CHICAGO SCHOOLS, W. B. MUNDIE, Architect

THE
WESTERN ARCHITECT

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ROBERT CRAIK McLEAN, EDITOR.

CONTENTS.

AMERICAN FIREPROOF CONSTRUCTION WINS IN LONDON.

Americans are sharing in the London building boom. No less than four large modern hotels are under construction and contemplated, in addition to a great number of office and warehouse buildings. In connection with this boom, British architects and builders are adopting to a considerable extent American methods of steel frame and fireproof construction.

The National Fireproofing Company has been successful in securing a number of contracts for fireproof work in these new buildings, and has recently made a test in London of their patented reinforced terra cotta floor arch construction. This test was made under the direction of the British Fire Prevention Committee.

The fire-resisting floor-arch construction which was tested consisted of hollow tiles of burned clay material, with a metal reinforcement in the form of a wire truss. This arch was supported by steel I beams, spaced at proper distances to safely sustain the superimposed load to be carried. The requirements of the British Fire Prevention Committee are very rigid, consisting of a fire test of four hours at a temperature of 1700 degrees, after which water is applied to the under side of the arch.

Such a test of the construction described was made on June 28th, and was entirely successful. The result of the test was satisfactory to the authorities, and assures a large amount of fireproof floor construction in London by this method. The hollow-tile, reinforced floors are absolutely fireproof, and at the same time are much lighter and stronger than other systems heretofore used in London.

The Master and Secondary clocks made by the Fred Frick Clock Company have electrically actuated movements, the Master clock sending an electric current to the Secondary clocks each minute of time. The Master clocks will operate any number of Secondary clocks.

Accompanying "General Catalogue T" which the St. Paul Roofing Cornice and Ornament Company is sending to the trade, is a special proposition and some practical tips for creating business, which, with the fully illustrated catalogue, is worth reading; preserving the catalogue for future and general reference on roofing and cornice work.

The loss of horses from fire in barns through their well known disposition to rush into rather than away from fire, is made almost impossible by a new hitching strap and leading rope combination. A ring for the halter strap in the stall is so connected with a rope leading to the door of the barn that one or any number of horses may be released by a single pull of the main rope and all lead together from the burning structure.

Among the pamphlets that do not go into the waste basket but are read by plumbers and architects in leisure moments is "Modern Sanitation" issued by the publishing department of the Standard Sanitary Manufacturing Co. The June issue is attractively illustrated by the scene of Marat's "removal" by Charlotte Corday, and a portrait of the lady behind the prison bars, and one (in a similar predicament, temporarily at least while writing copy this hot weather), the author of a paper upon plumbing, besides other interesting matter.

The imperial plate prism glass now used by the American Luxifer Prism Company in their plates of large dimensions, gives special advantage in lighting areas under sidewalks never before enjoyed, and their use in store fronts with the outside polished surface and prismatic reflections inside, adds fifty per cent to the light within. In skylights more than a hundred per cent of light is added by their use. It is probable that the use of Luxifer prisms has contributed more to the comfort and health of the cities than any other invention of the century, their adaptability to any form of design making their use well-nigh universal.

A Montana architect has secured judgment against an intending builder who had plans drawn and then concluded not to use them. The plans were for improvements at a hotel which the client had in view to lease. Failing to close the lease, he did not want the plans. The action of the architect is a good one for the profession as a whole. There is altogether too much aimless plan-making being ordered by people who have an idea that they may want the work, and if they do not, there is nothing lost.

What that indispensable journal, Country Life of America has become to the lovers of landscape and out of doors activities in field and forest, in hunting wild things or beautifying the exterior of homes, a more new but as elegant a journal is the Garden Magazine also published by Doubleday Page & Co. In these two magazines the people of this country find the refinement and culture that pertains to life in the open, whether it be garden of a millionaire, the hunting camp of the naturalist or the back kitchen garden of "common folks like us." The matter in each is of the highest order of excellence, for each department is edited by men of sympathetic knowledge of their work, and the public obtains the best they know in the pages of these magazines.

The average man investing his money must perforce consult architects before deciding upon the plans and details of a proposed enterprise, and their advice generally must have great weight on the structural units to be employed. I have always maintained that the relation existing between architect and client is one of the highest trusts, equal, I think, to a like relation between client and physician, and for this reason the choice of structural materials should be carefully considered, to the end that the greatest final result may be obtained, not so much the appearance of the structure, but rather the strength, stability and fire-resisting qualities of the units entering into the whole. To do this, perchance, may involve cutting out some of the artistic beauties in exterior and interior, but surely it is better that a building have a substantial frame, built of indestructible materials, with a plain interior finish, than an elaborate and artistic marble and decorated interior, fastened to a base of combustible timbers, subject sooner or later to rot and decay.

A steel theater curtain, which is at once protective and operative, is on the market at last through the persistent and intelligent work of R. W. Paltridge & Co., of Chicago. There never was an asbestos curtain in the Iroquois Theater, but if there had been one of the best instead of a sham, it probably would have burst under the terrible strain of gasous matter generated by the burning scenery seeking a vent when the stage doors were opened. This steel curtain is at once flexible and simple in operation, and equipped as automatically as is possible with good mechanical construction. Its first cost is of course greater than asbestos or other curtains and as it is not fire, but panic that is most dangerous, so this curtain not only instantly and thoroughly walls in the stage, but prevents the fire from spreading after the audience has escaped.

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An invitation is extended to any white merchant outside of New York city, or their representative, whose name appears in Bradstreet's or Dun's commercial agency books, to accept the hospitality of our hotel for three days without charge. Usual rates, apartment with private bath, $3.00 per day and up, without meals. Parlor, bedroom and private bath, $35.00 per week and up, with meals for two. New York merchants and editors are requested to call the attention of their out-of-town buyers and subscribers to this advertisement.

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THE SEPTEMBER NUMBER

OF THE

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CASS GILBERT, Architect.

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The three prize drawings will become the property of the Western Architect Co., who reserve the right to purchase any of the other submitted designs at the price of $25.00. Other drawings will be returned if the envelopes contain sufficient postage to cover cost of transportation.

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The cash awards will be paid upon the adjudication of the competition, but the right is reserved to reject any and all designs.

The Western Architect

AN ILLUSTRATED MONTHLY JOURNAL
DEVOTED TO ARCHITECTURE AND ALLIED ARTS

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ROBERT CRAIK McLEAN, EDITOR.

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COMPETITION ANNOUNCEMENT.

The publishers of the WESTERN ARCHITECT make what should prove an attractive announcement to draftsmen on advertising page xv of this issue. It is liberal in its provisions and aims to bring out not only the designing but the illustrative ability of the designer. In calling upon the draftsmen, particularly club members, to aid us in making our Minnesota State Capitol number an artistic success, we feel that we are giving them an opportunity to express what we know exists, their appreciation of the work that is constantly being done in the interest of draftsmen by this journal. In naming cash prizes we do not feel that we are in any degree paying for the services asked for, but depend upon the good will of those who give their time and talent to the production of an artistic design.

CHICAGO was once described by eastern people as "an over-grown country village," and as such was excusable for much of its youthful ungainliness, but since the world's fair no such excuse has existed. This youthful carelessness has since developed into man's depravity, and in spite of the earnest work of a few, the same disregard of the consequences of present action and future needs goes on. The city authorities not only neglect their one road to civic salvation, that of a sane, concrete scheme carefully and broadly planned that will take in all her future utilities, not for the profit of the few, but for the benefit of the many, but have jeopardized even her present investments, by allowing a stock jobbing and perfectly impractable tunnel to be built under her streets. It is probable that the settlements that have occurred through this useless bore, will, with the prosecution of the principal officers of the company for alleged improper practices, call the attention of the public to the general condition of public utilities. The settlements can be shored up and repaired, but the eradication of the graft system that seems to be epidemic, is not so easy to accomplish. In another column is printed what might be called a sectional view of the subsoil underlying the depressions that one sees here and there on Chicago streets. This journal is published, not for "everybody," but for the architectural profession, and only touches on the political phases of the case because they are directly responsible for the settle-

ments which jeopardize the isolated-foundation buildings. A tunnel honestly built by capable engineers, with due consideration for the foundations of adjacent structures, would not disturb them. Such tunnels, or rather subways, will have to be constructed and will be, and honest work will do it. Until such can be obtained every scheme tending to undermine the foundations of tall buildings should be opposed. We do not wish to emulate a Lawson or a Tarbell, but we do know the inside workings of this system, by which the upbuilding of what could be the greatest city on the continent has been retarded and exploited, and, as far as it affects constructive features, we will give warning where it seems necessary.

THE resignation of John F. Wallace as chief engineer of the Panama canal is a blow that the enterprise will have some difficulty in recovering from, notwithstanding that an engineer of almost equal reputation and ability has immediately accepted the vacant position to control the engineering of that great waterway. There has been considerable speculation in the public press in regard to Mr. Wallace's reasons for resigning. A hasty Secretary of War, annoyed at the sudden resignation, even suggested that it was because of a higher compensation in another field. It did not need Mr. Wallace's explanation for engineers and architects, particularly those who have done government work, to understand the entire situation. Mr. Wallace is an engineer and has for years headed the constructive department of a great railroad system organized with a president and board of directors and heads of departments much similar in formation and function to the United States government. But with this difference, his work was given him to do and a free rein accorded until it was finished, his simple statement as to time and cost being taken, with full support from the president down to aid his endeavors. With the government it is different, much different, than with private corporations. With government what is popularly known as "red tape," contracts, retards, and obstructs, all free action of every public servant. An order issued by the head of a bureau is not carried out at once. It must be scanned by the thirty-third assistant, the typewriter and the office boy of every connecting department. If it has to do with constructing a canal or the machinery of a battle ship, a Secretary of War who may be a good lawyer, but who never paddled a punt on a mill pond, or took a bicycle apart, criticizes, obstructs, and even advises changes in the plans of the greatest experts in their respective lines in the country. Red tape was and probably is still absolutely necessary because the political appointee is still the rule and the professional man engaged for his ability alone the exception. But the exception should follow the rule and it is upon those who maintain the obstructive methods in vogue and not upon Mr. Wallace that the responsibility of his or other like resignations rests. It is hoped that sufficient latitude may be given to Mr. John F. Stevens, who has accepted appointment in Mr. Wallace's place, to enable him to carry on the work with some degree of celerity and success. But the system is old and it is probable that even the President will find it difficult to obtain the free hand for the engineers that seems vital to their success.

WHILE the ignorance of a portion of the public in regard to architectural practice is reflected by the daily paper that speaks of the architect "figuring on plans," "bidding for the work," or "giving the contract," it is refreshing to find one, like the Grand Rapids *Herald*, that not only knows the scope of the architect's work, but closely observes his privileges and limitations, as well as his tempermental shortcomings, and calls attention to them in a considerate and practical manner. The remarks of the writer not only apply to his home town, but can be read with profit by the profession from Maine to California; for, though in a way, lecturing the local architects, he calls attention to a neglect of opportunity that is as general as it is unreasonable:

> This city has as talented architects as there are in the country. The many beautiful homes in Grand Rapids are standing monuments to their skill and artistic taste. Their field of usefulness is not confined to this city. Home builders in other cities look to Grand Rapids for their plans. This is pleasing, as every evidence of Grand Rapids' eminence in any line always is. The architects have done much to make Grand Rapids what it is. But could they not do more if instead of each working by and for himself, they would co-operate more cordially, not only with one another but with other influences that are working to beautify the city? In Chicago the architects have an organization. They meet at intervals to discuss plans, ideas and schemes for making the city more artistic. Through their organization they have influence not only with builders of blocks and homes, but with the municipal authorities. They are consulted in regard to the placing and adornment of public buildings, the laying out of parks and boulevards, and the beautifying of streets and districts. Civic patriotism and the desire to promote the beauty of Chicago leads them to render their service willingly, cheerfully and free. Their direct returns come from the improvement in the public taste and in the higher ideals established. The architects of Grand Rapids might find a lesson in the active willingness of the Chicago architects to make their influence felt beyond strict professional lines. An occasional word of advice from them, a hint, a suggestion, a recommendation, would be most acceptable, in this city where the home beautiful idea has taken such a firm hold. It cannot be said they are remiss in their duty in not volunteering their services, but it does seem that they are missing valuable opportunities to promote sentiment that would add to their standing and to the dignity, importance and recognized usefulness of their profession. They should be active leaders in what is being done to increase the city's beauty, and not leave this work to others, who may not be so well fitted for it, either in good taste nor artistic training.

It has always seemed strange to observe that a profession that has so much in common, whose ideals are the same, and among whom the praise for exceptional work is so freely accorded no matter what business rivalry may exist, should not be more inclined to get together in spirit and sympathy, and work out as a whole what as individuals they each feel the need of and long to see accomplished.

AN important decision has just been handed down by the supreme court of North Dakota, which holds that a supervising architect has the same right to file a lien on a structure for which he has made plans and specifications and superintended the construction, as has a contractor or mechanic who labored on the building. While this only applies to architects within that state, it should have a bearing in other states where the courts are not so enlightened in regard to the "laborer worthy of his hire" position of the profession.

CHICAGO STREETS ARE SINKING.

Of the hundreds of thousands of readers who glanced at the above headline from the Chicago daily papers of June 29th, 1905, it is safe to say that not one in ten thousand knew its grave import, or gave it a second thought, yet these three words are the indices to one of the most startling situations of public credulity and indifference, coupled with official connivance and misrepresentation for the benefit of a speculative corporation, that has ever existed in any American city.

To show the relation of cause and effect, a brief review based on facts, covering a period of some ten years, will be given by one competent to quote.

1893 and 1894—In the accomplishment of her beautiful World's Fair, Chicago showed the world her progress and intelligence; but in the situation she has since allowed herself to be buncoed into, especially since 1898, she will only deserve and receive the world's ridicule when the truth becomes known.

Immediately following the World's Fair, the situation of the "L" road terminals, and their poor financial condition due to panic and improper terminals, attracted the attention of certain longheaded and public spirited men to the fact that when the street railway franchises expired in 1903, Chicago would be face to face with the *traction question,* and in anticipation of this approaching time, a certain group of men set about to study and prepare in all honesty and serious intent a broad and sufficient plan to meet and solve all the coming problems Chicago would have to handle when she came to settle her traction question and provide for all time for the required expansion attendant upon her growth.

Meanwhile, contrary to the advice of competent engineers, men then in his own employ, Charles T. Yerkes, the then traction king of Chicago, for purposes of construction and obstruction, built the Union Loop. No better concrete was ever put into Chicago foundations than that used in the solid foundation piers resting upon the good, stiff clay below the built-up streets of Chicago, and which foundations since they were installed have supported the heavy steel structure over which the trains of four elevated roads pass every moment.

While Yerkes was building his Loop and getting options on the legislature, in the Humphrey-Allen bill days, the Sunday editions of certain Chicago newspapers were doing their utmost to instill in the public mind a longing for municipal reform by publishing phrenological illustrations of the bumps of depravity and boodleocity on the heads of the "gang" aldermen, who put through things like Ogden Gas and Calumet and Blue Island deals.

1896—The Municipal Voters' League and Civic Federation got busy. Aldermen watched detectives and detectives watched aldermen. Clark street south of Washington, where foregathered the gents of the green table and a sure thing at the track, went into a state of innocuous desuetude. The thirty-thousand-gambler vote ceased to be a factor in the elections of Chicago, and things were not at all like "the olden days, the golden days, the good old days gone by." Then, worst of all, some fool stuck the civil service onto the city hall and the boys were down and out.

Just before Chicago got entirely good—the Chicago City Railway Company concluded to put up some trolley poles on Clark street and Wentworth avenue, but a lot of people and the fire department objected; Mayor Swift said he did not want the poles, the council, that is some of it, wanted the poles, but they hated to mention it just then, owing to the popularity of the fire department.

Just then Lucius Clark came along with a Mr. Brandenburg who had a trolley car with its electric wire in an underground slot. Seeing what a lot of trouble everybody was having about a lot of trolley poles and reform, Clark and Brandenburg went over to the map department of the city hall and found there was a bunch of old streets lying around loose on the south and southwest sides. The names had been changed on some of these streets and the council had almost forgotten all about them. Mr. Clark asked Mr. Yerkes if he cared whether they used these streets and Yerkes said he didn't care, but Yerkes told the park people to make a boulevard out of Jackson street to keep the south side trolley fellows from coming over into his yard.

Clark then asked the city railway man (Grinnell) if he cared and he said "No." After that the council said Clark could have these streets for his "string in the slot" cars, the city railway man got mad about it and paid a man at Springfield to sue Mr. Clark and his railroad and make him trouble. As Chicago's present mayor was on the bench at that time, he will doubtless remember the case.

Of course, when Clark got into trouble, he had to have a lawyer; he had Judd and others. Lawyers cost money. Having lawyers, Clark needed money; needing money, he went to New York to find an uncle, and while looking, met Wheeler (Albert G.) and the Love Traction Company. Wheeler had done a few things in the East, and after coming to Chicago, Wheeler met Hull (Perry A.) and after they had done a few things, the city railway bought the general electric, the road with its trolley wire in a slot. Today an old car rambles up and down a side street to hold down the franchise.

After this, Clark had less money, and having less and needing much, killed himself. The others having more, discovered that Chicago needed competition in its telephone service (witness, the birth of the Illinois Telephone and Telegraph Company) innocent babe, begot of Hull and Wheeler, to be sold when grown to the Chicago Telephone Company, or any other innocent, who came handy and had the price.

None of your overhead poles for them. Such conspicuous things attract too much lightning at wrong moments. Even the wires leading to the city hall and the city clerk's office were to be buried and out of sight. Things must be automatic, with not even a hello girl as a go-between. This modern method of construction prevented short circuits and rusted wires.

Where could they find a man, an engineer, one who especially understood the underground conditions leading

up to and adjacent to the city hall, some one to pull the wires through the conduits? A happy thought! George Jackson. George wasn't an engineer, that is, no one took the trouble to find out he wasn't. George always told the reporters he was, and as a matter of accommodation, they passed the good word along. The fellows that put money into George's digging machine found out he wasn't, but they didn't like to be teased. George used to lay brick, but the sewer business "aint what it used to was." Well, anyhow, Wheeler and Hull liked George, because George knew Larry McGann and Larry McGann knew Carter Harrison and Harrison knew Billy Loefler and John Ericson, and Ericson was working for Harrison, and all the bunch were working at the city hall and they all knew a lot of fellows who worked nights in the council. Judd was working for Wheeler and Erhorn and McGaffey were working for Loefler, and everybody knew who was next to who. Even some of the good fellows from the municipal voters' stamp mill started working.

1898 and 1900, and 1901—For quite a while Wheeler had just as much trouble as Clark getting the preliminary coin, but finally he and George landed a few friends, and that helped some. George managed to save a dollar here and there by picking up bosses others had fired and spreading the concrete a little thinner here and there.

About this time George met a man with a good idea about steel sheeting. George borrowed the idea, but forgot to mention it until after the patent office had granted George the patent. George started making the holes under the streets larger than the council said he could. There weren't any dents in the streets at that time and Larry McGann didn't notice anything. Somebody leaked and told Will-- Raffles Hearst, who prints all the latest news in colors, and he asked Larry how about it, and this kind of embarrassed Larry.

George said the wire cable reels would not go into the conduits unless the conduits were bigger. George had already enlarged a little bit to see if the reels would fit.

About this time George's concrete began to bag at the knees a little, and some fellows like Marshall Field and a few others with a piece of change or two, and so on, got scared about the shallow foundations of some of their old buildings along La Salle street and State street, and they told Harrison that he would have to tell McGann and Ericson to make George stop. Wheeler was always handy with an envelope with a sheet of stock and a prospectus in it, and finally peace was restored in the family. That's why people who know Mr. Field well, say the tunnels of the Illinois Tunnel Company, once the Illinois Telephone and Telegraph Company, now belong to him.

Well, George told the council he would have to make a bigger hole under the street. A lot of the council fellows were scared betwixt Field, Hearst, public sentiment, and their getting off place. They smiled boldly, split the difference and told George to make it just "a little, tiny bit bigger." Meanwhile the public printer did not set up the type of the official record of the city council of the city of Chicago in shape to meet the financial necessities of Wheeler. This defect was remedied by Erhorn through Judd at Wheeler's bidding.

Standing today at the bar of the courts of Illinois, on trial for forgery and unlawful manipulation of public records, Albert G. Wheeler, designer of the Illinois Telephone and Telegraph Company, later the Illinois Tunnel Company, and the Chicago Subway Company, pays his ill-gotten gains to noted lawyers to save him from the penitentiary, and boldly tells the buncoed public that he has done nothing wrong.

By means of corruption, graft, cheap concrete and fake engineering, and the forgery of public documents, the millions of dollars of value invested in the skyscrapers of Chicago are jeopardized. Her elevated loop structure, her sewers and her cable slots, and her foundations are settling over the illicit tunnels and they will continue to settle, and neither can George Jackson, hot air, compressed air, or any other kind of air stop them.

The taxpayers of the future will foot the bills for damages and litigation.

THE ARCHITECT AND CHICAGO SCHOOLS.

William Bryce Mundie.

For five years ending April 1, 1904, William Bryce Mundie served the Board of Education of the city of Chicago as architect, the knowledge acquired during this period enabling him to give correct views or phases bearing upon the subject, though in so large a city these views necessarily are confined to local conditions, and therefore in the present article refers mainly to the problem as presented from a local standpoint, first explains the formative construction of the governing body that deals with the architecture of Chicago city schools and with whom the architect himself must serve in the somewhat dual capacity of employee and adviser.

The Chicago board of education consists of 21 members, who are appointed by the mayor of the city for a term of three years each, seven retiring each year. They elect their own officers and the president appoints a committee, one of which, the committee on buildings and grounds, has entire control and supervision of the executive duties outside of educational and financial affairs.

The city council or board of aldermen has but little to do with school affairs, the educational matters being entirely under state laws, and the council has only veto power on the purchase of sites, and the appropriations for buildings and repairs; the initiative in all matters of this nature, however, lies within the powers of the board of education.

The board has its own architectural department, employing the architect on a salary basis. The architect, as well as his assistants, draughtsmen, superintendents, etc., are under civil service law and all are subject to examination, either promotional or original entrance examinations as the case may be decided by the civil service board. The department of repairs and permanent improvements is also under the direction of the architect, the whole comprising in all about 250 employes, and is one of the most complete organizations to be found anywhere.

It was not always a perfect organization, but the civil service law has gradually cleared the atmosphere and

CRANE MANUAL TRAINING SCHOOL, CHICAGO, ILL.

William Bryce Mundie, Architect

RESIDENCE OF M. LEO HARTMAN, GRAND BOULEVARD, CHICAGO, ILL.
Henry L. Ottenheimer, Architect

RESIDENCE OF C. D. SIMPSON, DALTON, PA. (Rear View)
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HALL AND DOORWAY IN RESIDENCE OF FREDERICK A. SCHMIDT, RADNOR, PA.

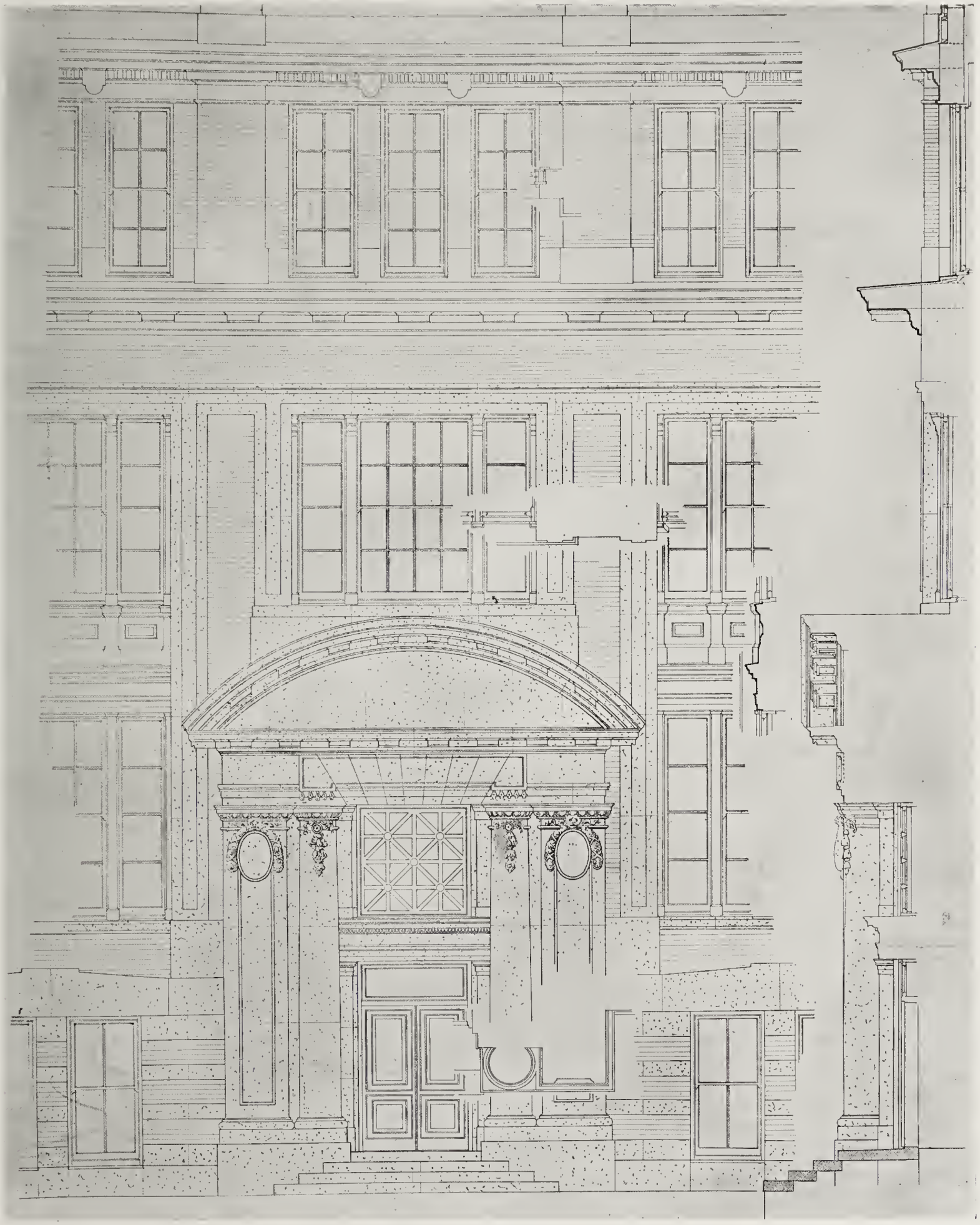
Charles Barton Keen, Architect, Philadelphia, Pa.

REAR VIEW

RESIDENCE OF FREDERICK A. SCHMIDT, RADNOR, PA.
Charles Barton Keen, Architect, Philadelphia, Pa.

TEACHERS COLLEGE—NORMAL PARK, CHICAGO, ILL.

William Bryce Mundie, Architect



DETAILS, TEACHERS COLLEGE

wiped out many of the ills of the old days of "patronage" and "political pull." For years political affiliations were of paramount importance and a little merit here and there was somewhat essential. Today merit rules and politics is outside of the department, but not so of the board of education. Political parties pay off their political debts by appointments; and questions of nationality, sectional denominations, capital and labor, in fact any pact or organization of vote getting power is given consideration for seats upon the board and here friction and faction bother the heads of the executive department.

For the past decade the board has been gradually leaning toward a betterment of municipal improvement and has come to a realization that in the public schools of our city there lies an opportunity to do something more than build huge square brick boxes full of window glass, with a gravel roof for a covering, and the name of some man of note in literature, science or education cut in a stone panel over the front entrance. The citizens have awakened to this fact also, and the strong current set in years ago is still keeping up its pace and makes demand upon its representatives to build more artistic and better built schools for the children of our city. These remarks apply generally to cities and towns of medium population. The city of Chicago spends annually about three million dollars for new buildings, repairs, and permanent improvements, etc. The cost to the board for the department is about seventy thousand dollars, this is exclusive of any office rental, insurance, etc. The salary of the architect, as fixed by the board, is eight thousand per annum. The architect heretofore has not been required to devote his entire time to this position, the rules saying that he must be in his office at least two hours per day and attend all meetings of the board and committees. This rule has since been changed, requiring him to devote his entire time to the duties of the office.

The foregoing is briefly the system in operation in Chicago, and is now a system with many advantages and some disadvantages to the taxpayer, but the advantages far outweigh the weak points in so large a system.

The most vital point involved in the whole system lies in the fitting ability to fill the position of the several members of the board, but political debts are not paid at all times with ability worth one hundred cents on the dollar. This system of course is not practicable in smaller cities and towns. It is in such places that we find the hurtful competition scramble among the local practitioners, or the political architect who is in line for the municipal work.

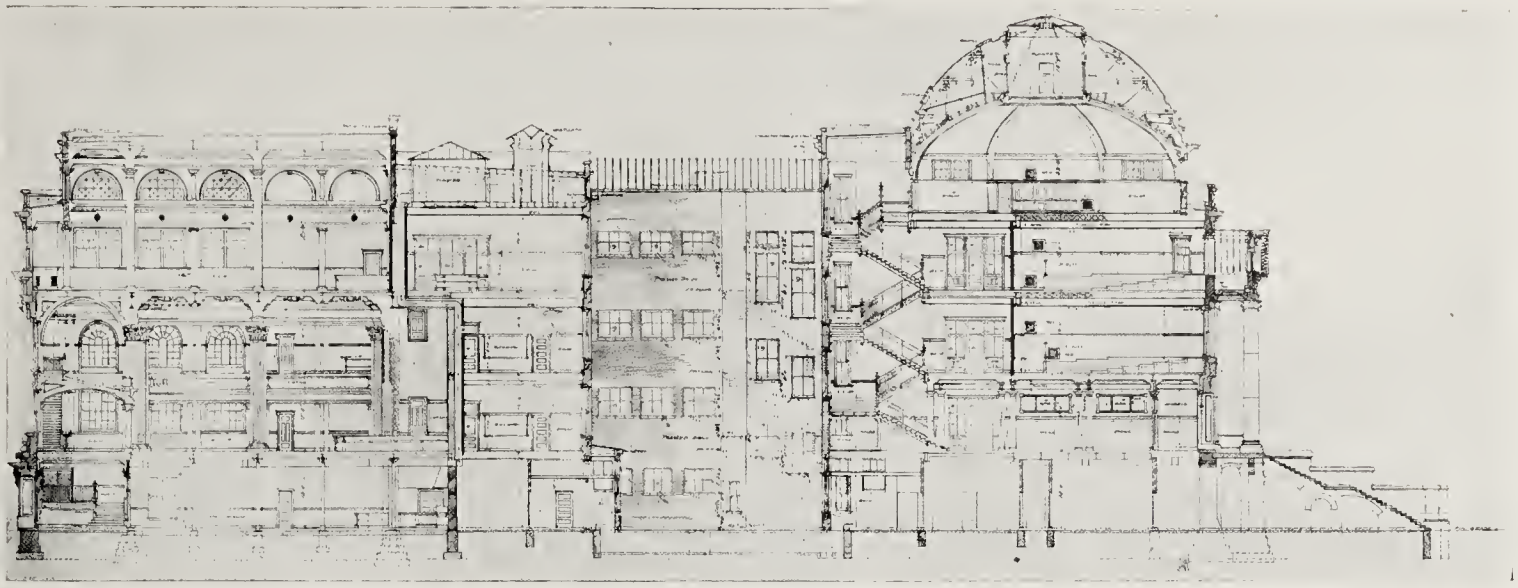
It has been Mr. Mundie's misfortune many times (according to a paper read by that architect before the American Institute of Architects, and not heretofore published, and from which these facts are obtained through the courtesy of the secretary, Mr. Glenn Brown), to be called upon as expert to decide the usual municipal schoolhouse competition, where all the talent of the town has struggled hard to immortalize itself for sometimes two per cent. The school trustees are all waiting for the report and in several cases in meeting assembled make the award as they please (over the expert's recommendation) to some favored son who has friends at court. It is useless to dwell upon the fact here that they would be better served by going to the best talent they have at hand and give out the work direct on a living commission at least. This condition exists more largely in the West than in the East, but it is with us in some form everywhere. The large cities can take good care of themselves and have a better understanding by reason of their greater experience—the more they build the better they build—but in the smaller cities and towns the trustees on school boards are not altogether to blame—the local architects with their petty jealousies are as much to blame, if not more so, for I have seen local trustees in small towns thoroughly disgusted with the profession in general by reason of the bickering among the home talent.

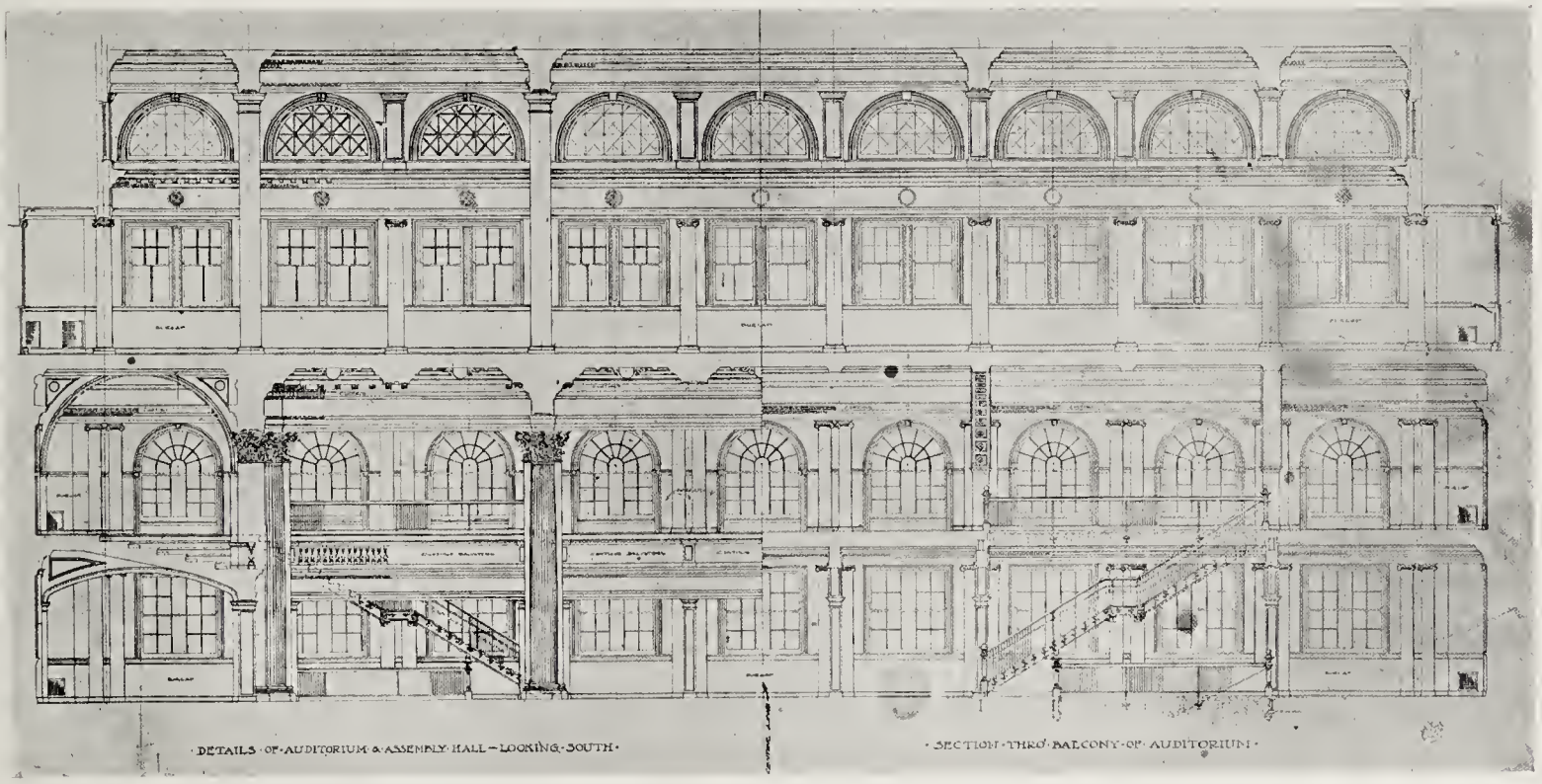
Mr. Mundie does not attempt to suggest a remedy for this condition. Local prejudice rules that "to home talent belongs the job," and "the competition" is the only rift in the clouds through which the trustee can see the least of his troubles, and he therefore states that the system in Chicago was beneficial for the best interests of the taxpayer and most serviceable to the board of education. First as to the new buildings:

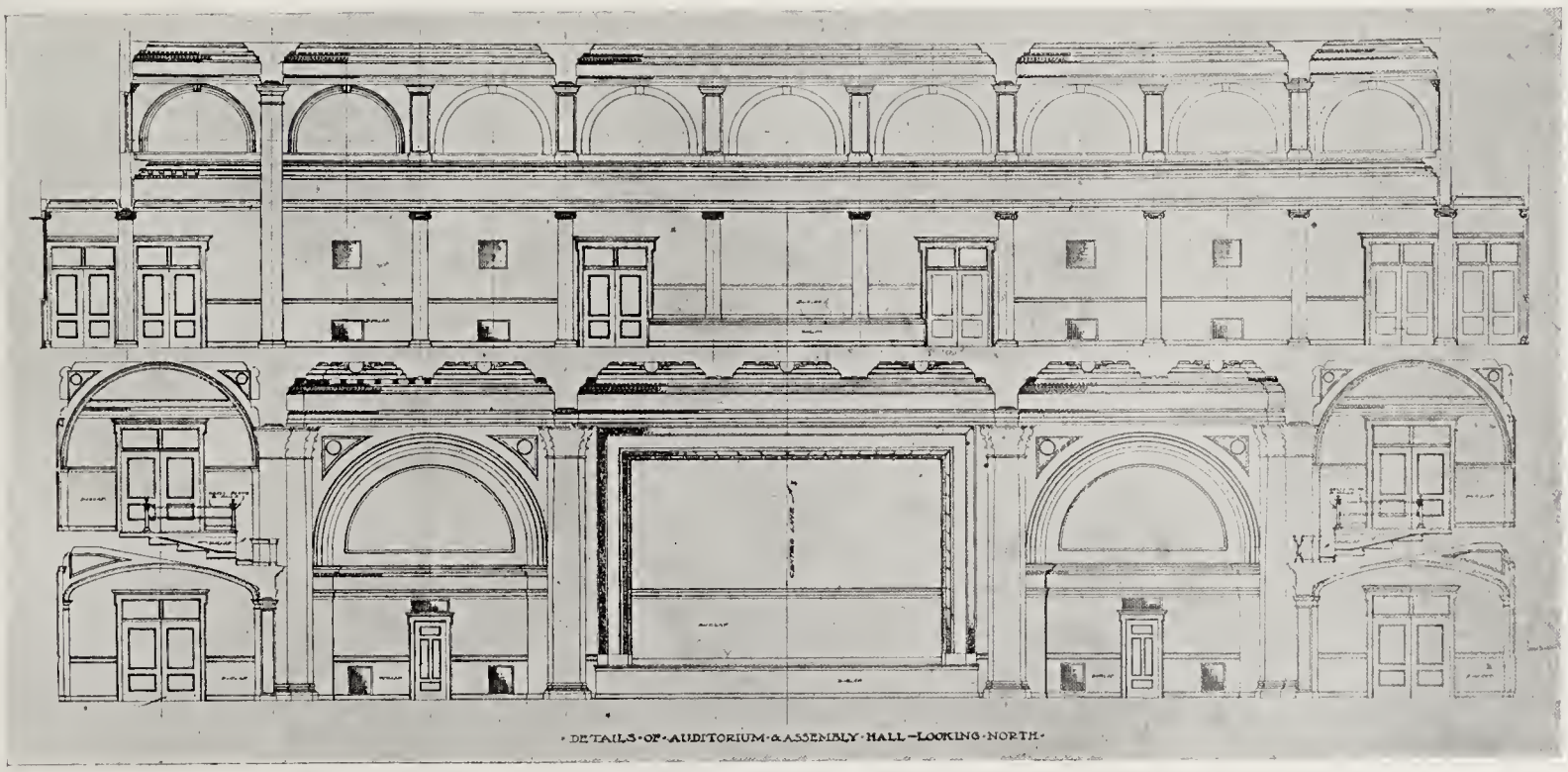
Site, location and character of the district wherein it is proposed to erect a building, governs mainly the size, educational requirements, and artistic limit suitable for the place. This is all partially settled for the architect by the educational force and comes to the architect through the committee as an order and from that time on it is practically left with him to plan, design and build the building. So it is with additions to existing schools, new high schools, technical schools, and a large normal school now nearly completed for the making (so to speak) of teachers for the school system.

These orders come fast; sometimes several at once and six or seven large buildings will be in the draughting room at a time, some in preliminary stages, while others are passing out for bids and contracts. The schools are not all alike, or even nearly so, as many imagine, although much of the detail is standard.

The department has its bureau of repairs, where the school property is maintained in a systematic state of good repair. This comprises a large establishment including interior finish, mill, hardware, glass and paint departments; here with a force of carpenters, painters, laborers, teamsters, etc., the repairs are kept up; all furniture for schools, except iron castings, are made and stock of tables, desks, bookcases, apparatus, etc., kept on hand. When it is considered that over three hundred large buildings, together with about a hundred additional small buildings and branch schools scattered over a large area about twenty miles north and south and eight miles east and west, included in the supervision of the school architect of Chicago, some idea of what is essential can be comprehended. Then the amount of plant, boilers, engines, blowers, pumps, machinery, etc., to be kept in working order and repair, besides the laying out of all heating and ventilating systems for new buildings, it can readily be







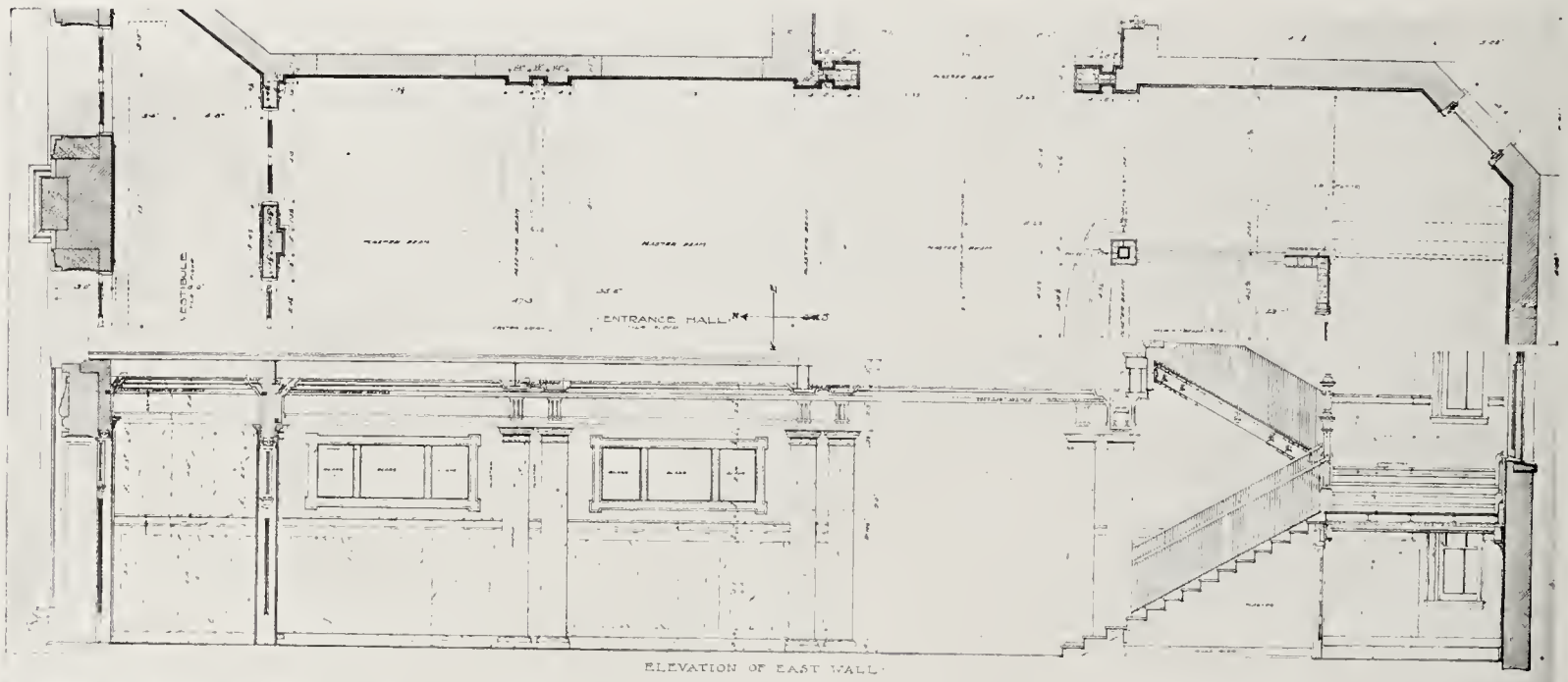
DETAILS AND SECTION, TEACHERS COLLEGE

seen that an organized force is an absolute necessity and also a great economy in quick service and cash outlay.

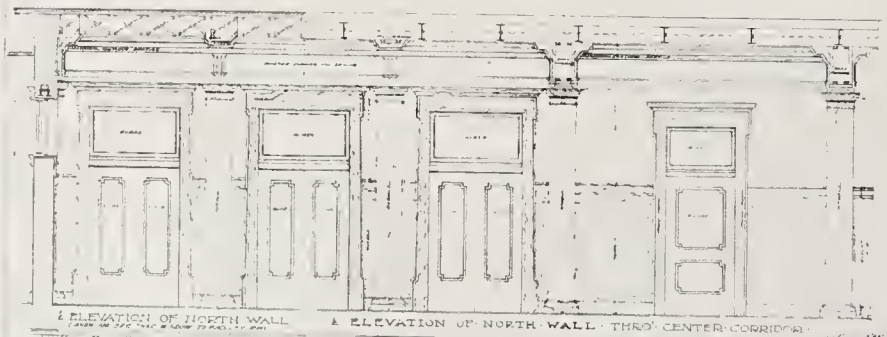
On the other hand, is the profession of architect, so far as new buildings is concerned, treated fairly and properly? Would it not be better for the new buildings to be given out as in private practice? This question is often heard and advanced. Would the city not get the benefit of new ideas, both in planning and design? Mr. Mundie thought so before he received his appointment, but after five years' experience, and qualified perhaps to take hold of such buildings as might be offered him, he says most decidedly, no. The system is too large and detail management increasing fast. With eight or ten separate architects working in different parts of the city, all on different lines, and of differences, perhaps at variance, with the educational department, or the committee, he is convinced the best results would not be obtained in this way, either for the taxpayers or the profession.

If at least three members of the board were competent builders and well versed in the proper requirements to be appointed as a sub-building committee and work entirely as an outside commission and do nothing else but this work, reporting back to the whole committee or the board direct, there might be a way in which at least a trial could be given to the outside appointment of architects for new buildings, but this would not do away with the necessity of a regular department with an architect at the head of it, to take care of the alterations, additions, repairs, etc. Mr. Mundie favors as the most practical plan for Chicago or any similar city the apointment outright of an architect of reputation for a period of five years, give him full power and responsibility and then demand of him his best work. In five years he can accomplish something. Should his ability be undoubted, then continue for a like period of time.

He also believes a commission or a sub-committee of a board of education, say three or five, should be appointed to work with an architect, and let this body be men of practical training, either architects or contracting builders, but men of knowledge, for a good architect would rather have for a client one who knows than one who is dependent upon him, especially when the money involved is acquired by taxation and the expenditures of such should be more guarded than that of any private client.

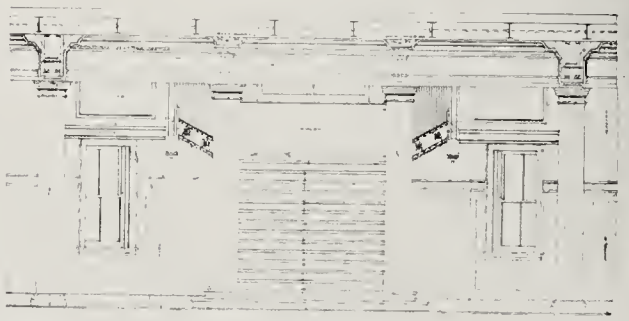


ELEVATION OF EAST WALL

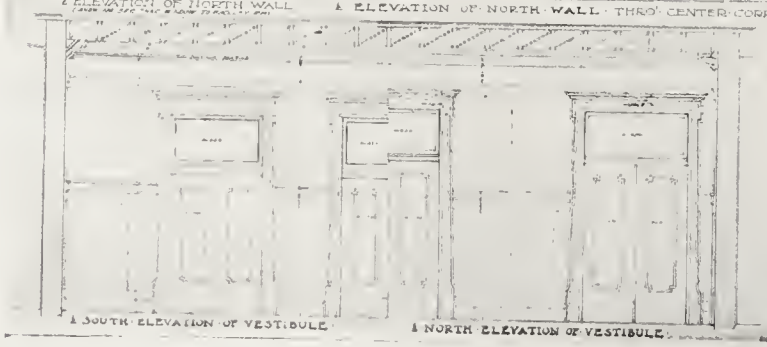


ELEVATION OF NORTH WALL

ELEVATION OF NORTH WALL THRO' CENTER CORRIDOR



ELEVATION OF SOUTH WALL



SOUTH ELEVATION OF VESTIBULE

NORTH ELEVATION OF VESTIBULE

DETAILS OF ENTRANCE HALL AND VESTIBULE

CHICAGO TEACHERS' COLLEGE
NORMAL PARK, CHICAGO
63RD STREET AND STEWART AVE.
W. B. MUNDIE, ARCHITECT, BOARD OF EDUCATION.

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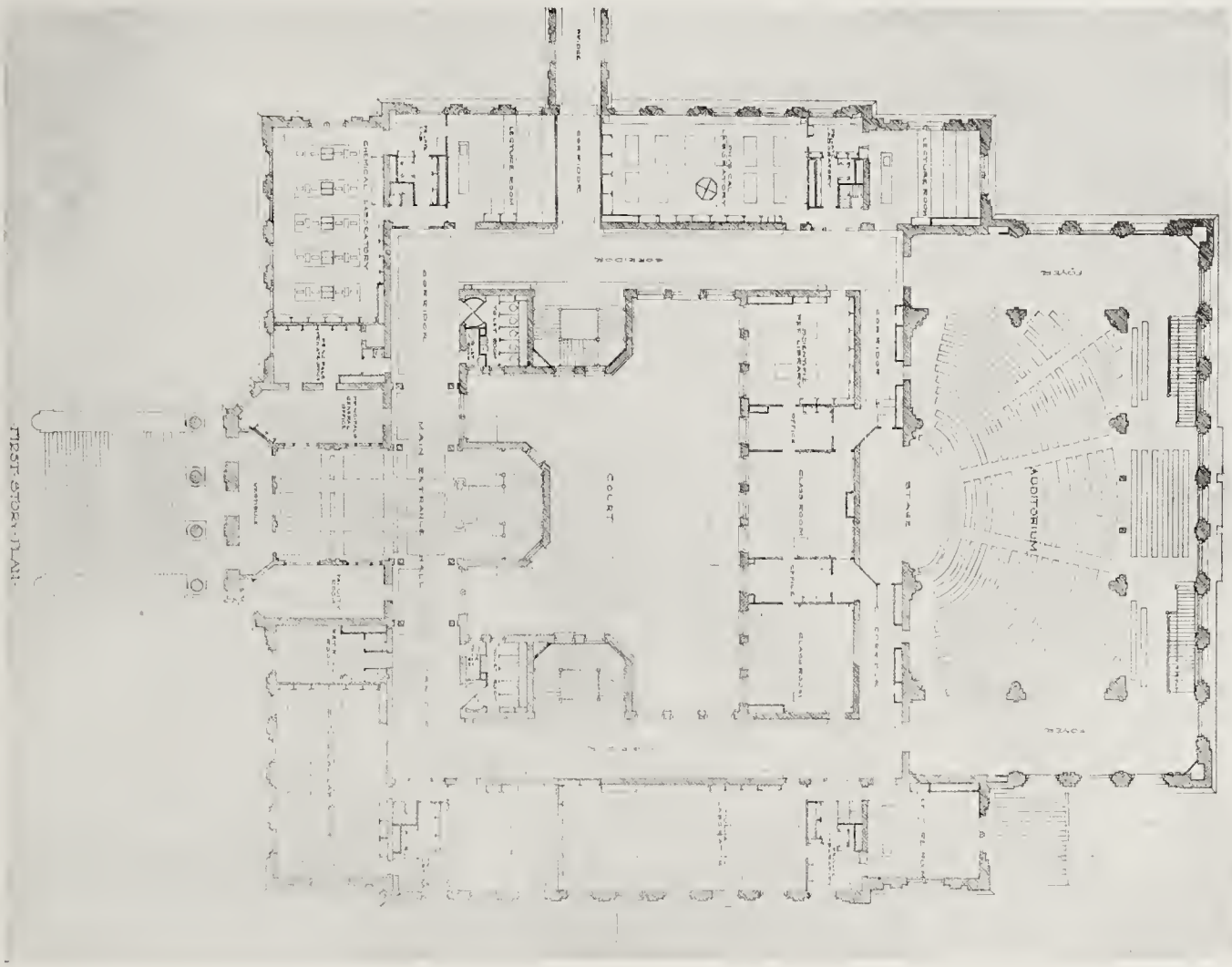


TEACHERS COLLEGE, FIRST STORY PLAN

TEACHERS COLLEGE, SECOND STORY PLAN

TYPICAL CHICAGO SCHOOL HEATING AND VENTILATING PLANT.

In Chicago the warming and ventilating of school buildings are combined, air being driven hot from central distributing points, while in New York they are independent, the air being driven tempered from the distributing points; in the latter case direct radiation in the various rooms is depended on for heating, while in Chicago there is no radiation whatever in the rooms.

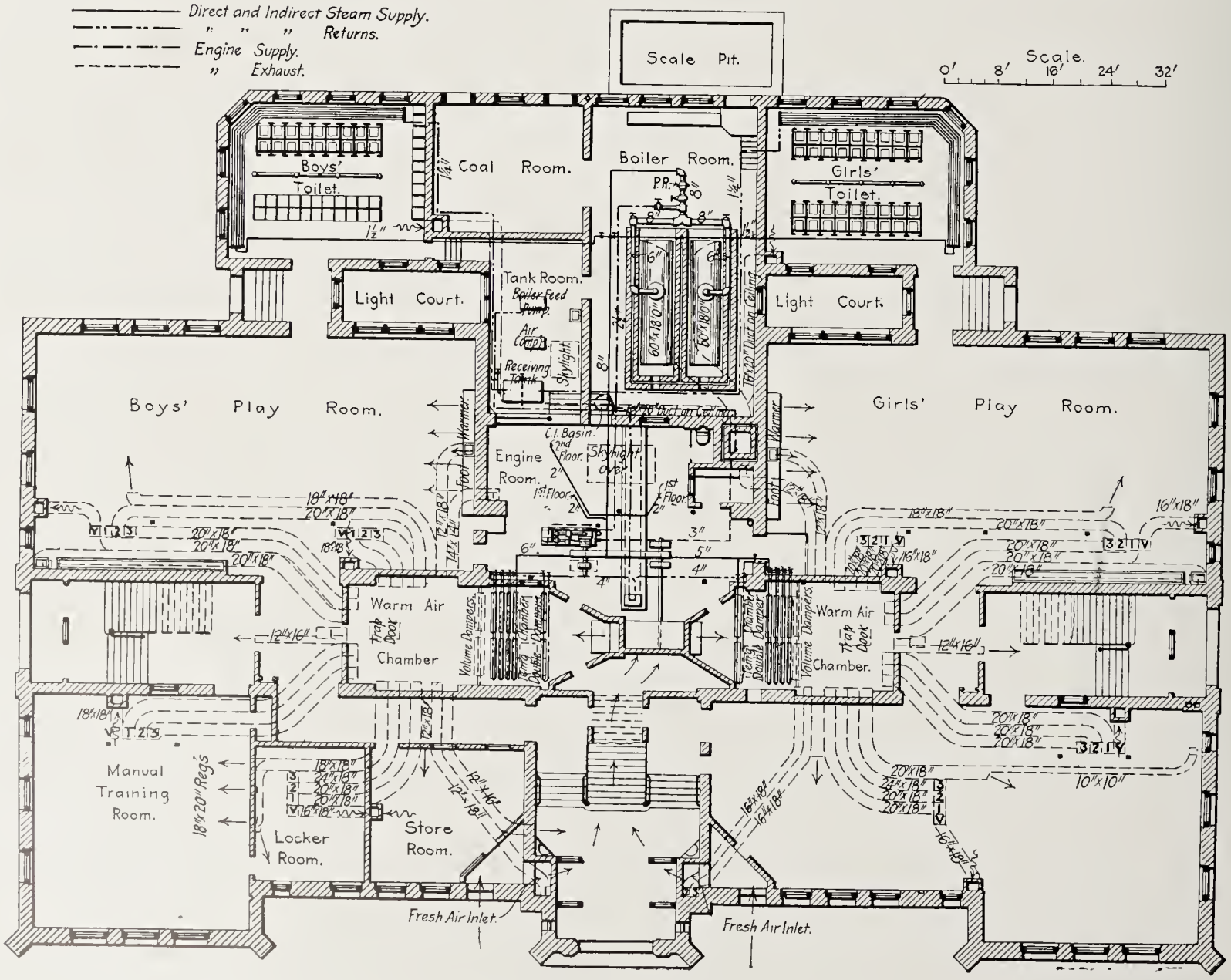
The schoolhouses are erected under the design and supervision of an organization not greatly dissimilar to that controlling the construction of New York schools. The buildings are planned by an architectural department of which Mr. William B. Mundie is the architect.* But in addition to heating and ventilation all matters pertaining to plumbing, gas fitting and sewerage are also under the direction of the chief engineer of the board, Mr. Thomas J. Waters. The contract for the steam heating is let separately from that for the ventilation.

The schoolhouses selected for this description in general heating and ventilating plan is similar to all others recently designed by Mr. Mundie.

Air is distributed throughout the building on the plenum system. It is received by a blower in the center of the basement, and discharged in opposite directions through both tempering and heating coils located immediately beyond; and the individual room supplies are carried from the warm-air plenum chamber to the various groups of flues mentioned. This system thus makes it possible to obstruct little head-room, all ducts being comparatively small. Mr. Waters says that the single-duct system in connection with the central distributing chamber in which all heating surface it located was originally introduced by him in the Chicago schools in 1891. The present improved system was perfected in 1894, since which time, he states, the cost of heating and ventilating apparatus is about 45 per cent less than an apparatus where direct and indirect radiation is combined.

The air is admitted, as indicated, through a window on each side of the main entrance, and passes through a fresh-air room to the space under the main entrance floor; there the two supplies meet and continue (under the short flight of stairs rising to the first floor) to a central point in the basement where is situated a single-inlet double-

*Since the above was written Mr. Mundie, after five years of service, has resigned and Dwight Heald Perkins is now school architect. (Ed.)



TYPICAL VENTILATING AND HEATING PLAN

discharge blower 54 inches wide, with a fan wheel 9 feet in diameter. The blower is run at a speed of 150 revolutions per minute, belt driven from a 9 x 14-inch Atlas engine, and has a capacity under an assumed air pressure of ¾ ounce of about 25,000 cubic feet from each outlet per minute. Each outlet is provided, however, with a plate, so that any desired quantity of the delivery up to 50 per cent may be cut off.

Immediately beyond the discharge outlet of each blower the cross-section of the air flow increases to a width of over 14 feet, and the height of the basement story, in which the various heating coils are placed. These are in reality one-pipe radiators consisting of vertical 1-inch pipes, staggered in four rows in a cast-iron base and connected two and two at the top. Each section contains 126 pipes, and these being 6 feet high present a total heating surface of 160 square feet.

Two of these radiators are used in each case for tempering, placed end to end across the air passage, presenting a total of 520 square feet of warming surface, four pipes deep. They are supported on I-beams, as are all of the indirect radiators, leaving a space 3½ feet high for the by-pass of air underneath, and a continuous floor or platform is built separating the cold-air passage from that above. Immediately beyond the tempering coils, however, the two passages are connected by double dampers, so that a portion of the tempered air may also travel through the cold-air passage and by-pass the main heaters lying next beyond.

Each heating chamber has a total heating surface of 2,080 square feet, consisting of eight radiators, four radiators deep—and, therefore, 16 pipes deep—in the direction of the air flow. The cold-air passage is continued under these, but at this point volume dampers are pivoted in a galvanized iron partition extending across the space and from the base of the radiators to the floor. The heated air from the stack, which is calculated to average about 70 degrees Fahrenheit in temperature, is now in a warm-air plenum chamber, from which connection is made directly with ducts for the various rooms. The floor, or platform, grades upward toward the outgoing ducts at the ceiling. About the center of the room, not shown in the drawing, is a deflector, consisting of two galvanized iron screens, 5 feet wide, reaching from platform to ceiling and joined to form a V toward the heater. Each wing of this deflector is adjustable, so that it may be set at any angle; its chief purpose is to break up, without offering too much resistance, the various currents of air at different temperatures which are apt to pass through without mixing.

The air is then carried from the plenum chamber through the small blast ducts to vertical flues, and thence to the room inlets, each room supply independent of the others from the plenum chamber on, as already mentioned. Each duct is double for a short distance at its beginning, the upper part connecting with the heated-air space, and the lower with the cold-air by-pass underneath, the duct in the latter case feeding a group of the blast ducts, to which it is equal in cross-section area. For controlling the temperature of the air in each blast duct double dampers are installed, under the control of thermostats. Besides these, each duct is also provided with a damper to regulate the volume of air to each room. Each system of ducts is comparatively short, and feeds four groups of flues corresponding to the four rooms per each half floor —all flues being thus in inside walls with the exception of a few small ones which run up chases in the outside walls. In all cases the galvanized iron work is also carried up the flues, that in the outside walls being made double with a 1-inch air space enclosed for insulation, in addition to hollow tile built around it.

The inlet into the rooms is an interesting feature of the plant, and is shown in an accompanying detail drawing. The air is delivered about 6 feet above the floor level, but the area of the opening is such that a considerable reduction of the velocity of the incoming air is effected. At about the level of the floor the supply flue expands, as shown, into a hopper-like end and the air issues through a ¾-inch mesh screen of No. 14 wire, 9 inches wide and 8 feet 10 inches long. The air finally enters the room through an opening of the same length and 20 inches high. Among the requirements of the apparatus it was specified that the supply should amount to 1,800 cubic feet of air per hour per pupil, assuming an average occupancy of 54 pupils per room. This is equivalent to 1,620 cubic feet per minute, which on the following gross areas would give the following average velocities at the points under consideration: Area at side wall 14¾ square feet; velocity, 1.83 feet per second; area at wire screen, 6.63 square feet, velocity, 4 feet per second; area of flue, 18 x 20 inches, velocity, 10.8 feet per second.

The escape of air from the rooms is in general through side registers at the floor line in the wardrobes, this method providing for warming these rooms as well. The area of the outlet is 20 x 26 inches, opening into an 18 x 20-inch flue, and the more or less vitiated air rises to the attic, where a system of exit ducts leads to a roof ventilator for each half of the building. The ducts slope upward with the roof, and the main ducts passing through the roof are of two-thirds the combined area of the branches feeding them. A balanced damper is provided each main exit chamber in the attic and is actuated automatically, so that when the air pressure is removed it closes and prevents backward flow into the building. This exhaust system is designed to provide for the discharge of about 75 per cent of the inflow from the blower into the building, the rest of the air escaping through the numerous inevitable points of egress possessed by every building, besides the open doors.

The ventilation of the toilet rooms in the basement and the one or two small ones in the floors above is effected through the space between the two shells which form the smokestack, thus utilizing the aspirating effect of the warm brickwork. The inner shell stops above the third story, and the air from the enclosed space then mingles with the gasses from the boilers. The shells are 3 inches apart, and the cross-sectional area for the flow of the air is about 700 square inches.

The steam end of the plant is practically all confined to the central part of the basement, there being but 560 square feet of direct radiation in the building, comprised in three radiators in the corridors, which it may be mentioned are connected on the one-pipe system, and 260 square feet in ceiling coils in the basement. Besides the heating apparatus, steam is furnished for the blower engine. There are two boilers, of the horizontal tubular type, 60 inches in diameter and 18 feet long, and containing 48 4-inch tubes. A pressure of 45 pounds is carried and, as shown, each boiler supplies a 6-inch pipe leading from the steam dome to an 8-inch header. From this a single connection is taken, with a 2½-inch side outlet for the engine, and an 8-inch connection with a Kieley pressure-reducing valve admitting low-pressure live steam into an 8-inch heating main.

The heating main runs forward to the heating chambers, supplying branches to the ceiling coils and the risers for the direct radiators. At the heating chambers it enters the top of a 6-inch pipe, which extends in opposite directions to the two sets of indirect radiators. This is shown in the accompanying photograph, taken before the chambers were enclosed in the brick walls. At each end the 6-inch pipe supplies five 3½-inch connections to the radiators, one to the pair in the tempering chambers and the remaining four to the four pairs in the heating chamber, each section thus consisting of two radiators reaching across the chamber and comprising 520 square feet. The steam connection to both radiators of each section are made with the pipe as it passes underneath them, a 3-inch inlet being made in the center of the radiator base.

The condensation from the radiators is taken out at each end through a 1½-inch drip, but the pitch of the radiator base is toward the central hole and the horizontal steam supply pipe connecting with it also drained, thus providing for the water forming the steam mains outside of the chamber walls. The drips are joined to a 2½-inch return, with valves outside, as shown; but an interesting feature is a secondary connection made with the returns, consisting of a 1-inch pipe being taken from each return inside of the return valve, so that the water from any section may be emptied into a catchbasin.

The main return drops into a trench, in which it pitches about 1 inch in 16 feet to a receiving tank 36 inches in diameter and 6 feet long, located in a tank-room alongside the boiler room. The water thus returns by gravity to this point, and is then delivered to the boilers by a Marsh pump 7 x 4 x 8 inches in cylinder dimensions, near by. The tank is provided with a coil of 1½-inch pipe aggregating 30 square feet, so that either the exhaust of the pump or the live steam may be utilized for heating the feed-water. The exhaust of the blower engine is used in the heating system, a grease extractor being intercepted between the engine and heating main and a Kieley back-pressure valve, in the line to the outboard exhaust. All the exhaust, it may be added, may pass upward through the boiler smokestack, the exhause pipe extending upward about 6 inches above top of smokestack in one corner. All exposed steam piping was wrapped with asbestos-lined corrugated wool-felt sectional covering, with cloth jacket.

The escape of air from the indirect radiators is through air vent openings near the top and at each end of the radiator. One-quarter-inch pipes from these are cross-connected to a 1½-inch pipe, and the various ½-inch pipes are connected to a ¾-inch header; this is then connected to a drip pipe outside the chamber wall, so that the pipes may be opened to the atmosphere, drained directly to the catch-basin or acted upon by the suction of the steam pump.

Among the minor details of itnerest may be mentioned the following: A wrought-iron pan of 3-16-inch iron is placed under the blower, coated with asphaltum on both sides. A space of 1 inch between the ceiling and the top of the brick walls of the tempering and warm-air chambers are closed with strips of galvanized iron and filled with mineral wool. Both the by-pass and volume dampers are made of two thicknesses of No. 22 galvanized iron, with 1½ inches of air space between and rubber strips all around the outside edges. All doors opening into these air chambers, it may be added, are fitted with weather strips and galvanized iron strips extend from the door frames into the brickwork to render them air-tight.

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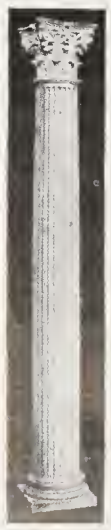

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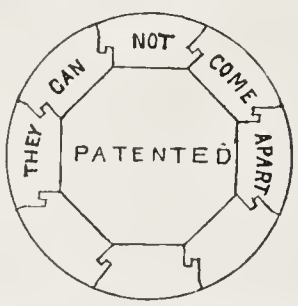
Architecturally



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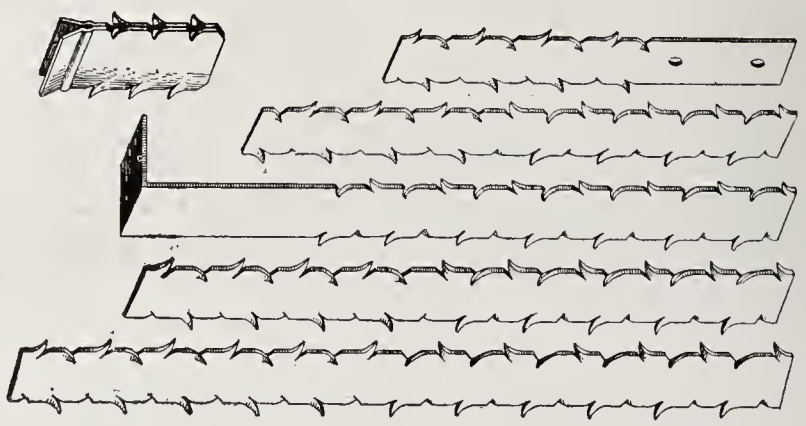

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This Tie does not depend on the mortar for a bond by reason of the projecting teeth, which becomes imbedded in the brick, forming a band of its own, and is the most practical, economical, efficient Tie for all purposes. Saves material and labor; making the strongest wall. *Specified by Architects.* LONG DISTANCE 'PHONE GRANT 2972.

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