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ARCHITECTURE

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DECORATION

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CONSTRUCTION

BOSTON MASS.

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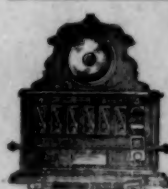
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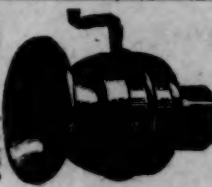
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JULY 27, 1895.



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AN interesting piece of foundation-work has been going on in New York, at the corner of Exchange Place and Broad Street, where a sixteen-story office-building is to be erected for the John Taylor Johnston estate. The soil at this point is a stiff clay, mixed with gravel and boulders, and resting on rock, at a distance of about forty feet from the surface. As usual in New York, where such lofty buildings are to be erected in the lower part of the town, caisson foundations are used, but the method of sinking the caissons is novel. Instead of forcing air into them, so that the earth can be excavated under them, the work of sinking them is performed mainly by water-jets, directed in a very ingenious manner. Around the lower edge of the caissons, which are of the usual form, and proportioned in size to the weight which is to come upon them, are fixed hollow castings, each of which is pierced with a row of holes, about one-eighth of an inch in diameter. Pipes, descending on the outside of the caisson, enter the castings, and convey to them water, at a pressure of a hundred pounds or more to the square inch. The water issues in jets from the holes in the castings, washing away the earth from under the edge of the caisson. Around the lower edge of a caisson of moderate size there are something like a thousand of these jets, and their combined effect loosens the earth so effectually as to allow the caisson to sink rapidly. The movement is hastened by loading the top with iron weights, and by exhausting the air from the interior; and it is said that a caisson can be sunk forty feet in about a day, including all the delays incident to testing and rectifying the movement, and riveting together the three sections of which each caisson is made. As might be expected, the sections do not sink with perfect accuracy, and the work must be stopped at intervals to apply gauges, and modify the current through the water-jets, until the necessary correction is made. In most cases, this is all the rectification required, but when the descending edge of the caisson meets a large boulder, it is sometimes necessary to apply a special treatment, which consists in directing a jet of water upon the earth below the boulder, and a little outside of it. This jet soon excavates a hole, into which the boulder falls by its own weight, out of the way of the descending caisson. After the caissons are sunk to the rock, they are excavated in

the usual manner, the surface of the rock trimmed and levelled if necessary, and concrete and masonry put in, filling them to the top. As soon as the concrete has set, the foundation is ready to receive the superstructure. As usual with modern caisson foundations, the steel cylinder is intended to serve only as a form in which to mould the concrete pier, which is the real support of the building, so that the metal may corrode away at any time, after the concrete has set, without diminishing in the least the security of the structure. Compared with the older method of making caisson foundations, the new one, which is the property of the Hydraulic Construction Company, has great advantages in point of rapidity, the sinking of a caisson being a matter of a few hours, instead of several weeks.

THE question of repairing the damage done by last year's earthquake to the antique ruins in Athens has come up again. In England, Mr. Somers Clarke, whether from actual examination on the spot, or by study of photographs, we cannot say, is convinced that the Parthenon is in imminent danger of falling, or, at least, of losing some of the portions now standing, and urges his views on the readers of the *Builder*; while, in Germany, the feeling seems to be that nothing is needed but watchfulness, and some unimportant work of consolidation. Herr Drumm, a German architect, who has recently examined carefully all the antique remains in Athens, takes advantage of the present interest in the matter to ask for repairs to some of the smaller structures, which do not appeal to the public so much as the Parthenon does, but which the artistic world would be very sorry to have go to decay. Speaking of the Propylæa, he says that the ruins are in a satisfactory condition, nothing being needed but to root out the grass from the joints, and cover the pavements with some impervious material, so that the water may be drained off, without soaking into the masonry. The temple of Niké Apteros, which was restored thirty years ago, is in a tolerably satisfactory condition, but the upper portion should be protected against rain-water. It will be remembered that Mr. Stillman conjectures that the celebrated statue known as the Venus of Milo may have been the original statue of Niké Apteros (the Wingless Victory), from this temple on the Athenian Acropolis, which is supposed to have been carried away for safe-keeping, and may have been buried on the island of Melos, where it was found. Such objects undergo many vicissitudes, and this very statue was buried again in Paris, by order of the authorities of the Louvre, during the War of 1870-1871, to prevent the Germans from carrying it off; so that Mr. Stillman's guess may be well founded. If so, it is all the more desirable to have the little temple from which it came kept in good repair, for the restoration of the idol to its own house, which would be possible, or even the erection in the sanctuary of a cast of the original image, would be a matter of extraordinary interest, as showing how the Greeks adapted, not only their sculpture to its surroundings, but the surroundings to the sculpture.

LA SEMAINE DU BATIMENT has established a department of "Notes Techniques," consisting of recipes and information of all sorts, which bids fair to be extremely useful to architects, who are expected to be able to answer every question that a housekeeper can think of asking. One of its recent notes of this sort tells us how to cure the smell of fresh paint. Every one knows that a house which has just been painted, particularly if much turpentine has been used in the work, is nearly uninhabitable for a week or two afterward. If the windows can be opened, the smell blows away after a time, but *La Semaine's* plan is much simpler. Instead of opening the windows, they are kept closed, and, for each newly-painted room, about four ounces of ordinary sulphuric acid is taken, divided into two parts, and each part poured into a saucer. The saucers are then placed at opposite ends of the room to be deodorized, and the doors closed. In a few hours, the acid will have absorbed and destroyed the vapor from the paint, and, after a thorough airing, the room will be quite habitable. It is understood that we do not warrant the success of this plan, the chemistry of which is to us decidedly obscure; but *La Semaine* is good authority on all such matters, and we can at least conscientiously recommend a trial of it.

ANOTHER recipe which we find among *La Semaine's* "Notes Techniques," is one for restoring the color of faded curtains or other fabrics, particularly those with a plush surface. According to this, all that is necessary is to sponge the material with chloroform. This substance has long been used by mammas with enterprising sons, to remove the printers' ink, wheel-grease, berry-juice and other mementoes of their exploits which the youths bring home on their clothes; but its employment to revive faded colors is to us a novelty. It is hardly necessary to say that the chloroform should be used with great caution. Its vapor forms with air an explosive mixture, so that the work should never be done near a fire or light, while the physiological effect of inhaling it is such that it could be used in this way in a closed room only at the risk of producing sudden unconsciousness, if no worse effect.

STUDENTS of architecture in search of a new motif for a design may perhaps get a hint from an invention described in *Le Monde Moderne*. It appears that French people hold about the same ethical notions in regard to eggs that certain other people do in regard to umbrellas; and, as we are informed, the cook's relatives, the market-man's boy, the laundress's messenger, and other people of that sort, on their visits to the château, usually manage to pass through the "basse-cour," and to slip into their pockets such new-laid eggs as the poultry, to whom the *basse-cour* is devoted, may have left in sight. As *Le Monde Moderne* remarks, with truth, the housekeeper cannot be always on the watch to snatch up the eggs as soon as they are laid, and put them beyond the reach of marauders; and yet it is annoying, to say the least, to have one's harvest appropriated by other people. To meet this difficulty, the editor proposes that the *basse-cour* should be fitted up with nests, furnished with inviting-looking poles for perching, and supplied with the necessary number of glass eggs, securely fastened to the bottom of the nest, which slopes backward, to an outlet, consisting of a narrow slit. When an egg is laid, it is supposed to slide backward on this inclined plane, and drop through the slit, falling on a bed of cotton-wool. This bed is, however, inclined forward, so that, after reposing for an instant on the cotton, the egg resumes its journey down the second bed, from which it drops through another slit into a locked drawer, the key of which is retained by the housekeeper. By this means, as *Le Monde Moderne* thinks, all the eggs would be preserved for the owner, and a burden of guilt would be removed from the souls of the pilfering visitors. Not being expert in poultry matters, we will make no criticism on this device, as a means of increasing the returns from an investment in hens, unless to observe that it seems to assume that hens lay eggs only when they are asleep, which, if we are correctly informed, is not the case. This question, however, has nothing to do with the excellence of the artistic suggestion contained in it, which we commend to the attention of our readers. Briefly, the combination consists of an enclosure, containing a horizontal pole, with suitable access for the hens, from below, openings above, to admit the sunshine which is known to be so necessary to gallinaceous health, and drawers beneath. Obviously, much fancy may be exercised in the choice of shape and position for windows and entrances; the level of the perch might with advantage be "accused" on the exterior by an enriched band; and the locksmith's work admits of great richness; so that an elevation of the structure, diversified with portraits of its occupants, and rendered in color, might be a charming object.

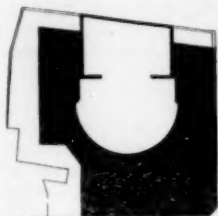
IN connection with the rather overdone international celebration of the opening of the North Sea Canal, it may be interesting to know that, according to the *Deutsche Bauzeitung*, the whole affair was the outcome of private initiative. Of course, there have been for centuries successive projects for making a navigable waterway between the North Sea and the Baltic, and, in 1785, the Danish Government actually completed what is known as the Eider Canal, between the ports of Tönning, on the North Sea, and Kiel, on the Baltic. This canal was formed mainly by dredging and embanking the river Eider, and cutting a connection from its upper waters to the Kiel Fiord. It would only admit small vessels, but was of considerable commercial value, some four thousand craft per annum passing through it, on an average, until its eastern end was incorporated in the new canal. By the conquest from Denmark of the provinces of Schleswig and Holstein, the canal district fell into the hands of the Germans, and many

attempts were made to induce the German Government to do something toward forming a ship-canal, not only for the commercial, but the military advantage of the new Empire. The Government, however, turned a deaf ear to these appeals, and, although some plans were made, under Government permission, nothing of serious importance was due until a Hamburg merchant, Herr Dahlström, took it into his head that such a canal would pay as a private enterprise. He commissioned, accordingly, the engineer Boden to examine the ground and draw up a definite scheme. Boden carried out his work thoroughly, and he and Dahlström were engaged in making calculations as to cost, probable income, and so on, as a basis for the financial plan, when the Imperial Government intervened, voted funds for commencing the work as a public enterprise, and practically adopted Boden's plan as a basis for the scheme which was finally evolved by the Government engineers. It was, perhaps, fortunate for Herr Dahlström that the Government took the enterprise out of his hands, for the cost of the canal, as completed, has been thirty-nine million dollars, and it is very doubtful whether the tolls would ever pay interest on that sum as a commercial undertaking. As a military convenience, however, it will probably be worth to Germany all that it has cost, even if the tolls from merchant vessels should not pay more than the expense of maintenance.

LA REVUE INDUSTRIELLE contains a sensible article on the recent advance in the price of petroleum, and the reasons for it. That the advance in price was made necessary by the diminishing yield of the oil-wells, it does not believe. Neither in the United States nor in Russia do statistics show any very serious diminution in production. It is true that, in 1891, more than fifty-four million barrels of oil were taken from the American wells, and in 1894, only about forty-seven million, but in 1890 the production was only forty-five million, and the statistics of the average price of oil point rather to a diminution in production for the sake of raising the price than to a decrease in the natural supply. Comparing the figures of the exportation of oil for the past two years, we find some singular indications. While the quantity of illuminating oil exported from the United States in March, 1895, was about forty-five million gallons, or nearly one-fifth less than in March, 1895, the exportation of naphtha nearly doubled, that of lubricating oil increased nearly one-half, and that of residues increased from sixteen hundred gallons to about forty-seven thousand. These facts seem to *La Revue Industrielle* to indicate some sort of understanding between the American and Russian producers, by which, while a part of the American exportation of illuminating oil is withdrawn, the balance is made up by an increased sale abroad of naphtha and lubricating oil. As the producers obtained a much larger price in this country for their illuminating oil than they did in 1894, they were probably quite contented to lose a part of their European market. It is, however, curious to note that America has exported, as a rule, about one-fourth of its production of illuminating oil. Supposing one-fifth of this to have been kept at home last year, owing to the circumstances which we are trying to investigate, as was in the case in the sample month of March, 1895, the quantity retained would not only have increased the home supply to the figures of 1893, but a million and a half barrels beyond; so that, roughly speaking, thirty-eight million barrels were sold at home in 1894, at an average price of eighty-four cents a barrel, while in 1893, only thirty-six and one-half million barrels were sold, at an average price of sixty-four cents. It is hardly necessary to point out the enormous profit involved in the arrangement, supposing that there was such an arrangement, by which the market could be so manipulated. That the producers on both sides of the ocean have long been desirous of coming to an understanding is well known, but an insurmountable obstacle has hitherto been found in the dissensions of the Russian producers, who have carried on a savage competition among themselves, the price of crude oil varying in 1893 from 1.40 francs to 4.36 francs per ton, delivered at Baku. Naturally, no agreement could be reached by the American producers with combatants of this sort, and it was not until last year, when the Rothschilds and others are said to have acquired an interest in the Russian wells, that matters were in condition for an arrangement. Of course, no contract is known to have been made, and probably none would be avowed; but that excessive competition in producing and selling has been checked by some sort of understanding is a good deal more likely than that the oil-wells are beginning to run dry.

THEATRES.¹—XVII.

MANCHESTER PALACE OF VARIETIES.



Plan of the Manchester Palace of Varieties.

MANCHESTER has one of the largest and finest Theatres of Variety of any of our English provincial towns, and it is this building which forms the subject of the present article.

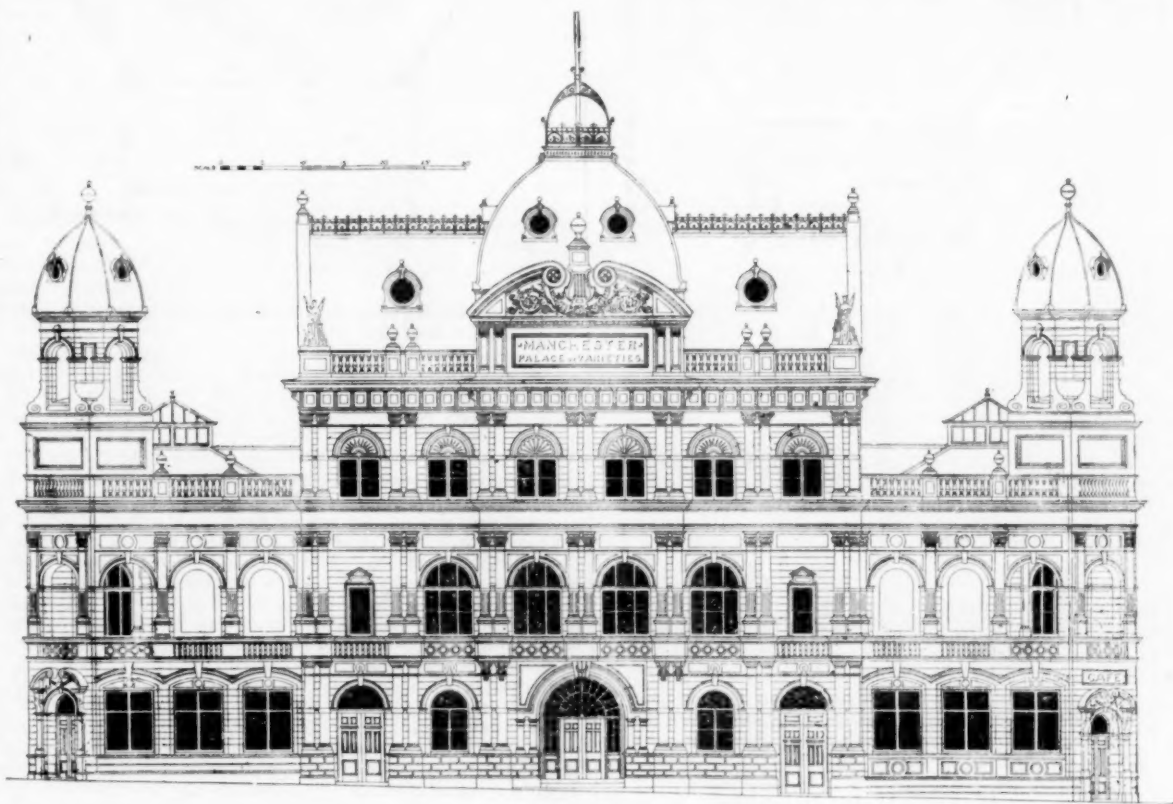
The well-known firm of Manchester architects, Alfred Darbyshire, F. S. A., F. R. I. B. A., and F. Bennett Smith, F. R. I. B. A., responded readily to my appeal to be allowed to include this as one of their works in the present series of English and foreign theatres. The ample proportions of the building, with the clever and simple planning of the house, assert for this theatre a place among the very best of any country.

One has only to study intelligently the plans of the building to see that it has been designed for the purpose of an English variety theatre of an advanced type. The ample stage is large enough to produce the most luxurious spectacle or ballet, while the auditorium is arranged with promenades, foyers and lounges of a size seldom to be found in England, even in theatres of the character where the audience is more than half composed of those who prefer moving about to being seated during the whole of the performance. Such spaces

has been taken of the ground by the architects, and one point I would impress upon my readers is, that in spite of the somewhat irregular shape of the ground a plan has been designed with a symmetry and simplicity which denote a thorough knowledge by the designers of the many wants of theatrical buildings. A tricky plan is never a clever plan of a theatre: the more simple the plan the safer the building, and in this case every entrance, exit, passageway or staircase on the one side has its corresponding entrance, exit, passageway or staircase on the other, so that anybody entering on the right and being seated on the left will find near their seat on the left a corresponding way out to the way they came in by on the right. This is one of the most important provisions to be made with regard to public safety. Exits should be placed where they can be easily found, and where they may be expected to be found.

Of the two frontages, the principal one is toward Oxford Street, the side one next to Whitworth Street. The Palace of Varieties forms one of the most recent examples of theatre architecture and construction in England and in many respects it follows the lines and features of the Irving-Darbyshire "safety" plan carried out in the rebuilding of the Exeter Theatre [Of this I shall have more to say when illustrating the Exeter Theatre in another number of these papers], the main point of divergence being the addition of a second tier of seats, called the amphitheatre, in place of the old gallery.

The great principle of isolation, which has been adopted as a *sine qua non* by the Manchester County Council, has been adhered to and no new theatre will be licensed by that body unless erected on this



are indeed a necessity in theatres where the performance is a continuous one, and where people have not the opportunity of stretching their limbs between the acts.

Messrs. Darbyshire and Smith, the architects, were instructed in the autumn of 1888 to prepare designs for this building, and on the night of May 18, 1891, it was opened to the public for the first time. To carry out the initial condition of safety, namely isolation, it was necessary to find a site which, if not surrounded by streets, would be large enough in its area to enable the designer to create streets or open spaces of their own. Hence, the site chosen was one which allowed of these important provisions, with two frontages, the one to Oxford Street, the other to the new thoroughfare known as Whitworth Street. The site was mostly open and in order to complete the isolation, some old buildings were demolished and the corporation undertook the formation of Whitworth Street. The Palace thus stands in the middle of an open space. The ground to the left of the building allowed the architects to place the lime-light tanks, electrical-plant, carpenter-shops and all other dangerous elements of the stage requirements quite outside the building. The site thus formed comes up to the most advanced English regulations and it may be looked upon as an exceedingly good one. Every advantage

fundamental principle. The pit portion of the theatre is below the street-level, as in the Irving "safety" plan, so as to reduce the height of the amphitheatre from the street-level as much as possible.

Each portion of the house has its exits communicating directly with the streets. The pit has four exits, counting the entrances each as one; the grand balcony, three; and the amphitheatre, four. All the passages, floors and staircases used by the public and the artists are of iron and concrete, so that there is a safe means of escape in case of fire or panic.

The auditorium is placed parallel with the proscenium instead of as a prolongation of it, or, in other words, the architects have returned to the old Greek form of the semicircle, which brings the audience nearer to the stage, the proscenium-opening being widened to accommodate this expansion of the auditorium. Having decided upon this method of planning, the next point of interest, still following the Greek model, was uninterrupted sight-lines from each seat. This end has been secured in the following manner:

The eight large columns supporting the superstructure of the two tiers are set back, and the girders resting on them are of a cantilever character, with an overhang for the balcony above. The coupled columns, supporting the amphitheatre, stand on the back of these cantilever beams, at a position which, for clearness of explanation, may be said to represent the position of the circular wall

¹ Continued from No. 1011, page 56.

A large exhaust ventilator is placed over the stage as an extract for smoke. The stage is divided from the auditorium by the fire-resisting curtain already mentioned.

In designing this building the architects aimed at adding to the street architecture of Manchester something which would not only have dignity and plenty of light and shade, but would if possible possess some attraction of color. With a view to secure this, they decided to attempt a revival of exterior decoration in gesso-duro and graffito, in a treatment of red and gold. The interior decorations are of fibrous plaster in relief, the color scheme being cream, gold and scarlet. The entrance into the balcony is marked by a beautiful marble doorway containing most elaborate carvings which was secured from a dismantled palazzo in Italy. This doorway stands upon a wide Sicilian marble staircase of appropriate design, which forms the double ascent from the hall to the balcony promenade.

It is not often that we can ascertain accurately the cost of a theatre, but in this case the architects have furnished me with the information that the cost was a little over £40,000.

The amphitheatre ironwork is composed of fourteen wrought-iron built girders, one portion of each being a cantilever. This ironwork is calculated to stand a total distributed load of 430 tons, with a factor-of-safety of four. The amphitheatre has an area of 2,866 square feet; the girders are each supported near the overhanging portion by twin cast-iron columns, which will each carry a load of twenty-seven tons, with a factor-of-safety of fourteen. These columns, in their turn, are supported by the girders that support the circle.

The circle ironwork is composed of eight main cantilever girders and six cross girders, which in their turn support one end of six intermediate girders; the eight main cantilever girders are supported ten feet from the overhanging end by eight cast-iron columns, which will each carry a load of 86 tons, with a factor-of-safety of fourteen. These columns also carry the ends of the cross girders which support the intermediate girders. The cantilever girders, in addition to being supported by the columns, are built-in and securely tied into the main walls of the building. The circle ironwork is calculated to stand a total distributed load of 530 tons in addition to the weight of the amphitheatre with a factor-of-safety of four. The circle has an area of 3,530 square feet.

This arrangement has enabled the architect to dispense with any columns whatever in front of or among the seats; the columns supporting the circle in the pit are behind the last row of seats and the same is the case in the circle.

The girder carrying the brickwork over the proscenium-opening is 42' long by 4' 6" deep by 2' wide, of the box type, and carries a load of 200 tons.

The girders that carry the fly galleries are 4' deep and 18" wide, and are supported at one end by the proscenium-wall and at the other by the stage-wall. The fly-gallery girders also carry a girder 51' long by 4' deep by 18" wide, which carries a load of 100 tons. The above girders all have a factor-of-safety of four, and the total weight of the last four girders is 36 tons.

The factor-of-safety of the cast-iron is fourteen, while that of wrought-iron is four.

The majority of theatres are subject to chilling draughts, owing first to an inadequate supply of air, consequently the air rushes through every crevice and doorway with such force that very unpleasant and cold draughts are created. To avoid this, heating appliances have been put in the entrances to temper the inflowing air, with valves to regulate them. The incoming air is warmed by arranging heating coils in vertical shafts, delivering the warm air into the building at a height of about 6' from the floor, as it has been found by experience that cold air cannot be delivered in such buildings without inflicting cold draughts upon some of the occupants.

The ventilating appliances have all been made specially for the purpose, using cast-iron as much as possible for durability. There is not a single fireplace in the building, so that the danger caused by open fires is thus excluded from the theatre.

The following is the holding-capacity of the house:

Basement,	Stalls.....	140
	Private boxes.....	20
	Pit.....	736
	Pit promenade.....	430
Ground floor,	Balcony.....	260
	Promenade and foyer.....	550
	Private boxes.....	10
First floor,	Gallery.....	482
	Promenade.....	400
Total		3,078

Four thousand people were in the theatre on the opening night.

According to the custom I have adopted in these articles, I give a table of some of the chief dimensions of the building:

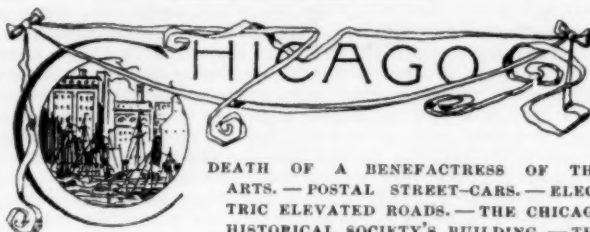
Width of proscenium-opening.....	36	feet.
Height of proscenium-opening.....	33	"
Depth from curtain line to back wall of pit.....	68	"
" " " balcony front.....	42.6	"
" " " gallery front.....	51.6	"
Width between side walls of auditorium.....	90	"
" " " stage.....	66	"

Height from pit floor to ceiling: 60 feet to spring of elliptical dome, 68 feet to crown of dome.

Height from stage-floor to gridiron.....	63	feet.
Width of grand hall.....	47.6	"
Breadth of grand hall.....	31.6	"
Width of grand staircase.....	8	"
" " pit staircases.....	6	"
" " all others.....	5	"

ERNEST A. E. WOODROW.

[To be continued.]



DEATH OF A BENEFACTRESS OF THE ARTS.—POSTAL STREET-CARS.—ELECTRIC ELEVATED ROADS.—THE CHICAGO HISTORICAL SOCIETY'S BUILDING.—THE VIRGINIA LIBRARY.—ST. PETER'S CHURCH.—THE SKETCH-CLUB EXHIBITION.—THE ART INSTITUTE WORK.—A FURNITURE EXHIBITION.—THE POST-OFFICE QUESTION.

WHERE has this month passed away from among us one who has done more than any one, or, in fact, any twenty other persons combined, to make possible much of the best architecture of our city. Born in humble circumstances, she continued to live on in the utmost simplicity long after her labor had borne its fruit in stately libraries, churches and warehouses, rich business blocks and luxurious houses rising around her on every side. Notoriety came to her unsought and unwelcome, and though reluctantly acknowledging the act which made her famous and which was the master-stroke to clear the field for the best efforts of our architects for over twenty years past, still she sought to live known only in the circle of a comparatively few congenial spirits; modest and retiring, in fact, fearing as an unpleasant necessity the mere mention of her famous deed. The partner of her labor who so well seconded her efforts has long since passed over to greener pastures, while she, herself, has scarcely realized the good work she has done. No patron of the arts and sciences has ever driven the plow with a more unsparing hand through the field where some day was destined to flourish the brightest flowers of architecture. Nothing was spared within the reach of the power which was to open to architecture a field equalling, if not surpassing, that found in the Rome of the Cæsars. This last week Mrs. O'Leary has succumbed to the weakness of the flesh and has passed away, not far from the spot where twenty-four years ago, in combination with a cow and a kerosene lamp, she performed her great act, by which Chicago was freed of more second-rate buildings in a shorter space of time than had any other similarly burdened city ever been. Mrs. O'Leary, it is said, always owned up handsomely till the very day of her death to the act, the consequence of which came to Chicago rather in the form of a blessing in disguise, but never did she voluntarily introduce the subject herself, which was always a painful one, full of annoyance and mortification to her.

The cow, at least, would scarcely recognize the West Side, which it left over twenty years ago, and the prairie pastures, where with others of its kind it used to graze, would be but a dim and flickering remembrance among the blocks of brick and stone, the jingle of cable bells, the screech of trolley-wire, or the dim shadows from the elevated roads. Chicago now has over two hundred miles of electric road, notwithstanding the fact that with few exceptions the electric lines do not enter the centre of the city, but only connect with the cables in the less-crowded districts.

An interesting experiment is just now being tried on some of the West Side surface roads in the carrying of the mails in the street-railway cars. One-half of the car is painted very prettily a white or creamy tint, and while the passengers sit as of old in one part of the car, in "Uncle Sam's" pure and spotless domain a deft-handed postal clerk is busily engaged in sorting letters and papers. The ostensible reason for this experiment is to arrive promptly and easily at the distant quarters of the city with the bulky mail-bags, though secretly there lurks behind it all a willingness on the part of the railway officials to have the strong arm of Uncle Sam spread over them in times of strikes and disturbance. The move has met with considerable opposition on the part of the railway employes, though neither they nor the employers mention anything about preparing for war in time of peace.

Within the past year or two, as before mentioned in these letters, the first elevated road was set in operation, bringing into convenient contact with the heart of the city much previously unavailable property. The Metropolitan Elevated, only recently put in working condition, has introduced several new features which mark an advance in the operation of overhead transit. The motive-power of the road is electricity, the motor being introduced into one corner of the front car of each train. This is the first elevated road of any importance in this country using this system, which is practically the same as that used at the World's Fair. Of course, in the use of this system, the minimum amount of noise and dirt is imposed on the people living along the route of the road, while passengers enjoy an equal immunity from these two annoyances. The cars are not only lighted but heated by electricity, the heating appliances

being placed under the seats. The policy of the Company has been quite different from that usually pursued by similar corporations. Property has been bought where possible, or, where not, condemned for the right-of-way, rather than utilize the public streets by means of a franchise. The entrance into the heart of the city has been difficult enough, even in this way. The road-bed, which is a broad one with four tracks, cuts a broad swath through many substantial brick blocks, some small three-story city residences, while one, abutting on the river, is an eight-story structure. The buildings thus mutilated have their walls carefully closed and cemented, and the remaining portions are left intact for their usual occupants. The down-town structure is quite an interesting example of modern engineering. A comparatively new six-story building was purchased; the stories on a level with the tracks were tunneled, so to speak, and the trains permitted to enter into the heart of the building. Access to the trains is through the central front entrance of the building, and up over stairs, past the ticket-window, where the ticket-seller and ticket-chopper are united in one man, doing away with both tickets and conductors on the train. The offices of the Company are in this structure, and three or four stories rise above the track-sheds undisturbed by the apparent change in their foundations. In crossing the river, which at this point is very narrow, a bridge is used—which actually consists of four separate and independent bridges—of the cantilever type, one track upon each bridge. This construction obviates the necessity of a central pier in the narrow part of the river, and solves the problem of lack of room for a swinging draw. Each bridge, composed of the two cantilevers, springing from opposite sides, has the cantilever so pivoted as to permit of the upward opening of the bridge for the passage of vessels.

The down-town loop, which is to connect the various elevated roads and be used by them, is in course of construction, though to complete the contemplated entire road is not yet possible, owing to delays in obtaining the right-of-way.

In last month's letter several semi-public buildings were spoken of as completed, or as fast approaching their time of completion. The Chicago Historical Society's house on Dearborn Avenue is one of these. On the exterior the building is not nearly so successful as many that have come from the same source. It is Romanesque in style, but is decidedly lacking in that harmony and success of outline which is usually the result of careful study, strengthened by previous knowledge and experience. The features of the entrance and central front façade are especially weak. A rather meaningless arch spans the main entrance, an arch which loses its character inasmuch as abutting practically on nothing, it naturally carries no actual weight. Inside this arch a most preposterous carving represents some early historical scene between some of the Catholic fathers and the Indians. Crude and weak in design and execution, as it is, this carving could only have been an interesting feature in an historical library had it been the work of the aboriginal red man whose portrait it portrays. It may possibly be that the pre-historic efforts at art were here sought to be duplicated in manner and what appears like careless workmanship is in reality the result of especial effort.

A small feature of the exterior, but one which is not entirely in keeping with the style of the whole, is the introduction of iron gates of a Colonial design by the side of a structure whose leading characteristics are Romanesque. The building, no doubt, as constructed is admirably suited to its use. Destined to hold valuable historical collections, it is made as nearly fireproof as any building can be. The walls are red granite—a dangerous stone, however, for fireproof work, as shown by Boston's experience in her great fire. The floors are mosaic, staircases of stone, while the doors, book-shelves, frames of windows and skylights are metal. No furnishing is as yet visible in the place, but the newspapers have it that steel and aluminium will be used in the furniture, asbestos in the hangings, while the picture-frames will be a combination of steel and plaster. Two mantels of historical interest grace the interior, one of white marble from the old Mahlon D. Ogden mansion, which, though a frame residence, escaped burning in the great fire, and the other, one of composite character, the material being taken from the old Illinois Central depot, the old County Court-house, and what was known as the Nixon Building, another structure which practically passed through the fire unscathed.

In very direct contrast to this library building, in beauty of proportion and refinement of detail, is the charming little structure known as the Virginia Library, connected with McCormick Theological Seminary, in the northern part of the city. The building is comparatively small, consisting of a main two-story central pavilion, and two lower side wings. It is of buff Bedford stone, and in all particulars adheres to the Classic style, which naturally gives us a building of fine and satisfactory proportions. Not only is the design excellent, but the execution of the details is very charming. The mouldings are finished and studied, and the whole result most satisfactory. It is to be regretted that so good a building should not be more advantageously placed in the grounds, or that the possibility of getting a view of it, as a whole, should not be greater. There evidently has been no plan of the grounds, as a whole. The largest and most aggressively bad building of the group occupies the central and most conspicuous place, while apparently each new building has been allotted the next best situation left, till at last this really fine structure, by all odds the best in the grounds, is obliged to take a very unfortunate position. Very few building-committees ever

realize the all-importance of securing the aid of the very best available landscape-gardener, and allowing him, in consultation with the architect, to block out some plan for the future situation of probable and possible buildings. At the best, the landscape-architect has but few chances in this vicinity as yet, but already an entering wedge has been introduced, mainly, it would seem, in this as in scores of other matters, through the education, or more properly the beginning of the education, which the World's Fair offered in this as in all directions. Ten years ago a small country-place which was laid out by a landscape-gardener was a thing simply unheard-of in this part of the country; and to the average land-owner, if such a thing had been suggested, it would have only brought to his mind, on a hundred or eighty foot lot, the possibilities of miniature mountains, artificial lakes, rustic bridges and rock-work. As it is now, occasionally a man of this profession is consulted about the ground around suburban houses, and in the harmonious grouping of shrubs, the economy of room, the appropriate use of certain trees and plants in certain locations: the places on which such thought and study has been bestowed are easily distinguishable from the ordinary ones, where trees are planted in rows, and shrubs are dotted over the lawn promiscuously, as is often the case in the average small country-place.

The portico of the Virginia Library is one of extreme beauty, and with the well-proportioned flight of steps leading to it might present an imposing front were the surroundings what they should be, and better calculated to add to, rather than detract, from the dignity of the entrance.

The style of the exterior is well carried out in the interior, which is attractive in its strictly Classic character. There is a chance for much beauty to be added to that already there, or for it to be marred by the decoration, which it is said is as yet a matter to be settled. The spaces on walls and ceilings are left for ornamentation, but as yet the rough plaster does not tell the secret of what is to come. The ideas of the late Dr. Poole are carried out in the avoidance of the old "stack system." The north wing of the building is devoted to the reading-room which, in accordance with Dr. Poole's idea, is well furnished with book-cases for the reference-books. An open fireplace, the Mexican onyx mantel of which is very satisfactory, ornaments the side of the room opposite the entrance. The design is entirely simple, the egg-and-dart moulding being introduced as the chief feature of ornamentation. The ceiling is divided into panels whose ornamentation in plaster mouldings is good in form and style. Spaces are left in the centre of the panels for probable decoration. This whole room, as well as the entrance-hall, gives an opportunity for most successful effects, and it is to be hoped the work that is to come will be equal to what is already done.

Another interesting structure in the northern part of the city is that known as St. Peter's Church, on Belmont Avenue. Like the Virginia Library, the purpose of the structure has been thoughtfully considered in the making of the design, and no dignity has been lost by flippant flights into the untried to attain something striking, novel—and bad. Good taste is shown through the entire structure, both on the exterior and interior. The interior, finished in oak, is especially satisfactory in its open truss-work and Gothic tracery. At present it is finished in plain tints, but should the future see the decoration of the building accomplished in complete harmony with the style, the result will evidently be one of the most Churchly ecclesiastical interiors of the city.

The Chicago Architectural Sketch-Club has, since the date of our last letter, closed its annual exhibition, held, as last year, at the Art Institute. The general opinion seems to be that the display was equal to that of last year, although there certainly has been a larger amount of inferior work admitted than previously. There were an unusually large number of school drawings displayed, a few of them extremely good, and of especial interest to all draughtsmen and students as showing methods of composition, and especially methods of rendering well worthy of study. But, again, many of them were essentially poor, badly rendered and generally soiled and dirty. It may be expressing a very unorthodox sentiment, but certainly, to the writer, a poorly composed design is uninteresting enough, but such a drawing with the dirt not cleaned off the paper, and the rendering so careless and generally "smutched" that it becomes an eye-sore, even if done in the famous École des Beaux-Arts, is unbearable in a public exhibition. It scarcely seems necessary that these poor things, which were not deemed by the French school as worthy even of a "mention," should be permitted to obtrude themselves upon square yards after square yards of the wall-space devoted to this annual display, and in the future a little more pruning in this direction by the jury would be well received.

The catalogue-cover this year and the general make-up of the book were quite satisfactory. The advertisements, which for financial reasons it is absolutely essential to have, were not overpowering, but kept well in a secondary place, although some of them were certainly artistic in arrangement and design.

The question of illustration in such a catalogue is certainly a difficult problem to tackle. According to the theory now always supposed to be in practice, no designs, however good, are engraved or paid for by the Club, but any exhibitor who desires more advertising has plates made of his own works and they are inserted in the catalogue. As a result, frequently the poorest things in an exhibition are the ones that are the most prominently brought to the public attention, while many of the really best things are those never impressed on the attention of the casual observer. As long as plates

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have to be made before drawings are submitted to the jury, and as long as they are not specially selected by the jury, it is probable that this state of affairs will continue to exist. If it were possible to find some scheme by which in the future this now general practice might be avoided, even at least in the catalogue of the Architectural Sketch-Club, a very considerable advance would have been made. If necessary, a few more pages of well-paid-for advertisements might be tolerated, if the actual engraving of exhibits could be more intelligently and reasonably selected.

At present there is hanging on the walls of several of the galleries of the Institute a most interesting exhibition of the work done by the school for the previous year. It certainly far surpasses in its degree of excellence the work shown by the school a year or two ago, and the standard seems much higher. The work from the cast in charcoal shows its usual weak points, but naturally when students start at the foot of the ladder the effect of the instruction is not so apparent, as it is only in a few rare cases where genius burns with a lucid light that the early work is clear, strong and vigorous. Passing on to the nude life-class, matters improve a little, though attenuated legs and abnormally developed stomachs still crop out here and there. Still the discipline of drawing begins to tell and many creditable examples are found. The still-lives in oils and water-colors present many extremely good specimens, and the studies from the costumed model are many of them excellent, both in charcoal, crayon, pastel and oil. Passing on to the architectural drawings, it is really gratifying to note the improvement of the work here exhibited over the very spiritless collections of some former years. Many of the designs have a certain amount of worth in themselves, while in the matter of rendering them great improvement can be noted. The students have also considered it worth while to properly mount their work and in many ways more *esprit de corps* is evinced, a characteristic heretofore much wanting in this place, although often a marked feature in the best architectural schools of this country as well as elsewhere.

The work from the classes in design is especially interesting. Mr. Sullivan, our talented *confrère*, is reported to have had an enthusiastic ambition at one time to found a style. This ambition was not, he felt, to be realized as the years went on, but most assuredly he could feel that his wildest desires had been realized in looking over this exhibition of the classes in design. The Sullivan spirit, which is a characteristic one, pervades everything, and in the advanced classes there is absolutely no other spirit shown, from designs for lace-work and wall-paper up to those for wrought-iron work and mosaic. The designs for architectural ornamentation modelled in clay might well come from the actual hand of Mr. Sullivan. Not only has the geometrical scheme been worked into the idea, but actually the same applied forms of conventionalized leaf and flower petal have been used. Charming as Mr. Sullivan's own work is, it seems rather a pity that a whole school should thus be reduced to a state of almost servile imitation in which all attempt at originality is lost. And this one kind of work is used to the exclusion of examples in all other styles, even such well-known and established ones as Classic, Romanesque, Gothic, etc. There would be very likely to occur times in the future life of the designer when he would be called upon to compose something with these characteristics, and then, from his past studies, one would expect him to be quite at sea. Doubtless if this thing continues there will be a Chicago style resulting in quite different work from that sent out from any other art school, and the adjective Sullivanesque will find here many nouns for it to modify.

Four large ornamental vases are shown in this department. The old Classic shapes are entirely abandoned (not, it might be incidentally mentioned, with any gain in beauty of form) and shapes more suitable to the Sullivanesque details have been substituted.

It is curious to note that in the first year of the designs for wrought-iron work, the prevailing spirit of the school has not made itself felt and some very creditable original work is shown. Another branch which still maintains its independence is that of the illuminated printing. Some poor work is shown, but the two prize compositions are well done, and the view of one with an Elihu Vedder feeling in the swelling lines is especially well conceived.

The work in water-color for interior house decoration has the lowest standard in the work of the whole exhibit. This seems in good part to be due to the fact, that a successful decorator in this department should have some knowledge of architecture, and also that their first style not being always suitable for house decoration these students are at a loss for ideas for their composition. All architectural skill is shown to be decidedly wanting with this class of students, and impossible pillars and abnormal fireplaces are found in rooms whose harmony of color does not induce one to forget the faults of outline and design.

A set of drawings possessing noticeable excellence are those for a dowry chest. In one, which took the First Prize, or highest mention, we at last see a Classical form introduced, successfully combined with the Sullivan detail. One especially attractive design bears the carved motto, "My Daughter! Oh, my Ducats! Oh, my Daughter!" a bright turning of the well-known quotation to a clever use.

Those interested in this matter of design will find subject for approval or the contrary, as the case may be, in the furniture exhibition just opened here in Chicago. To people who had the opportunity to compare the furniture of various nations, side by side, at

the World's Fair, and who look upon the designs for it as they should, as a fine art, this cannot fail to be of interest.

Matters concerning the erection of a temporary post-office on the Lake Front are as yet undecided. Everything is in readiness at the Supervising Architect's office, so far as plans, contracts and specifications are concerned, but certain abutting property-owners, while they promise to make no disturbance in the matter of injunctions, refuse to put their names to any document which will nullify their right to interfere should they feel so inclined. It seems a pity to waste valuable time in this way, when a temporary or most any other kind of a structure is so badly needed by those now employed in the Federal Building. It will soon mean another winter for the men in their old damp, dark and unhealthy surroundings. The Corporation Counsel is hopeful that work can be begun by the fifteenth of this month.

Another new public building which will be gratefully received by the Chicago public is the Contagious Disease Hospital. Heretofore, there has been no hospital where people suffering from contagious diseases could be received, with the exception of that known as the pest-house, and this at times has been so overcrowded as not to be able to accommodate all the small-pox patients. As would naturally be expected, the choosing of its site has given rise to most animated discussion, as no neighborhood was anxious to have the honor of its acquaintance. Plans have been adopted by the Board of Health by which a hundred-thousand-dollar group of buildings will be commenced at once. It is intended to build a permanent administration building, consisting of an office, dispensary, treating-building, engine-house and steam-heating plant. A barn, morgue and disinfecting-house will be built at a considerable distance from this group, while the hospital proper will be connected with them by means of long corridors. The hospital will consist of separate wards connected by halls, and will be so constructed that if at any time it seems wise to burn a part or portion of them, it will be possible to do so. These wards, while having all the latest sanitary devices, will naturally be of cheap construction.

Chicago has for years had the reputation of moving most anything that she puts not her foot, but her mind on. So had Archimedes and she only follows in his methods. A gigantic move which there is talk of undertaking, is to put a certain Baptist Church on wheels and roll it fifty feet south of its present location and six or eight feet to the east of its present site. This Immanuel Baptist Church is one of the largest stone churches in the city and has a spire one hundred and fifty feet high. It is also desired, besides moving the church, to lift it six feet into the air, to give more space in the basement. Responsible movers say it can be done, and it undoubtedly will be a large and interesting undertaking of its kind, if attempted.



THE WORKING OF THE WORKS DEPARTMENT OF THE LONDON COUNTY COUNCIL. — THE NATIONAL PORTRAIT-GALLERY. — THE UNDERGROUND ELECTRICAL RAILWAY. — PROPOSED ACOUSTICAL OBSERVATIONS.

THE Works Department of the London County Council has lately passed under a pretty severe attack from that side of the Council which is styled "Moderate." This party formed the opposition when the Department was launched, and at the last election was returned in a force almost equal to that of the Progressives. Much party profit was made at the elections by the Moderates out of alleged bad management in this department, whereby the actual cost of works executed had greatly exceeded the estimated cost. It will be remembered that the department in question arose some two years ago and was more the creation of necessity than choice. Contractors refused to tender, or having tendered, frequently withdrew, because the guarantees demanded by the Council as to the rate of payment of workmen, and the stringent requirements as to materials and workmanship rendered, in their opinion, a profit impossible. It was under such circumstances that the Council decided, too glibly to satisfy their opponents, to establish a Works Department and become their own contractors. A short time ago the department submitted to the Council its half-yearly report of all works executed to date. The total estimated cost had been £176,086, while the actual cost came out at £178,863, or an excess upon the estimates of £2,777. At the meeting of the Council to discuss the report, not a few of the Moderate party urged that it was not yet too late to return to the system of employing contractors. Mr. John Burns, M. P., however, in an effective speech, again drew their attention to the fact that the Council had assumed a Works Department because no other course lay open to it. He went on to point out how unfair was the treatment the young department received from members who neglected to take into consideration the immense difficulties to be overcome. That such a vast organization

had been formed and that so much work had been carried out in a short space of time, at an excess upon the estimates of only one and one-half per cent, was, he contended, little short of marvellous. The difficulties of premises and proper organization had been stupendous, but everything, he claimed, was now in working-order and he looked confidently to the department not only to wipe off in the next two years the losses of the past two, but to show a handsome balance into the bargain. Ultimately, the report was passed and the increased expenditure sanctioned. There is no doubt that there has been mismanagement in some quarters of the department, but the case has not been made out that the department is a failure. With this slight shading and the experience of organization which two years has brought, we may yet hope to see the municipality as employer very practically successful.

Not very long ago the Right Hon. Herbert Gladstone, First Commissioner of Works, gave out in the House that Her Majesty's Government intended to proceed as soon as practicable with the scheme for widening Parliament Street where it opens into Parliament Square. As long ago as 1887, the improvement was approved by Act of Parliament, but monetary and other difficulties have hitherto prevented the carrying-out of any private scheme. Parliament Street, for the most part of its length, averages in width 125 feet; it is only the last hundred yards or so which suddenly narrows down to about half that width. When this is thrown open, Parliament Street will form one of the finest thoroughfares in Europe, while the view of the Houses of Parliament and Westminster Abbey, from the direction of Trafalgar Square will be immensely improved. It was thought that the Government intended to build new War Offices on the site that will be left vacant after the clearance, but now that the Government in question no longer exists, it is possible that the scheme may be hung up for some considerable time: especially as the Conservatives, if they can afford building operations at all, are half pledged to carry out the completion of South Kensington Museum.

The new National Portrait Gallery, which has been attached to the National Gallery from the designs of the late Mr. Ewan Christian, is now practically completed, and the work of moving the portraits from their present temporary positions has begun. It is hoped that the new buildings may be thrown open to the public early in November. Considerable space is taken up at the back of these buildings by some barracks; these will probably be transferred before long to the more open and suitable site on the Millbank Embankment. This is the site upon which originally Millbank Gaol stood, and which is now partly occupied by the Gallery of British Art, building by the munificence of Mr. Henry Tate at a cost of £80,000. When the barracks are transferred to this site, most useful space will be afforded for necessary and convenient extension of the National Gallery.

The Underground Electric Railway which, passing beneath the bed of the Thames will connect Waterloo Station with the City, is being pushed forward at a rapid rate. The work was begun about a year ago at two points in the river-bed near the south side of Blackfriars Bridge. Two cylinders, 45 feet in length and 9 feet in diameter, were brought down to the clay-level by union screw tackle, one over each of the designed positions for the up tunnel and the down, respectively. The tunnels were then worked in either direction towards the termini of the line. Encounters with litigants and physical difficulties, such as water-bearing strata, etc., have checked the works from time to time, but the tunnelling is now progressing, in the aggregate, at the rate of 200 feet per week. Each tunnel when complete will start from its terminus with a sharp descent, rising at an easy slope as it reaches its destination. Thus the two lines vary very considerably in level at most points. The total length is to be $1\frac{1}{2}$ miles and the width of each tunnel is about 13 feet. The City terminus will be near the Mansion House, the station lying 63 feet below the level of the roadway; the Waterloo terminus will lie at a depth of 35 feet below the level of the platforms of the present Southwestern Railway. There will eventually be connection at the Mansion House between this line and the projected Central London Electric Railway, for which powers have already been granted by Parliament. The total cost of the present undertaking is estimated at near half a million sterling, and it is thought that eighteen months will now be sufficient to complete the works.

Mr. James Brooks, Vice-President of the R. I. B. A., is this year the recipient of the Gold Medal. It is in ecclesiastical work that Mr. Brooks is best known, and of his London churches the chief is perhaps that dedicated to St. John the Baptist, Holland Park. Unfortunately, however, the west front, of a most vigorous individual design, has not as yet been executed. In response to the Presidential address, Mr. Brooks dwelt upon the advantages which present-day students of architecture possess, and compared them with the 'tumble-up' methods in which he had been educated. The greatest natural gift an architect could possess was, he held, the power of invention, but even this could never become fruitful without systematic training or study. Perhaps the fact that Mr. Brooks was passed over last year by the Council of the R. I. B. A. in favor of the President of the Royal Academy, Sir Frederick Leighton, has rendered members more than usually gratified by this year's choice. But added to this feeling has been the certain sentiment of Mr. Brooks's individuality and complete sincerity of purpose, all of which has gone to render the Council's choice popular as well as gratifying.

Some time ago I had occasion to call your attention to a novel and

instructive paper on the "Microscopical Examination of Building Stones," read before the Institute by Mr. Henry W. Burrows, A. R. I. B. A. This gentleman is one of the most energetic of the members chosen to form the Science Committee of the R. I. B. A.; and for this reason I am particularly glad to see that members have testified their appreciation of his work by returning him of the Associates at the top of the poll. His late paper on "Sound in its Relation to Buildings" was fully noticed in your columns. He tells me that it is his intention at an early date to submit to the Committee a concise tabulation of questions of dimension, material, ventilation and conditions generally, all those quantities, in fact, which can possibly affect the acoustical problem. These forms of questions, if the scheme be approved, will be forwarded to gentlemen who are in a position, and willing, to take careful notice of the conditions affecting any public building of interest. It is hoped that, if this scheme be carried through generously, a valuable record will be obtained at little expense; and that possibly by a close comparison of the reports the active conditions may eventually be placed in their proper comparative positions of importance. At present, as Mr. Burrows truly pointed out, the greatest possible divergence of opinion exists amongst authorities on the subject: one will declare that proportion is the thing to study, and another that material is of the first importance, a third that the whole secret lies in a pure and homogeneous atmosphere, to be obtained by perfect ventilation. Professor Roger Smith has lately edited a reprint of his well-known work on "Acoustics," but has not added much that is new. Perhaps if the scheme I have mentioned is carried through, material will come to hand of sufficient interest and importance to justify a new work on this somewhat abstruse, because neglected, subject.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE PRESENTATION OF THE ROYAL GOLD MEDAL.

THE last ordinary meeting of this Institute for the present Session was held on Monday, June 24th, Mr. F. C. Penrose, M. A. (the President) in the chair.

The President said: The first and very agreeable duty which we have before us this evening is, as you are aware, that of handing, in Her Most Gracious Majesty's name, the Royal Gold Medal to the man of your choice. He is an architect whose works fully entitle him to receive it, and we may feel the greater pleasure in conferring the honor because the recipient is one of our own body. The Institute has so fully endorsed the recommendation of the Council that it implies a thorough appreciation by the general body of the reasons which led the Council to make that recommendation. I may therefore, perhaps, be thought to be going over ground so well known to the members who are present as to be of the nature of an unnecessary performance in recounting them. As, however, the proceedings of this evening will be reported far and wide, both in our *Journal* and in other publications, it may be desirable to mention some details which cannot but be interesting to outsiders. Mr. James Brooks, on whom Her Majesty this year confers the honor of the Royal Gold Medal, is a native of Berkshire, from the neighborhood of Wantage. He came to London about 1847 to study for our profession, and became a pupil of the late Lewis Stride, a Fellow of this Institute. That he was a diligent worker in the office goes without saying; he also attended Professor Donaldson's classes at University College, and became in due time a student of the Royal Academy, and attended the professional lectures. He commenced practice on his own account about 1852, at first—as was natural—in a comparatively humble way, but soon established for himself the career in which he has been so much distinguished, and in which he has enriched the neighborhood of London, and also many country districts, with some of the handsomest ecclesiastical structures which have been erected during the last thirty years. A complete list of these buildings would be very extensive, and lead me to a length far beyond what the occasion requires. I therefore select a very few from among the most striking examples, placing them approximately in the order of their dates, namely: The Convent Schools and Chapel of St. Michael, Shoreditch, 1863; St. Margaret's, Lee, in Kent, 1876; St. Peter's, St. Leonards-on-Sea, 1883; St. Mary's, Hornsea, 1888; St. John the Baptist's, Kensington, 1892. It is evident that much valuable study and successful practice must have preceded the first during the ten years which date from 1852 as above mentioned. And we may hope that the last-named on the list may be succeeded by a goodly following by the same hand. The style of architecture which Mr. Brooks has chosen for the majority of his churches is either the Lancet, or else the Transition into Curvilinear which succeeded it. In a few instances (one of them being the church at Hornsea referred to above) the Perpendicular style has been used very effectively. The treatment is invariably vigorous, and with a simplicity somewhat bordering on severity, particularly as respects the exteriors. This, however, is not the place to criticise, but to praise them, and they are worthy of it. Mr. Brooks's fame, no doubt, rests mainly on his ecclesiastical designs; but they are by no means his only achievements. Among his works may be cited a large brewery, an hotel, many secular buildings, two hospitals in connection with sisterhoods, extensive and sumptuous stables built for the Marquis of Londonderry, laborers' cottages, and gentlemen's mansions, one of the most remarkable of these being in South Africa. Mr. Brooks is Architect to the

Diocesan Society of Canterbury, and is one of the consulting architects to the Incorporated Society for Building Churches. Lastly, I feel sure of having your united concurrence with me in the act of handing to our distinguished colleague this Royal recognition of his merits as an architect.

The President then presented the Royal Gold Medal to Mr. Brooks, amidst the applause of the meeting.

Mr. James Brooks said that he first wished to be allowed to express his gratitude to the President, for the kind but too flattering remarks he had made on himself and his works as an architect when presenting him with the Royal Gold Medal. The honor was also enhanced by its having been given, on the recommendation of his brother architects, Members of the Institute. The medal was annually conferred on architects and men of letters, and was wisely not confined to Englishmen. He felt most keenly his position that evening, in having to address his fellow-architects on receiving the medal, for he, unfortunately, was not an orator. His mind went back to those distinguished men, who in the past had filled the position he occupied that evening. He could mention name after name, but he did not wish to be invidious, although he felt as deeply as they could the honor which had been conferred upon him, and which would cause him to strive even more faithfully to do his work as an architect, and to leave marks of history behind him, which should not be entirely to the disgrace of the person who had left them. An architect was not like a painter: the architect's buildings stood out in their goodness or badness, and more often the latter than the former. They stood before the whole world and made history, while the painter's pictures went into the picture-galleries and other places, and were more hidden from the eye. Architects then had a duty to perform, namely, to endeavor, as far as lay in their power, to hand down their works in their humble way, as he only could hope to do, and to imitate in some slight degree those great masters who had left behind them such monuments of their skill and ability. He referred to such men as those who had designed Durham Cathedral and Christ Church, Hampshire, both built by the same architect. When he looked at those works, and studied those buildings, as he had studied Durham Cathedral and Christ Church, Lincoln, Ely, Salisbury, Hereford, Winchester, and other great buildings, as well as the great collegiate churches — which to his great regret were mostly in ruins — not to speak of the parish churches great and small, and then looked at his own poor efforts as an architect, he had felt what a gulf existed between those works and his. He could attribute many of his shortcomings to the little amount of training which existed in his time. It was true that he had at a very early age a love of invention. He could give some of his efforts in that direction, and to mention one he might say that when his father first presented him a watch he was proud and contented, but he soon got tired of looking at the outside. Wishing to see the inside, he soon found out a way to take the watch to pieces, although he found it was not an easy thing to put it together again. Not to be daunted, however, he discovered the way to do this, and from that time he regularly did the cleaning. Without the gift of invention, he would ask, how could a man become an architect, as the architect's works ought to be full of invention. Even where there was this natural gift, it could not be fruitful without systematic training and study. In his early days this great advantage did not exist. No doubt they had Professor Donaldson's lectures then, but he could not see that these gave them such insight into the complete knowledge of their art as was necessary. The Institute, however, was now offering to all young men who chose to avail themselves of it the curriculum presented for their guidance and teaching, so that they might become much more accomplished architects than they possibly could if they had to come into their sphere of life in a sort of "tumble-up way." The examination had been now divided into three classes: first, the preliminary; secondly, the intermediate; and third, the final. He did not wish to be misunderstood on this point, for he was not going to say that the examination was going to make men who had not got the genius of architects, capable architects. He was quite aware that any one might pass these examinations, but they would not qualify such a man to become an architect. It was merely the means to an end; it was only the foundation and not the superstructure. If the student did not possess the natural genius requisite, no examination could impart it to him. But to those who went through this systematic training which the Institute supplied, it facilitated the acquiring of such knowledge as an architect should possess, before he could with any success enter upon his calling. No one reaped these advantages so fully as the natural born genius, for it enabled him to obtain in a much shorter time the completion of his studies, and to make an earlier start in life on his own account than he otherwise would. By this training and the examinations the student felt some confidence in himself, and this was a great advantage over the "tumble-up way" he had to pursue in gaining the small amount of the art and science of architecture that he possessed. He was proud to receive so great an honor as the Royal Gold Medal, after the long list of medallists who had received it in former years, and of whom he was the last and the least. He had also been gratified to receive many letters from noblemen, gentlemen, and members of the Institute, which would render the medal even more valuable in his sight. At all times he had endeavored to do his duty, he had loved his profession, and had striven hard for it. This was not the only time he had received

the favor of the Institute. He had, through their very great kindness, been elected year by year to the Council, although he thought it was time for him to retire, and allow some other person to occupy his position [cries of "No"]. For four years in succession they had honored him by electing him one of the Vice-Presidents of the Institute, and the medal which now hung round his neck was the last honor which they had conferred upon him. He was grateful to them for listening to a man who was not an orator, and who could only say things in a common way, but he had strong feelings, because he loved the art which he had been practising for so many years. He had been endeavoring to impress on the works that he had been carrying out for years some little originality, to show that there was some individuality in the man who had erected them. He would conclude by returning grateful thanks for their kindness in conferring this great honor upon him. — *The Builder*.

THE PROPOSED WORKS AT PHILÆ.

IN his report to the Government on the progress of reorganization in Egypt, Mr. Villiers Stuart, the Egyptologist, writes: — As connected with the subject of irrigation and the question of the projected reservoirs at Philæ, I visited this island in order to judge for myself of the effect of restoring the walls by which it was once surrounded and raising them to a sufficient height to keep out the water in case the scheme of a great reservoir at this point was carried out. I traced the foundations of the original wall in its entire circuit; it was about 700 yards in circumference. At one point there is a natural wall already, of more than sufficient height, consisting of immense granite boulders; this formation might be imitated at intervals in the new wall so as to break its formal appearance and give it a certain correspondence with Biggeh and the other islands around. Within the enclosure there would be a distance of about 60 yards between the west wall and the temple, but considerable less on the east. The chief temple faces south, and the space intervening between the façade of the great pylon and the southern extremity of the island, more than 100 yards in length, is disfigured with mounds of mud bricks, the relics of Arab and Coptic houses. This could be levelled and planted with palm groves, or converted into a botanic garden; this would form a picturesque and artistic setting both for the colonnades right and left and for the main temple itself. Thus within the enclosure, so far from the monuments being spoiled, they would, on the contrary, be set off to advantage, and rescued from their present squalid surroundings — an important improvement.

Externally, the island would lose some of its picturesqueness, but not to the extent that might be supposed, for the palm groves and the higher portions of the temple would show above the enclosing wall, and Philæ would be more assimilated to the neighboring islands. There would be nothing inconsistent with ancient traditions in the wall itself; all Egyptian temples were surrounded with high walls and embankments, and Philæ was no exception; it would be simply a restoration, but an improved one. The opposition to the scheme on the part of artists and archaeologists is based on misconception; most of the opponents would be converted if brought to the spot and the effect explained.

The most important eclipse of the picturesqueness of Philæ would be while the reservoirs were full, but at that season it is not visited either by artists or archaeologists, and as the level sank, Philæ would emerge uninjured in every respect.

Whether Assouan be the best point for the reservoir is an engineer's business to decide, but if it be, I have no hesitation in saying that the question of Philæ monuments ought not to and need not interfere. The monuments would benefit rather than otherwise. I say this as an Egyptologist, as jealous as any of my compeers for the conservation of every relic of the past. I met a well-known brother Egyptologist shortly afterwards who entirely agreed with me in my view. — *The Architect*.



SEVENTH ANNUAL COMPETITION FOR THE ROBERT CLARK TESTIMONIALS UNDER THE AUSPICES OF THE CHICAGO ARCHITECTURAL CLUB OF CHICAGO.

Conditions. — The competition is open to architectural draughtsmen under thirty years of age, residents of the United States, and not practising architects.

The author of each design must execute all drawings without assistance, and non-adherence to these conditions will cause the rejection of the design or designs in question.

The awards will be made by the adjudicating committee on the "Robert Clark Testimonial Competition," and are: First Prize, Gold Medal; Second Prize, Silver Medal; Third Prize, Bronze Medal.

The two designs receiving Honorable Mention will receive special bronze medals.

The three prize drawings shall become the property of the Chicago Architectural Club.

PROGRAMME.

An Art School.—A gentleman wishing to share his large and valuable collection of paintings, statuary and architectural fragments with his townsmen, has decided to place them in a building which he proposes to erect for the study of Architecture, Painting and Sculpture.

The building is to face the town square, and is to be not more than one hundred and fifty feet in its greatest dimensions.

It shall consist of one story and a high basement.

The first story shall contain the following rooms:

1st. A large entrance gallery for the placing and hanging of statuary and paintings. This hall should be the main feature of the plan, and should be carefully arranged for convenient and advantageous display, without destroying the architectural effect. It may be one continuous hall or divided into parts, at the discretion of the architect. It may be lighted from above.

2d. A large glass-covered court to contain architectural fragments.

3d. An amphitheatre to seat about two hundred, for lectures on art subjects. A library and an assembly-hall.

4th. Four class-rooms. These rooms should be well lighted and of easy access to the court and gallery.

5th. A janitor's room and an office for the custodian. These rooms may be small, but should be conveniently either placed at the entrance to the building or to the grounds.

As the number of the students is limited, the size of the rooms is of less importance than the circulation, convenience and artistic beauty of the whole.

The building being the home of the arts, should be pure in style and classical in feeling, though not necessarily archaeological.

Drawings required, viz:—One plan and one section at the scale of one-sixteenth of an inch to one foot, and the front elevation at the scale of one-eighth of an inch to one foot.

Drawings to be rendered at will; to be mounted on strainers, 28 x 40, without frames or glass.

A sealed envelope containing the name and full address of the author, with place and date of birth, must be *securely fastened to each drawing*; the drawing and envelopes themselves must not be marked by a device of any kind.

Drawings must be delivered to John Robert Dillon, Secretary, Chicago Architectural Club, at the Club-house, 274 Michigan Ave., Chicago, on or before *Friday, November 15, 1885*, charges to be prepaid. All drawings not receiving prizes will be returned at the expense of the contributor.

L. J. MILLET, Chairman,
R. C. SPENCER, Jr.,
IRVING K. POND,

Adjudicating Committee.



[Contributors of drawings are requested to send also plans and a full and adequate description of the buildings, including a statement of cost.]

HOUSE OF FRANCIS D. LEWIS, ESQ., WISSAHICKON HEIGHTS, PHILADELPHIA, PA. MR. R. G. KENNEDY, ARCHITECT, PHILADELPHIA, PA.

[Heliochrome issued with the International and Imperial Editions only.]

A DOUBLE COTTAGE: THE DINING-ROOMS. MR. R. BROWN, JR., ARCHITECT, BOSTON, MASS.

THE window and fireplace show the treatment of the interiors in the dining-rooms of the double cottage illustrated in No. 1019, July 6, 1895. The window-sill is about four feet from the floor and is wide enough to form a shelf for plants and flower-pots. The height of rooms is eight feet six inches from floor to underside of beams. The wood used in the finish would be either Canadian ash or American oak, stained a greenish color or a "broken" color of green and brown in the figure of the wood. The frieze is intended to be of coarse canvas painted in colors. The patterns of the fire-dogs and fire-back, which would be of cast-iron, are adopted from Old English ones.

DESIGN FOR MEN'S GYMNASIUM FOR MASSACHUSETTS GENERAL HOSPITAL CORPORATION, WAVERLEY, MASS. MESSRS. WHEELWRIGHT & HAVEN, ARCHITECTS, BOSTON, MASS.

THE ENTRANCE COURT, PLAS MAWR, CONWAY, WALES.

HOUSE FOR W. B. ROTHSCHILD, ESQ., HARTFORD, CONN. MR. F. R. COMSTOCK, ARCHITECT, HARTFORD, CONN.

STAIRCASE HALL OF THE SAME.

"HADDON HALL," BERKELEY ST., BOSTON, MASS. MR. J. P. PUTNAM, ARCHITECT, BOSTON, MASS.

[Additional Illustrations in the International Edition.]

WINDOW OF HOTEL, RUE HAMELIN, PARIS, FRANCE. M. GUINOT, ARCHITECT.

[Copper-plate Photogravure.]

DETAIL OF THE SAME.

[Copper-plate Photogravure.]

DETAILS OF CHURCH FURNITURE IN THE MARIENKIRCHE, OSNABRÜCK, PRUSSIA.

This plate is copied from the *Zeitschrift für Bauwesen*.

WELL IN THE COURT-YARD OF THE CASTLE AT GEHREN, THURINGIA. BERNARD SCHÄDE, ARCHITECT.

This plate is copied from the *Deutsche Bauzeitung*.

BUFFET IN THE RESTAURANT, PARLIAMENT BUILDING, BERLIN, PRUSSIA.

This plate is copied from *Innen-Dekoration*.

FIREPLACE IN THE HALL OF THE SKINNERS' COMPANY, LONDON, ENG.

FROM an artistic and archaeological point-of-view the "Cedar Room" is the most important existing feature of the Hall of the Worshipful Company of Skinners in Dowgate-hill, and the silver-plate possessed by the same ancient and historic City Guild, may be described as among the most valuable and interesting collections existing in London. We illustrate to-day the beautifully-carved chimney-piece which gives so much character to this "Cedar Drawing-room."

The Skinners' Hall was rebuilt after the great fire, and was refronted in 1790 by Jupp, who introduced the arms of the Company into the pediment of his façade, and enriched the frieze with festoons and leopards' heads. The drawing-room, which is lined with odoriferous cedar, was restored by George Moore, F. R. S., and the ornament is picked out with gilding tastefully managed, making, as Hare says, "one of the noblest old rooms in the City." The dining-hall is entirely modern, in a sort of Italian style, and lighted by skylights. At the end is a gallery for minstrels, with an Ionic treatment for the front, also designed by Moore. The old Georgian oak staircase, and the "oak parlor," are both good examples of Late Jacobean English woodwork, dark with age, and good in proportion and style. In the court-yard stand four handsome ancient lead cisterns, somewhat like that at the Brewers' Hall. The principal doorway has a curved hooded pediment supported by pilasters carrying acanthus-leaved trusses, said to date from the time when the hall was rebuilt, immediately after the great fire. The portrait of Sir Andrew Judd, Lord Mayor in 1551, and founder of the Tunbridge School, managed by the Skinners' Company, hangs in the staircase-hall above the wainscot panelling. His tomb is in Great St. Helen's. The Skinners' well, near the Clerk's well, situated in Clerkenwell, marked the site of much of their property, and here it was that the Skinners of London acted Holy plays, one of which, in 1408, lasted eight days, and was "of matter from the creation of the world."

The Skinners were incorporated in the first year of Edward III, 1327, and became a brotherhood in the reign of Richard II. No less than about thirty Lord Mayors have been chosen from this company. They have included among the membership of the Guild six kings and five queens, to say nothing of princes, dukes, earls and barons. James I granted the existing charter. The Skinners, proud of their antiquity, disputed with the Fishmongers for precedence in 1339, and a serious skirmish ensued. The ringleaders in the affray were seized by the municipal authorities; but the mob rescued the prisoners, and the mayor, with his officers, were maltreated. "These desperate fellows were apprehended, tried and condemned at the Guildhall, and executed in Cheapside, the king granting an indemnification to the mayor." Strype says that the Skinners in his days, "removed to Budge-row and Walworth." In 1395 they seem to have been located in St. Mary Axe.

This plate is copied from *Building News*.

THE GREAT BRESLAU PUMP, NEISSE, SILESIA.

THERE are few instances of the smith's craft even in Germany which will compare with this Silesian pump-case, standing in the Breslau Grand Strasse, at Neisse. Although dated late in the seventeenth century, it is a thoroughly traditional piece of work, and in some ways may be said to be even mediæval in the spirit of its design. The quaint freedom adopted by the smith as he introduced the many little grotesque conceits which enliven the foliations of the scroll-work exhibit a gaiety and delight on the part of the artificer which distinctly adds to the individuality of his production. An inscription is carried round the central band of the structure, just above the level of the head. The Imperial Eagle, surmounted by a crown, serves as a finial to the composition, and rises in an effective manner over the bunched-up scrolls, into which the inclosing framework of the domical roof-lines of the cage are developed. The curves throughout the design are graceful and well distributed, with a due regard to scale. The drawing which we publish is reproduced from Mr. Ernest Wasmuth's "Denkmäler Deutscher Renaissance," a work of artistic thoroughness and utility. The base of the pump at Neisse is constructed of stone.

This print also is copied from *Building News*.

THE CHURCH OF THE GOOD SHEPHERD, GOSPEL OAK, LONDON,
ENG. MESSRS. JAMES BROOKS & SON, ARCHITECTS.

BELIEVING that the character of the work of the recipient of this year's Royal Gold Medal is not known to many architects in this country, it seemed to us worth while to reproduce, after the *Builder*, this week, this and two other specimens of his work, specimens which are fairly characteristic of the simplicity and purity which have always marked it.

ROOD-SCREEN, ST. JOHN THE BAPTIST, KENSINGTON, ENG.
MESSRS. JAMES BROOKS & SON, ARCHITECTS.

THIS screen is built in Borstain stone, the figures being in Corsham. The subjects of the top figures are as follows:—The centre one, the Crucifixion, with our Lady and St. John on either side; on the four columns are the archangels; and between them are three angels holding their tapers; below the figure of the Crucifixion are the three Prophets. In the niches below the central figure is our Lord sitting on His throne in glory, and the twelve Apostles on either side; of the four spandrels below, two have elaborate but simple carving, whilst in the other are two angels holding censers.

The whole work is lofty on account of the great height of the church. The Crucifixion is well up into the chancel arch. The gates are not fixed, they are being made at the present time; they will be in wrought-iron work, heavily gilded. An elaborate reredos has been erected in this church; the whole of the panels being filled with paintings, all of which represent the Adoration of the Lamb.

This plate is copied from *The Builder*.

NAVE OF CHURCH OF ALL HALLOWS, GOSPEL OAK, LONDON, N. W.,
ENG. MESSRS. JAMES BROOKS & SON, ARCHITECTS.

THIS drawing of the interior of one of the finest of his recent churches was specially prepared for publication in the *Builder*.

The drawing, as will be seen, gives a view in the centre of the nave looking towards the east end. The effect of the development of the vaulting-ribs from a circular pier, without the interposition of any cap or impost moulding, is well shown in the drawing, and though we are not prepared to see the cap or capital discarded altogether in works in the Gothic style, there is an expression of constructive unity and simplicity in this treatment which is very satisfactory.

The church is being erected in Ancaster stone, with a core of Portland stone cement concrete. The width of the church within the walls is 64 feet, the length of nave and north and south aisles is 96 feet, chancel 42 feet 6 inches long, the north and south aisles 37 feet. The south aisle is fitted up to be used as a chapel, having a separate entrance out of a small aisle or passage. Owing to the great fall of the ground from west to east a crypt has been formed under the north and south chancel aisles and under the chancel, giving a parish-room under the north chancel aisle, a choir vestry under the south chapel, and a large vaulted clergy-vestry under the chancel. At the east end of the chancel are two octagonal turrets having staircases leading up to the gutters and for repairs of roofs. At the west end are two square turrets. The nave has five bays, the chancel three. All parts of the church, chancel and aisles, are groined in stone springing from and growing out of cylindrical shafts, 2 feet 8 inches diameter, the springing being 28 feet from the level of nave floor. Owing to the great thrust of the groining the buttresses project 7 feet from the external face of the wall, and are carried up without any weathering for about 20 feet, and then have a gentle slope to about 3 feet of the wall. The accommodation is for nearly 1,400, and the approximate cost is about £18,000.

LONDON SCHOOL—BOARD OFFICES, VICTORIA EMBANKMENT,
LONDON, ENG. MESSRS. BODLEY & GARNER, ARCHITECTS.



[The editors cannot pay attention to demands of correspondents who forget to give their names and addresses as guaranty of good faith; nor do they hold themselves responsible for opinions expressed by their correspondents.]

DAMAGES FOR DELAYS.

BROOKLYN, N. Y., July 8, 1895.

TO THE EDITORS OF THE AMERICAN ARCHITECT:—

Dear Sirs,—Your kindness in advising the undersigned in regard to the following matter, through the columns of *The American Architect*, will be greatly appreciated.

The owner of a residence situated in the centre of a large and valuable lot decided to move the building to a corner of the lot, thus rendering available for sale four valuable building lots.

The mason's contract, which was made separate, provided that the contractor should complete his work by a certain day, otherwise he should pay the sum of ten dollars for each day thereafter as liquidated damages. On account of severe weather the work was inevitably delayed much beyond the agreed time. However, the contractor

failed to provide certain stone necessary to complete the work, and so caused the premises to remain in an uncompleted condition for several weeks after he was notified in writing that the forfeit would be imposed.

Now, the owner entered the premises before the work was completed, but the source of damage is held by the owner to be in the unsightly and unfinished condition of the general premises (the failure of the contractor to provide this stone preventing other contractors from completing their work), thereby causing his lots to remain in an unsalable condition and in a condition unfit to offer for sale.

Though the forfeit of ten dollars per day was included in the signed and sealed contract, no mention was made therein of any premium to be paid in case the contractor completed his work in advance of the agreed time.

Do you consider the forfeit to be collectable under the circumstances? Yours very truly,

HERBERT R. BREWSTER.

[THE question whether damages could be collected would be determined mainly by the language of the contract. On general principles, it seems to us that the loss of sale of the land, on account of the delay in clearing up the rubbish incidental to the contract work, would be a damage too remote and uncertain to be collected under an ordinary builder's contract. The point may perhaps be put thus: Was the mason told, or would he reasonably have supposed, when he signed the contract, that he would be held, if he delayed its completion, for the loss of sale of the land on which the building was situated? If not, it would be difficult to make him now liable for such loss, particularly as the loss, if any, seems to have been due in part to the owner's or other contractors' delays.—EDS. AMERICAN ARCHITECT.]



BOSTON, MASS.—*Summer Loan Exhibition; Gobelin Tapestries; Japanese Paintings; Line Engravings, Mezzotints, and Etchings by Rembrandt:* at the Museum of Fine Arts.

NEW YORK, N. Y.—*Twenty-eighth Semi-annual Exhibition:* at the Metropolitan Museum of Art.

Summer Charities Loan Exhibition: at the American Art Association Galleries.



TO UTILIZE THE NILE CATARACTS.—M. Prompt, the Inspector-General of Roads and Bridges in Egypt, has proposed to utilize the motive power of the Nile cataracts. He would begin with founding an electrical station at Assouan, where there is a fall of forty-five to fifty feet, from which 40,000 horse-power might be drawn. A second fall could be created by a dam near Cairo fifteen feet in height. With the electrical power thus obtained he would light the City of Cairo and establish a large number of cotton factories. Moreover, he would also utilize the water for irrigation, and the cultivation of sugarcane and cereals. The cost of the works would, he thinks, be under £2,000,000, and they might be executed without any subvention from the State.—*London Globe*.

METAL-DECORATED GLASS.—M. Margot has taken advantage of the singular fact that aluminium, zinc and magnesium, when fused, will adhere to glass, in order to introduce a new style of decoration—namely, glass coated with these metals. The pure metals require a very high temperature to melt them; for instance, 1,112° Fahrenheit in the case of aluminium, but M. Margot has found that alloys of the metals possess the same property. An alloy of 90 parts tin and 10 parts of aluminium melts at 662° Fahrenheit, while an alloy of 95 parts tin and 5 parts of zinc melts at 392° Fahrenheit. Both of these alloys have a fine, untarnishable lustre. Moreover, one can actually solder glass with them as easily as one solders two metals, either by warming in an oven the two surfaces of glass to be united and applying the solder as one does sealing-wax, or with the ordinary soldering iron.—*The London Globe*.

FIRE CAUSED BY AN INCANDESCENT LAMP.—Several hotel men were standing in a group in an uptown hotel recently, chatting. The conversation turned upon the eccentricities of guests. The many odd ways in which different people handle electric lights came up, and one hotel man said: "Nearly every one now knows how the incandescent-lamp is operated, but still we meet with some funny instances of ignorance. Last week we nearly had our hotel set on fire on account of a piece of stupidity on the part of a guest. The building being fireproof alone prevented a conflagration. A woman came to the house who was in the habit of sleeping with a dim light in her room, and the electric lamp bothered her. She either had to let it burn brightly, or else turn it off altogether. Finally she hit upon the idea of wrapping a towel around it. Then she began to question whether the towel would catch fire. Then she adopted the happy expedient of wetting the towel. That was the worst thing that she could do. She soon dropped asleep, and of course the towel soon began to burn. A blazing piece dropped on the curtains, and soon the whole room was afire. She was badly scared, and, of course, the contents of the room were ruined.—*N. Y. Tribune*.

THE SANITATION OF THE ROMAN CAMPAGNA.—Dr. S. W. Abbot translates as follows from the *Giorno del Genio Civile* for 1893: The malarial character of the Pontine marshes has been known for centuries. The region has become deserted on account of its poisonous exhalations, due to imperfect drainage, and the peculiar character of its undulating volcanic soil. Soon after the unification of the Kingdom of Italy, the reclamation of this region began to receive careful consideration from the Government, and various measures were proposed to remedy the evil. At one place, plantations of eucalyptus trees were made, which proved a failure so far as an effectual amelioration of the miasma was concerned. The drainage of the soil finally was believed to be the proper remedy, and the work was entered upon soon after the enactment of a law of 1878 providing for the carrying out of the scheme. The basin, fringing the ancient, but now disused southern arm of the Tiber estuary, on which once stood the City of Ostia, contains a low-lying tract having the following area:

a. Permanently submerged.....	1,690 Acres
b. Inundated in winter.....	768 "
c. Saturated and useless.....	2,008 "
d. Higher ground, fairly drv.....	227 "
A total of 4,693 acres, or about 7 1-3 square miles.	

The upper levels are to be drained by gravitation, and the lower areas by pumping. The high-level drains comprise a total length of nearly 79,000 feet. Two engines pump the water of the low levels. The pumps were started in December, 1889, with the water about twelve inches above the marshes; and after 116 hours of intermittent working, the water-level was reduced over the whole marsh 19½ inches. After this the work was continued at different times till the water-level was reduced six feet lower. The average working period is 1,200 hours per year. The cost of the whole works, including working expenses and maintenance, has been about \$115 per acre.

CIRCUMSTANCES ALTER CASES: A TALE OF CO-OPERATION.—A coal mine at Monthieux, near St. Etienne, in the Department of the Loire, was abandoned by its owners several years ago because it could no longer be worked at a profit. The discharged miners finding themselves without work, formed a coöperative concern and obtained a title to the abandoned mine. They then set to work and by opening new veins, by observing strict economy and unflagging industry, made the mine pay. Now note the result. The mine-workers in the neighborhood, engaged with their employers in an eternal wrangle over wages, sought, and in many cases secured, employment in the coöperative concern. The founders of the latter, however, would not admit the new-comers on equal terms with themselves. When it came to the question of wages, for instance, they would not pay to the new men the same rates that were paid to the men who, by extraordinary efforts, had turned a worthless hole in the ground into a paying piece of property. When the new miners resisted and created a disturbance, the aid of the police was invoked and the disappointed element was dispersed. No doubt they looked upon themselves as the victims of capital and the slaves of a mushroom bourgeoisie. To an outsider it only illustrates that thrift, industry and perseverance lead to success, and that men exhibiting these qualities are not likely, whether wage-earners or capitalists, to allow shiftlessness and indolence to run away with the fruits of their labors.—*N. Y. Tribune*.

CHEMICAL TESTS OF WATER.—Physicians are now generally of the opinion that impurities of organic origin are alone the dangerous element in drinking-water, and that by far the greatest risk to the health of the community is incurred by using water containing certain living organisms which are capable of producing specific effects when introduced into the alimentary tract. An argument employed with much plausibility in this connection is that the presence of organic matter can be most certainly demonstrated by chemical analysis, but by this means it is impossible to demonstrate whether the organic matter contains living organisms. All organic matter, it is well understood, does not contain them, so that a chemical analysis of water alone is misleading. It is further argued that they can most certainly and accurately determine the chlorides, nitrates, phosphates and ammonia of organic matter, and of the amount of oxygen consumed, all of which is of great importance as an index of the purity or the impurity; thus, water from some sources might contain excess of nitrates and mean nothing, while another sample containing less nitrates and from a different source, might be unfit for use. Extraneous conclusions may also be drawn from the determination of oxygen consumed and of albuminoid ammonia.—*N. Y. Tribune*.

TO REPRODUCE THE COURT OF HONOR IN MARBLE.—A meeting of the World's Fair Directors was called recently. The notices were cancelled, however, and the meeting postponed until Fall. If the Directors consider favorably proposals that will be made, Director James W. Ellsworth said, in positive terms, an impetus would be given to a project for the reproduction of the Court of Honor of the World's Fair on the lake front. An expenditure of \$10,000,000 will be necessary, and of this amount, he says, \$450,000 has already been promised by two persons. "I am not at the head of the movement to reproduce the glories of the Court of Honor," said Mr. Ellsworth, "but I am largely interested in it. A few of us have got together and looked deeply into the practicability of the project. We have seen D. H. Burnham, architect of the Fair, and obtained from him close estimates of the cost of rebuilding in white marble the structures which lined all four sides of the great basin. We have included the Administration Building at one end and the Peristyle at the other. The cost of the MacMonnies Fountain recast in bronze and of the statuary on the banks of the basin in the same material has been included, and it is found that \$10,000,000 will cover the cost of everything."—*Chicago Tribune*.

CHANGES IN OLD PALACE YARD, LONDON.—It is announced that the negotiations for acquiring the houses in Old Palace Yard, Westminster, the removal of which was unanimously recommended by the Royal Commission on Westminster Abbey, on the ground that they "not only attempted to conceal to a great extent the architecture of the chapel of Henry VII and the ancient chapter-house, but are also a constant source of danger to the Abbey from fire," are now practically completed. The price to be paid to the Ecclesiastical Commissioners for the freehold was agreed upon some months ago; and the only leaseholder who was unwilling to dispose of his interest on the terms proposed has consented to refer the matter to an arbitrator. According to the present outlook, the authorities will be in a position to begin operations almost immediately; but, as it is undesirable that the work of demolition should be begun while Parliament is sitting, things will probably be left as they are until later in the year. As soon as the houses have been removed, the space cleared will be turfed over, so that the public may be enabled to view Henry VII's chapel and the chapter-house under favorable conditions, and form an opinion as to the advisability of utilizing a part of this space for the erection of a monumental chapel, as has been suggested by Mr. Yates Thompson.—*N. Y. Evening Post*.

ST. PETER'S, LONDON.—On June 29, Cardinal Vaughan laid the corner-stone of the new Catholic Cathedral, at Westminster. The site of building, which is to cost £150,000, is in the rear of the Ashley Gardens. The late Cardinal Manning declared that so long as there were poor people in London without roofs over their heads, he would build no cathedral in the English metropolis. A different spirit, however, has animated his successor in the See of Westminster, and soon after he became Archbishop he started a movement to erect a great minster there. Last summer, when half of the necessary money was subscribed, the designs for the structure were adopted, and the time for laying the corner-stone was fixed to take place on St. Peter and St. Paul's day. The Roman Catholic Cathedral of St. Peter, as it is to be called, is to be a basilica, on the general lines of Constantine's Church of St. Peter, at Rome. The interior is to be 350' long, 170' wide, 100' high, and to seat 8,000, with standing-room for 2,000 more, and a monastery for seventy-five inmates, which it is designed to invite the Benedictines, who for centuries owned Westminster Abbey, to occupy. The Duke of Norfolk contributed £20,000 to the fund for the erection of the Cathedral, and it is provided that all persons giving £1,000 or more shall have their names inscribed on the building.—*Philadelphia Telegraph*.

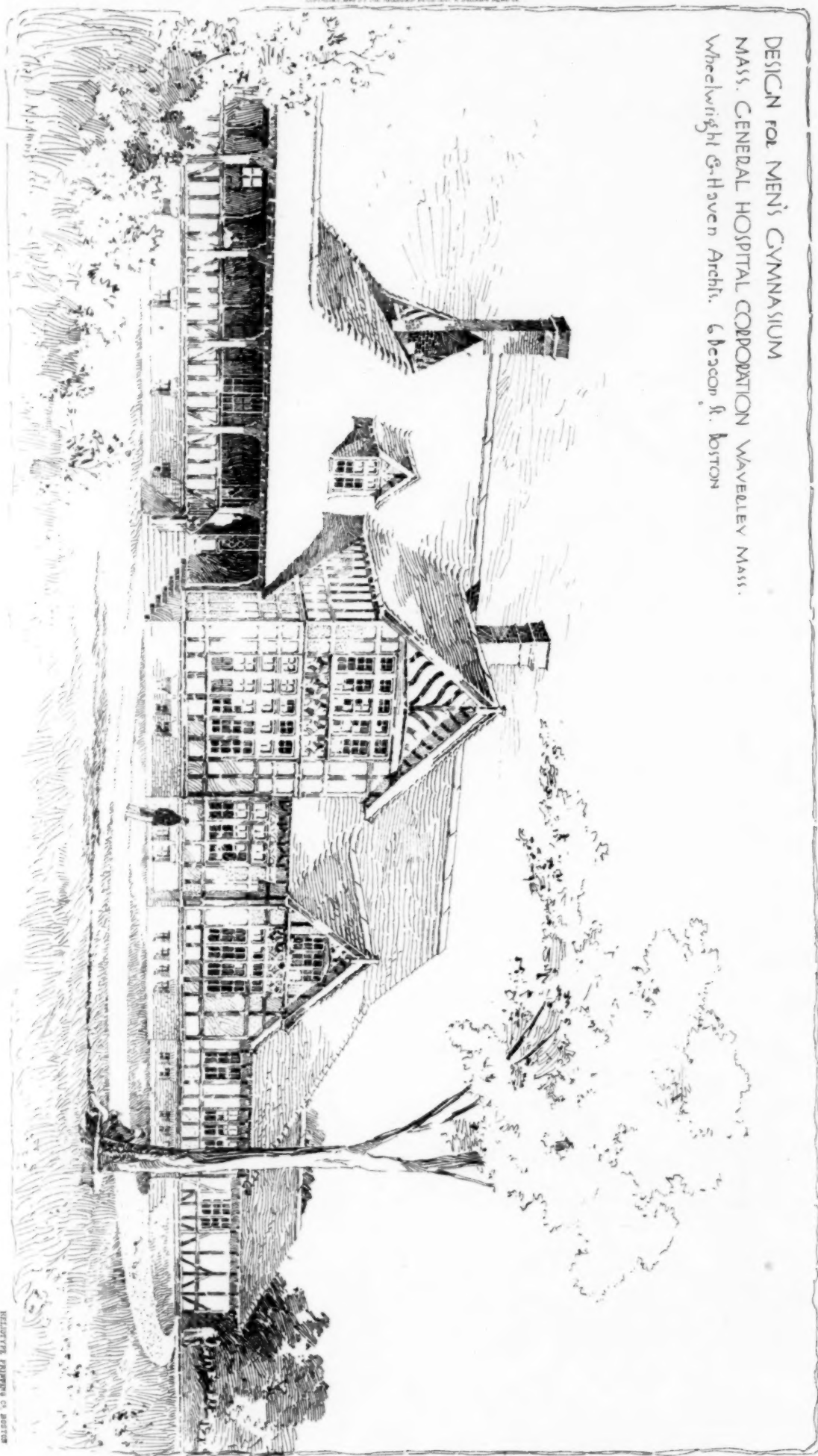
BUILDING A LEVEE WITH FORCE-PUMPS.—Captain George McC. Derby, the able young engineering officer who has charge of the Federal engineers in this city, yesterday announced that the attempted feat of building a levee with force-pumps on the great dredge, the "Ram," was successful. Captain Derby, believing that levees could be built by this means, attempted the experiment on the levee at Nine-mile Point, opposite Carrollton. Captain Derby cannot state yet what the real result of his experiment exactly is, as the present attempt was made with a view to discover a method rather than to avoid expense. Four attempts were made by the engineers. The levee existing at Nine-mile Point before the "Ram" went to work was of small section and low height. It was desired to enlarge it to a size almost as great again as it then was. The "Ram" was stationed about 400 feet away, and the piping was laid to the work, so as to permit the pumps to send a stream of sand and water, scooped from the river bottom, to the work. This stream was delivered at a height of about ten feet, and the volume of water was so great that the consistency of the mass was very thin. Captain Derby first threw up a small levee behind the original one, and attempted to fill-in the space between the two. It was found that the silt was readily deposited, while the water ran off, leaving a thick, heavy mass of solid earth. As soon as this topped the rear embankment, an effort was made to raise the barrier by increasing its height from the deposit made from the pumps. The material was, however, too dense and glutinous to be worked fast enough, and a crevasse occurred. This method was then abandoned. A framework of laths, covered with jute bagging, was substituted for the small rear levee, it being thought that the water would pass readily through the bagging and the silt be retained. The result was fairly satisfactory, but very expensive. Planking was then substituted on timber frames, but the stream ate out the toe of the framework and the fluid escaped. The last method was very ingenious. It was found both cheap and efficient. Captain Derby took a plank one foot wide and pinned it on edge about twelve feet away from the toe of the old levee. The board was driven a small distance into the turf, in order to prevent the material from seeping under and escaping. The pumps were started, and in a few minutes a terrace was formed as high as a board, the water escaping over the board. Then a second board was set on the terrace a few feet nearer the old levee. This, too, was filled in, forming a second terrace. It was found, however, that when each terrace was filled up entirely to the height of its defending board, a crevasse was likely to occur when the next terrace was built, and the work ran grave chances of being demolished. Captain Derby obviated this by leaving four inches of each terrace unfilled, thus forming between the toe of the upper terrace and the board defending the outer edge of the lower terrace a sort of cup, into which the overflow from any subsequent crevasse was caught and held. This method was found to work perfectly. Of course, in an enterprise of this kind, its practicability depends on the cost per yard of work done by the dredge. The "Ram" is very powerful, having been built under contract to deliver 300 cubic yards of material 300 feet distant from the dredge every hour. In practice it was found that she could deliver about 2,000 yards per working-day of ten hours. The total cost per cubic yard of a levee built by the "Ram" to a height of ten feet will be 3.91 cents per yard. Hitherto the price of levee work has ranged from 10 to 12½ cents, on an average, per cubic yard.—*New Orleans Picayune*.

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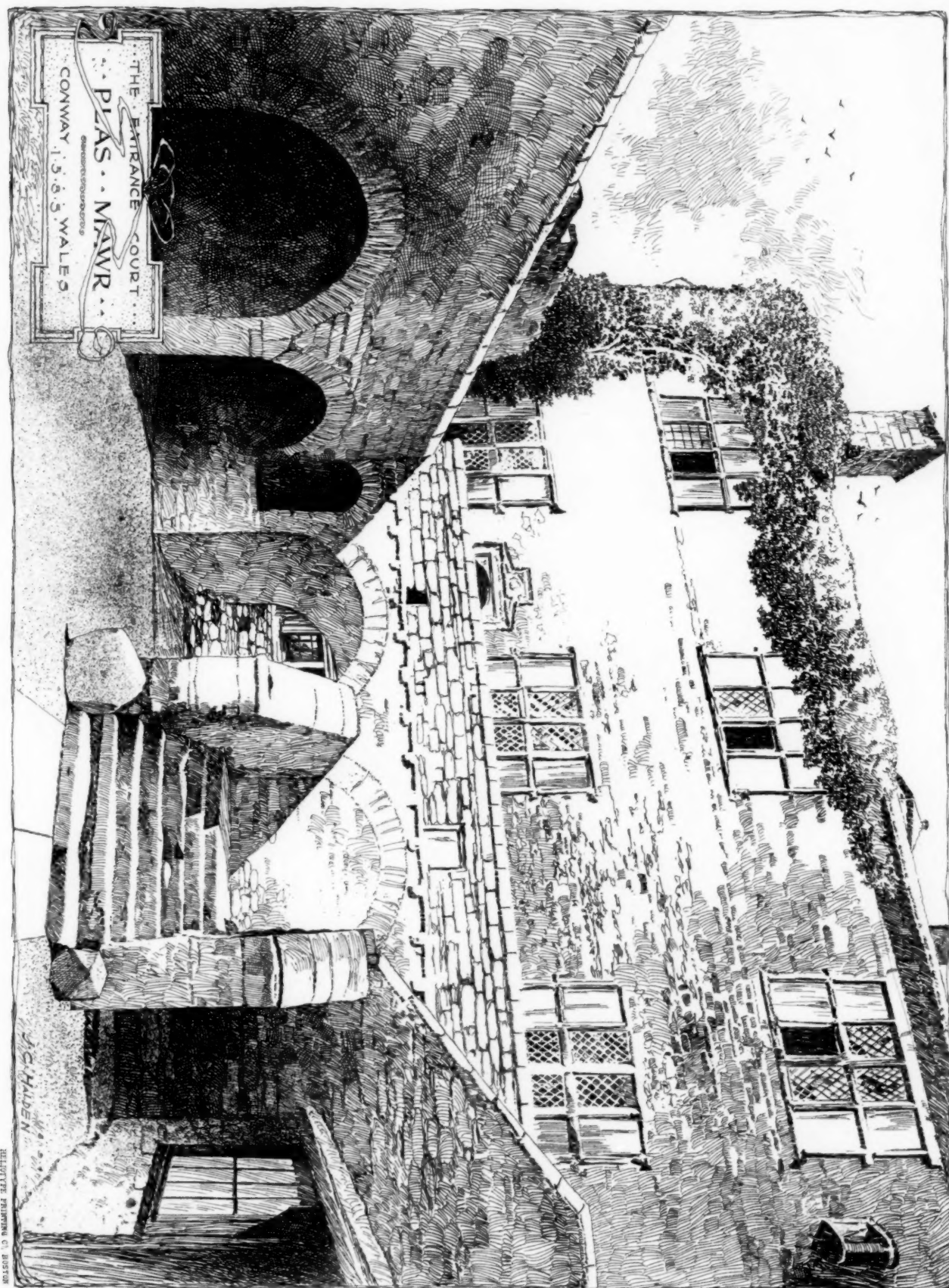
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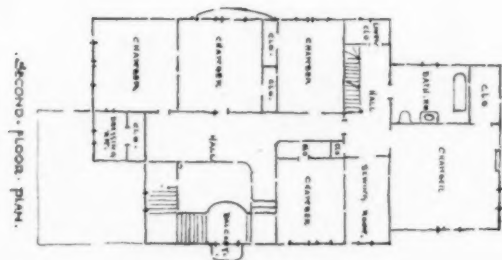
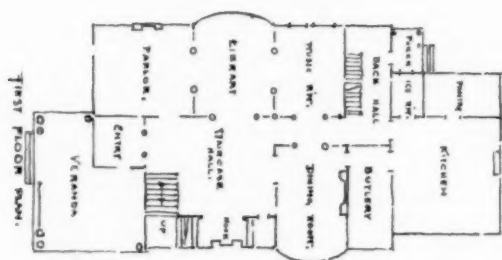
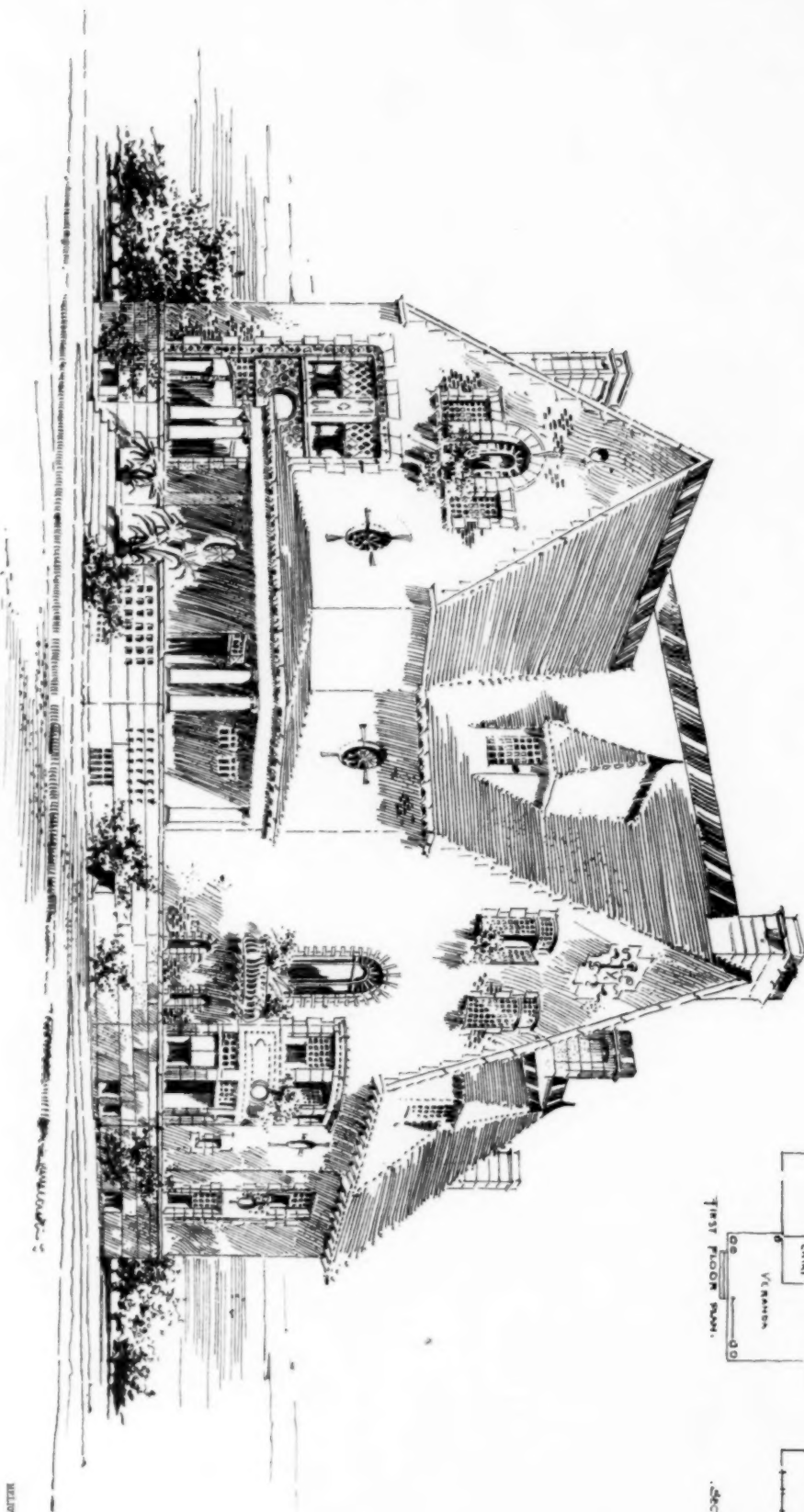
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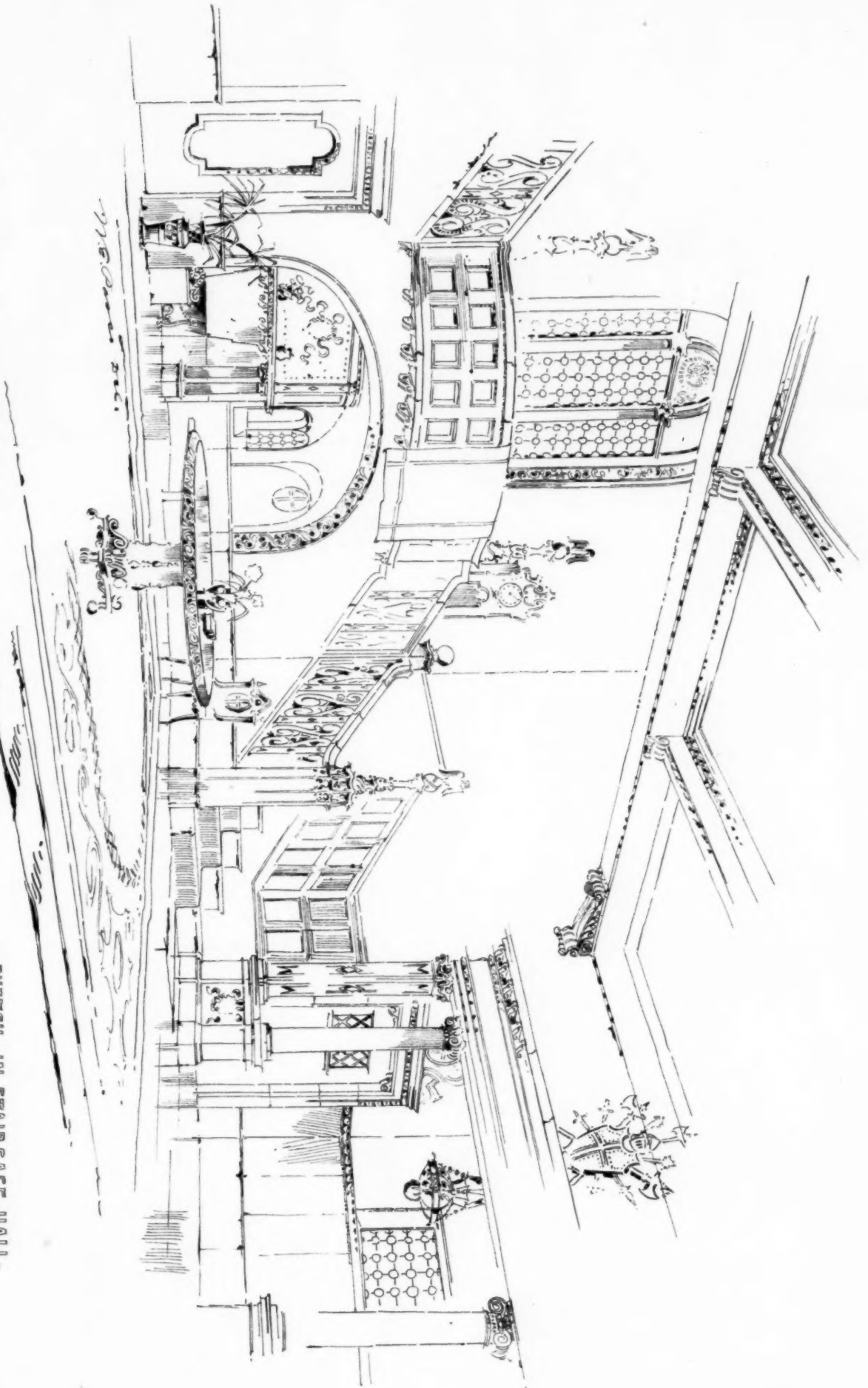


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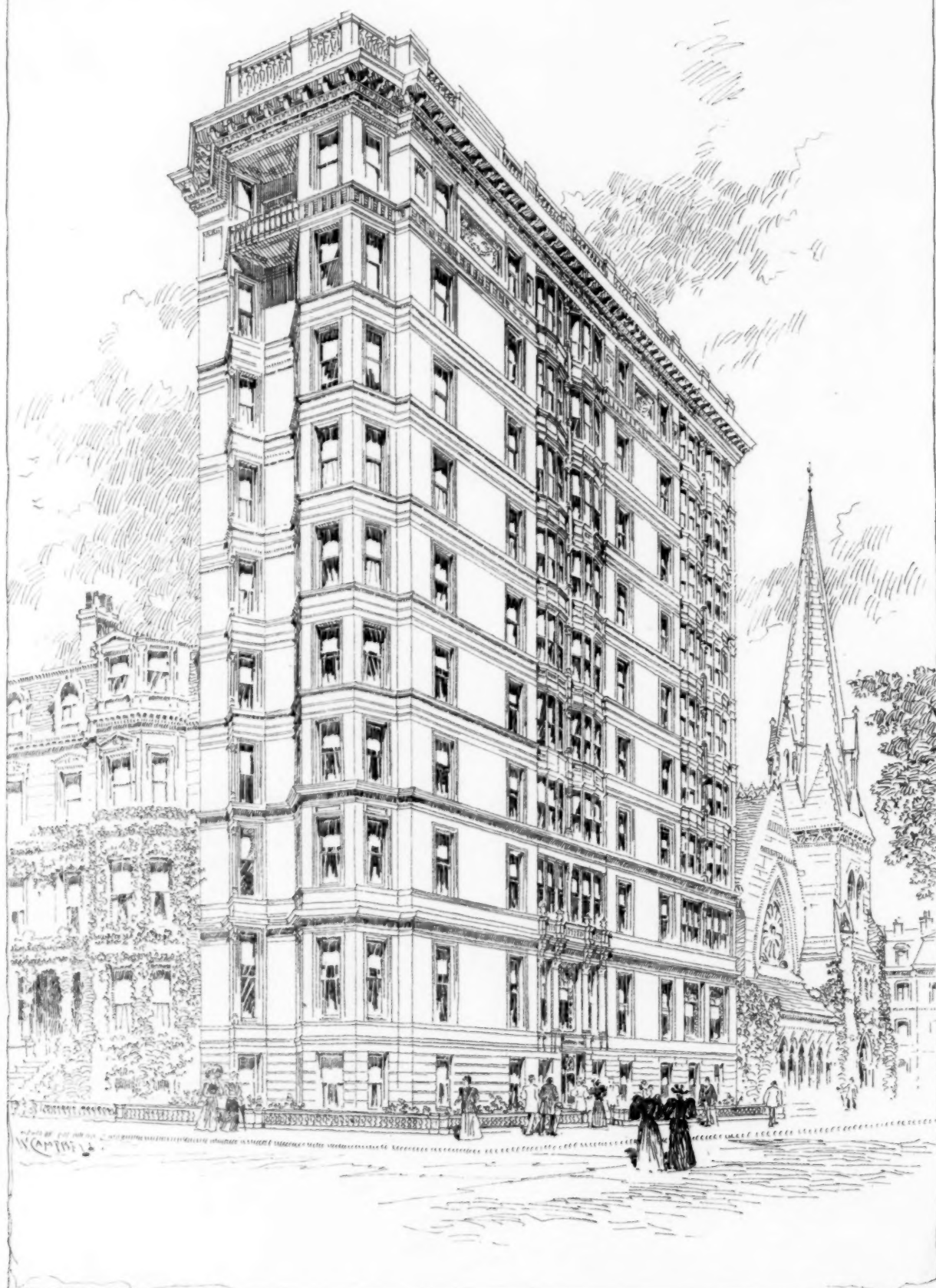
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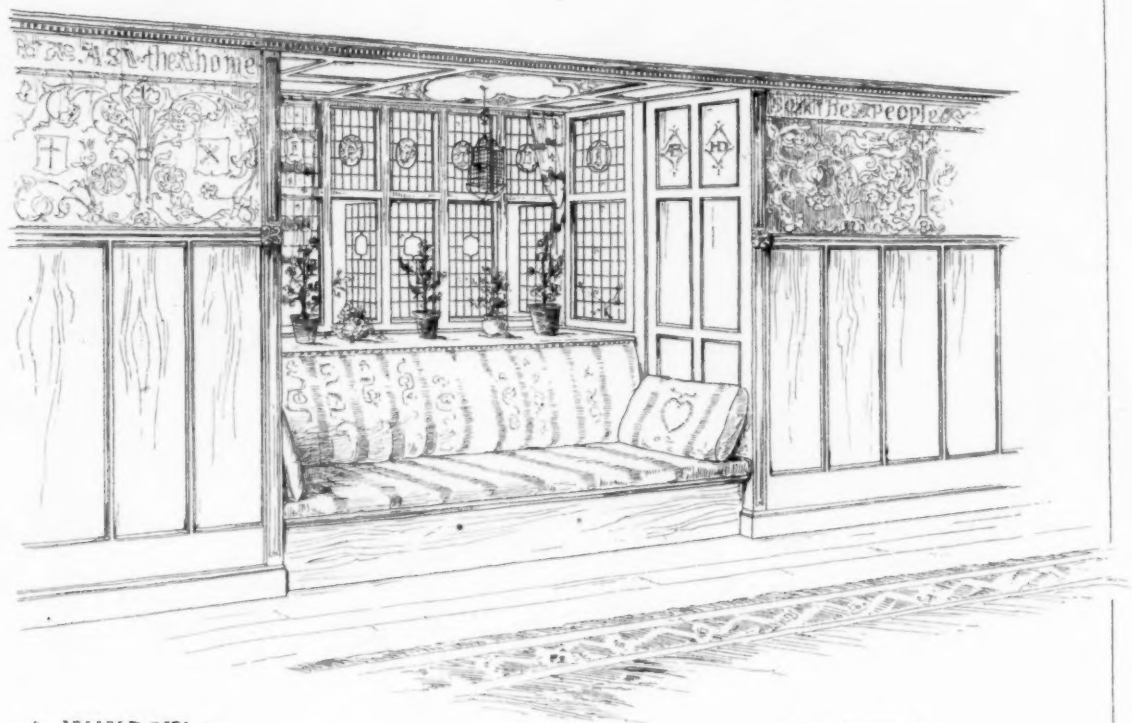
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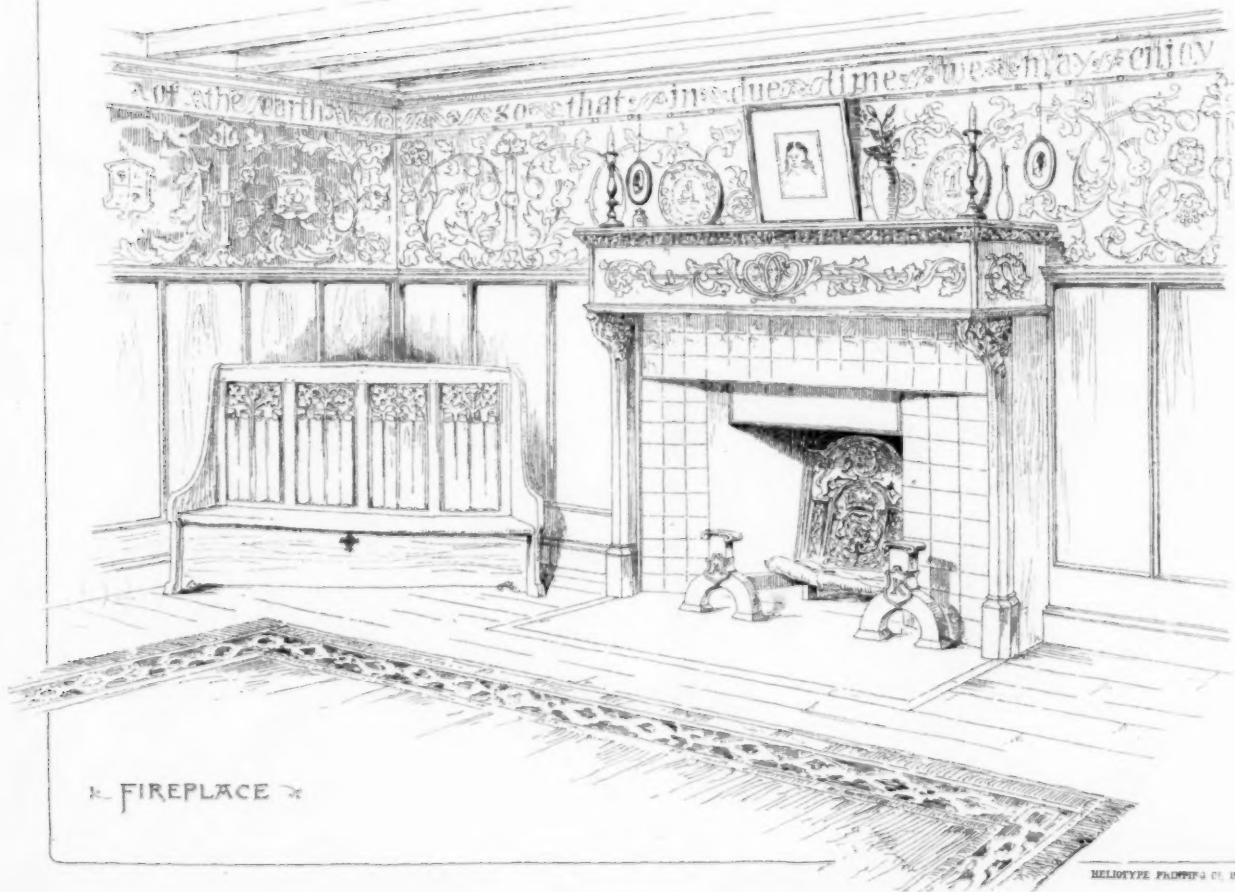
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* WINDOW *

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