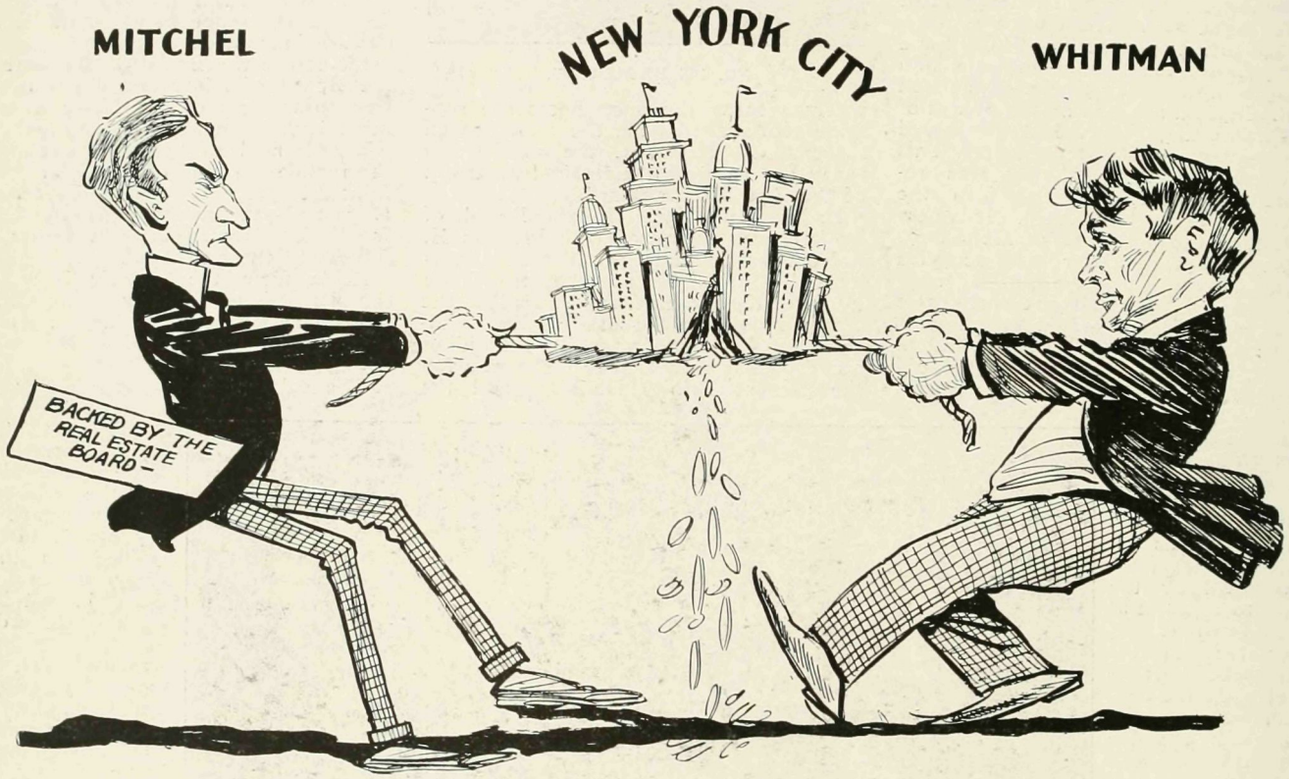
Mere growth in membership would be comparatively unimportant unless other signs of virility were also noticeable. But the Board has also immeasurably widened the scope of its work. Its activities in matters of public improvement before the Board of Estimate and the Board of Aldermen, and its attention to matters of legislation and taxation have been marked features of its widened field of activity. Yet this is the foundation only of a still larger usefulness to property owners of New York City and—an essential result if the foundation is well laid—of larger usefulness to the city itself.

Aside from the historic interest of the site, it is particularly fitting that the old Astor House block should house a building largely devoted to the interest of real estate owners.

The original John Jacob Astor lived at No. 8 Vesey street from 1802 to 1826. There was a large double house on the corner of Broadway and Vesey street. In this resided two English army officers, Col. Axtell and Major Rutherford. Adjoining this, on Broadway, was a vacant lot used as a garden. On this plot Gen. Rufus King, minister to England, built a home shortly after the War of the Revolution. Adjoining the King house was the home of Cornelius Roosevelt, and further along, near the corner of Barclay street, was the home of Richard Harrison. The Axtell and Rutherford dwelling was confiscated after the war and became the home of Lewis A. Scott, Secretary of State.

Mr. Astor began his purchases of the Broadway frontage by acquiring the King house and the garden for about $23,000. He had his new hotel in mind. He rented the King house to Edward Livingston, Mayor of New York. Later he occupied it himself and is said to have entertained among others Washington Irving.

NO. 59 LIBERTY STREET.



Why New York City Needs "Home-Rule".

NO. 111 BROADWAY.

Mr. Astor had connected the King house, by a covered gallery in the rear, with a warehouse owned by him on Vesey street. He was planning to build a more elaborate home far uptown at Broadway, between Prince and Houston streets. Gradually he secured the other houses, except that of John G. Coster, on the Barclay street corner, and he is said to have paid approximately between $15,000 and $30,000 for each house and lot, 25 feet by 100 feet.

The Coster house, No. 227 Broadway, was the subject of considerable dickering. Tradition says that Mr. Coster finally got $60,000 for it.

In the diary of Mayor Philip Hone, under date of May 1, 1834, an interesting account is given of the preliminaries which preceded the erection of the hotel. Mayor Hone wrote:

"Mr. Astor commenced this morning the demolition of the valuable buildings on the block fronting Broadway from Barclay to Vesey street, on which ground his great hotel is to be erected. The dust and rubbish will be almost intolerable, but the establishment will be a great public advantage and the edifice an ornament to the city, and for centuries to come will serve, as it is probably intended, as a monument of its wealthy proprietor. I am sorry to observe since Mr. Astor's return from Europe that his health is declining. He appears sickly and feeble, and I have some doubt if he will live to witness the completion of his splendid edifice." Mr. Astor, however, lived eleven years longer.

Meantime Mr. Astor had in 1830 engaged Isaiah Rogers, an architect, to draw plans for the hotel which was to be the most elaborate hostelry in the country. Rogers spent about a year on his plans.

The hotel was completed in 1835 and was opened on May 31, 1836. It was built of Quincy granite, in a remarkably massive style. It was five stories high with a frontage of 201 feet on Broadway, 154 feet on Barclay street and 146 feet on Vesey street. Its height was 76 feet and it contained 300 rooms. The main dining room was 108 feet by 42 feet. The cost of the structure was $350,000. The total cost of the building including the land, furnishings and equipment was $750,000.

The wiseacres of the time thought Mr. Astor was making a grave mistake in building a hotel at this point, for Chambers street at that time marked the northwestern limits of the business district.

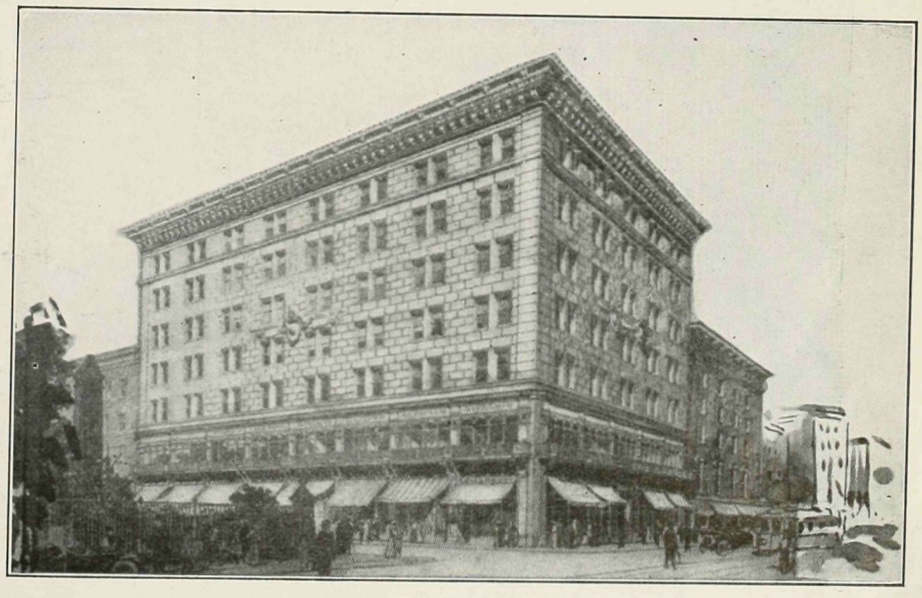
As a matter of fact the hotel had something of a struggle in its early history. Frederick Boyden, the manager, formed a partnership in the second year with Charles A. Stetson, his clerk, and Robert B. Coleman. Stetson finally went it alone. Later he turned over the management to his son. The hotel went along under the firm name of Charles A. Stetson's Sons for four years more, until in 1875, when the Stetsons were sold out.

The subsequent history of the hotel was one of great success. After the easy-going regime of the Stetsons, the hotel was re-opened up by Allen and Dam, and $250,000 was spent in improvements. The new regime was very strict. Business was on a cash basis and the partners shared the profits at the end of each day. Flavius J. Allen died in 1901. His widow became the lessee, and her nephew, Alfred H. Thurston, managed the hotel up to the time of its closing in 1913.

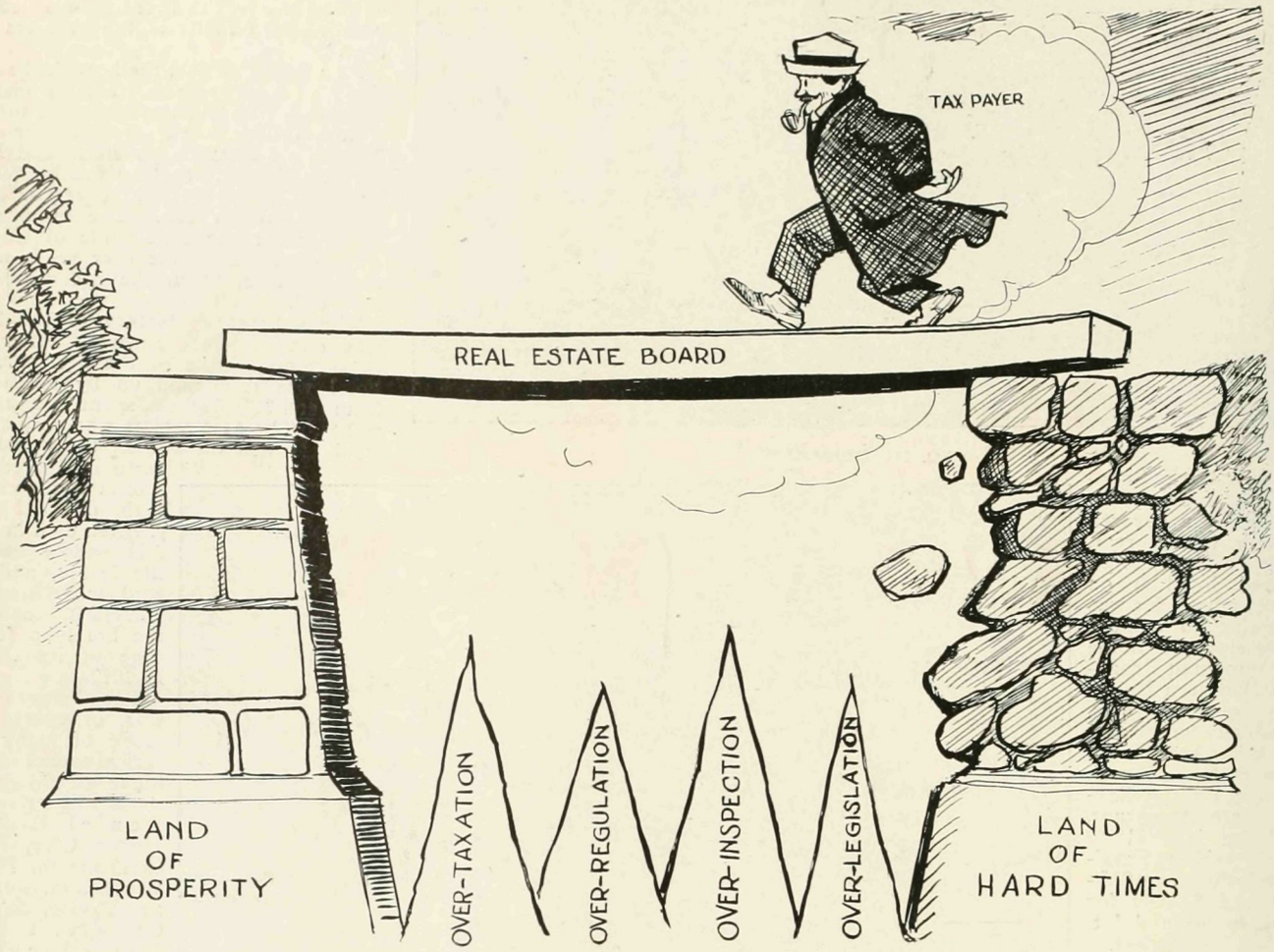
The Astor House was, of course, the scene of many historical events and the home of many important persons Daniel Webster, Henry Clay, Abraham Lincoln, Pierce, Van Buren, Buchanan, Taylor, Seward, Choate, Douglas, Andrew Jackson, Jefferson Davis were among its patrons. Dickens and Washington Irving were frequent visitors. Edgar Allan Poe picked up in its corridors many news items for Graham's Magazine. Jenny Lind and Thackeray sojourned there. Prince De Joinville, Grand Duke Alexis and Edward VII, then the Prince of Wales, stayed there on their visits to this city.

The hotel was demolished in 1914, because the site was needed for subway construction, as part of the new transit system now under construction.

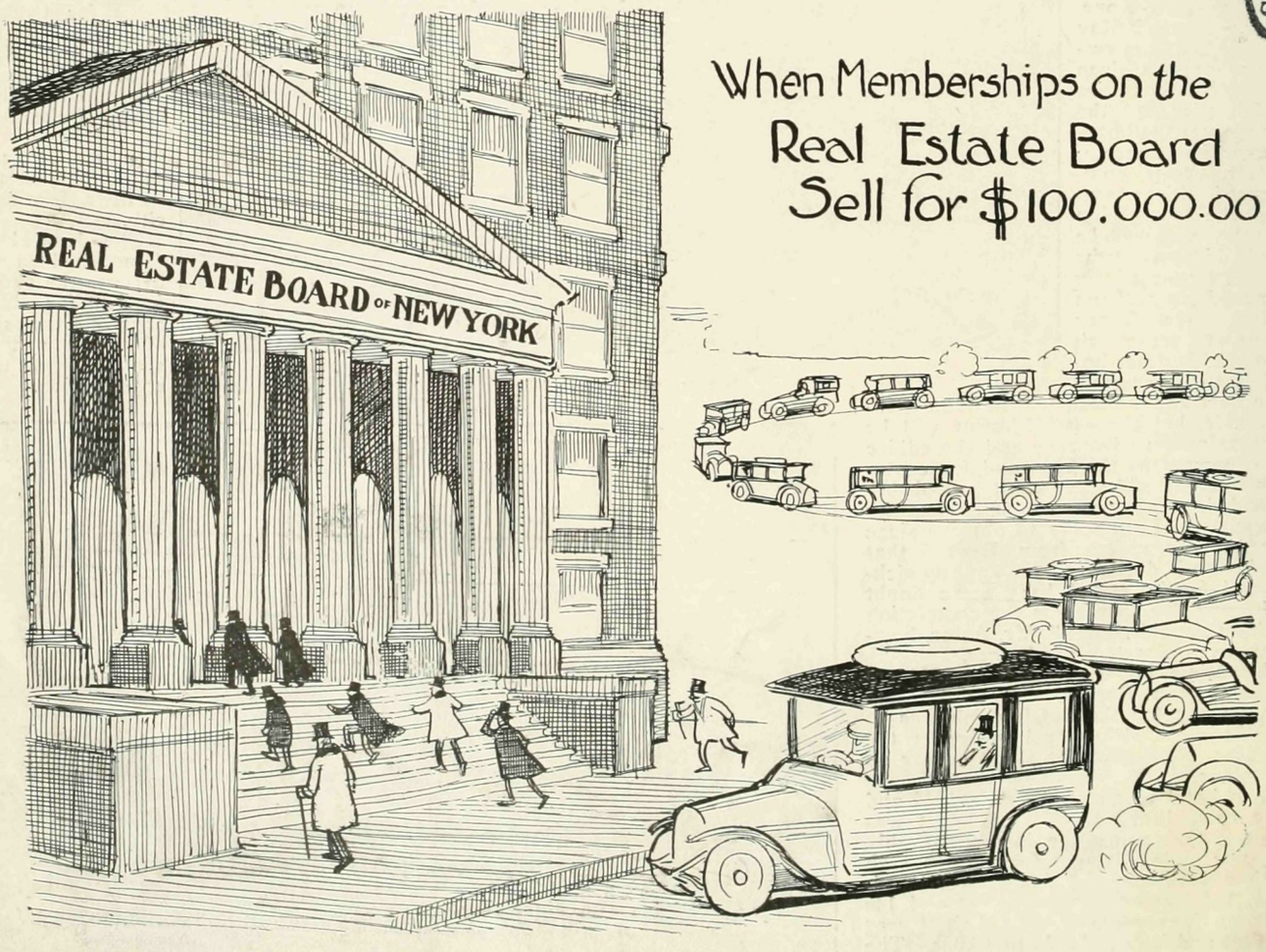
NO. 115 BROADWAY.



NO. 217 BROADWAY.


TAX PAYER
REAL ESTATE BOARD
LAND OF PROSPERITY
OVER-TAXATION
OVER-REGULATION
OVER-INSPECTION
OVER-LEGISLATION
LAND OF HARD TIMES

N.Y.H.S.


When Memberships on the
Real Estate Board
Sell for $100.000.00
REAL ESTATE BOARD OF NEW YORK

Real Estate
Board of New York

217 Broadway

Real Estate Board of New York

Incorporated

217 BROADWAY

A non-political Organization of practical business and professional men to constantly watch and take proper action on legislation, taxation and all propositions, which affect real estate.

Of Interest to Property Owners and Tax Payers

Twenty-one years ago in February, 1896, the Real Estate Board of Brokers was organized. The necessity for the establishment of this board was made through the collapse of the Real Estate Exchange which had been in existence since April 14, 1885, it being realized then as now that the realty interests must be safeguarded.

The objects of those two organizations were practically the same except that the membership of the Real Estate Exchange consisted of auctioneers. To-day the auctioneers have a separate organization although the greater majority are members of the Real Esate Board as well.

On June, 26, 1913, the pesent Real Estate Board of New York, through change of name and broadening of its scope assumed its present character.

An extract from the minutes of that meeting reads as follows:

> "On June 26, 1913, at a special meeting, the present REAL ESTATE BOARD OF NEW YORK, was organized, from which, in course of time, much is to be expected. Its field is large, many restrictions to legitimate growth have been removed and the subject of Real Estate is one of vital importance to every one in this great City. The history of the past shows we do not, indeed we cannot, stand still and to-day without a suspicion of personal profit but for the betterment of all, the Imperial City has an organization, we trust, fitly representing its greatest asset through the years to come in the REAL ESTATE BOARD OF NEW YORK."

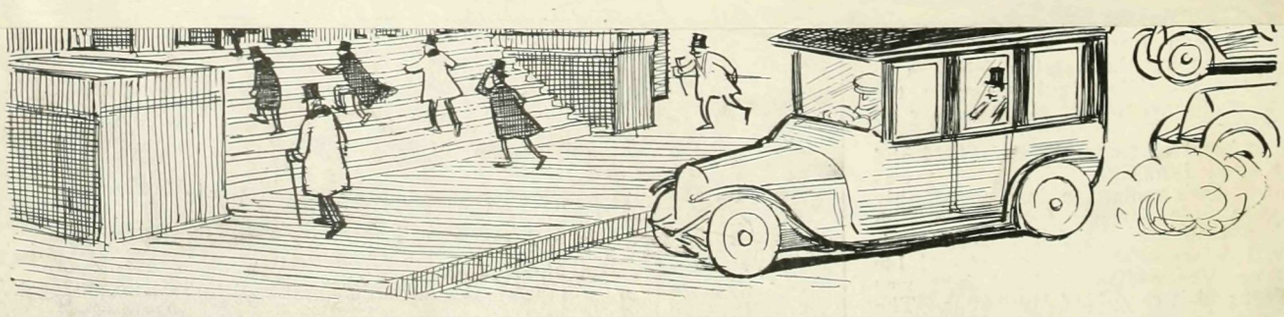
The Active Membership of the Real Estate Board which is limited to 200 members, comprises practically all of the Realty Brokerage and Agency Firms in the City of New York. Members conduct their business under a prescribed code of ethics and the fact that a firm holds a membership in the Real Estate Board is in itself a guarantee of highest standard of business conduct and protection in all Real Estate transactions.

This organization comes now to another period in its history. Time, progress, modern methods and vision make it advisable for the Real Estate Board of New York to expand not only in order that it may meet the ever increasing problems of the present and the future but so that it will be fully representative of Greater New York.

Active-Associate Members

To provide for this expansion A NEW CLASS OF MEMBERSHIP TO BE KNOWN AS ACTIVE-ASSOCIATE MEMBERS HAS BEEN CREATED.

The Active-Associate Members are to have practically all the privileges of Active Members. They shall be eligible to serve as members of the Board of Governors and shall be entitled to vote at the annual meeting for Governors to represent them on the Board.



The Board of Governors

There shall be six Active-Associate Governors who shall represent the Active-Associate Members. The Directors and Active-Associate Governors shall together constitute the Board of Governors.

A Statement made by President McGuire on December 16, 1916, is here apropos:

> "The causes that have brought upon real estate many of the hardships which it has to endure, and upon the City a $212,000,000 budget, are now pretty well understood. Without going into particulars, it is sufficient to state that not alone property owners but all persons interested in the welfare of the City now fully realize that little can be accomplished by way of remedy without united action through one large, effective, thoroughly equipped and thoroughly representative organization.
>
> "It has for some time been plain that however effective the work of the Board may have been, its organization was to some extent defective because the constitution prevented election to the Board of Governors of persons other than real estate brokers, mortgage brokers, appraisers, etc., this right being confined to Active Members. This prohibition has just been removed.
>
> "It may readily be seen that the presence on the Board of Governors of representative members recruited from legal, financial, insurance, architectural, engineering, building and other professions, and of course from the large real estate owners throughout the City, will be of great value and have a tendency not only to broaden the point of view but to extend the scope and influence of the Board. We look forward confidently to a large addition, in the Active-Associate Class, in the near future."

The Strength of any Organization Lies in its Membership

Any owner of real estate or other person, corporation or company who may be interested in the welfare and advancement of real estate interests should be affiliated with the Real Estate Board and is eligible as an Active-Associate Member.

If we are to continue to safeguard the interests of the real estate owners, to endeavor to protect them in matters of taxation, to employ counsel for the accomplishment of these ends we must look to the co-operation of those interested and affected thereby.

During the past year 203 bills affecting Real Estate directly or involving the expenditure of money to be directly or indirectly reflected in local taxation were acted on. Of the 203 bills acted on 95 were approved and 108 disapproved by the legislation and taxation committee of the Real Estate Board. Of the 108 bills disapproved 89 were defeated.

The activities of the Real Estate Board extend over a wide area including matters of taxation, public expenditure and local regulation coming up before the legislature and of necessary public improvements and of unnecessary, extravagant and wasteful expenditure of public funds.

Every act performed by the Real Estate Board of New York is in the interest directly or indirectly of the entire community.

Active-Associate Membership in the Real Estate Board of New York requires no initiation fee. The annual dues are Twenty-five Dollars, payable in advance on the first day of January in each year.

Aside from the benefits derived from the activities of the Real Estate Board of New York, the Board offers its members:

CO-OPERATION in efforts to secure needed economies in City and State expenditures.

INFORMATION about State and Municipal improvements, projects and procedures.

ADVICE on all matters that concern real estate owners.

FREE ACCESS to real estate records.

A LIBRARY, with reference works.

A CONVENIENT DOWNTOWN PLACE for keeping business appointments and meeting fellow members.

ASSOCIATION with experts in various branches of real estate construction, etc., etc.

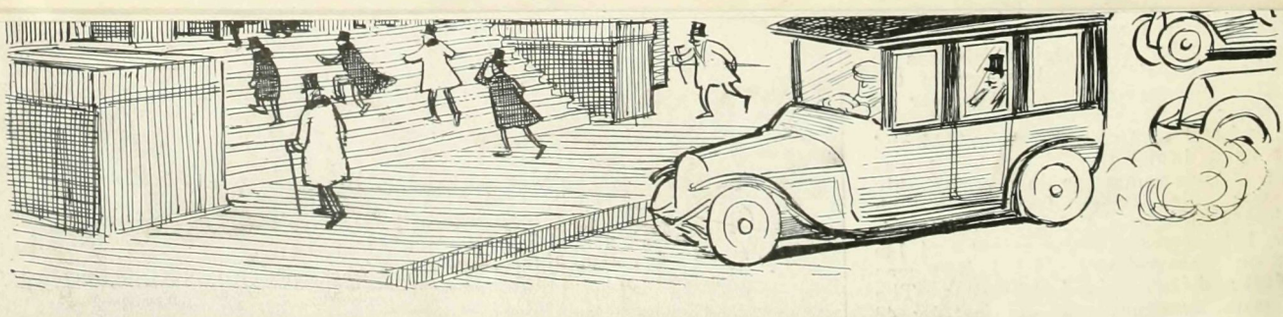
There never was a time when real estate owners stood to gain more through organized effort or to lose more through lack of organization than the present.

The Real Estate Board has undertaken a vast amount of work during the past three years and the program of its activities contemplate a much broader scope in the future, whereby intelligent service will be rendered its members and the community.

Through recruiting the Active-Associate Membership, the influence of the Real Estate Board will determine much in equitably distributing the cost of maintaining government so that only a fair and reasonable proportion will be charged against real estate. The Real Estate Board of New York being representative of the greatest city in the world, should mean the greatest Real Estate Board in the world.

The Real Estate Board of New York constitutes the center of organized effort for the protection and conservation of real estate interests, and through its members and associations creates and maintains security and confidence in real estate. It fosters and advocates equitable laws for the betterment of the communities, their natural resources, public utilities, public institutions, highways, waterways, and other public properties and for their development and welfare in general and seeks the elimination of every phase affecting real estate as a standard investment.

THE REAL ESTATE BOARD OF NEW YORK



THE NEW-YORK HISTORICAL SOCIETY