THE BRICKBUILDER

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STEEL AND TERRA-COTTA BUILDINGS IN CHICAGO, AND SOME DEDUCTIONS.

DURING the period included between the years 1889 and the present one of grace, local architectural history has been marked on several occasions, increasing in frequency during the latter part of the period, by the erection of office buildings exhibiting in their external construction a new departure in the exclusive use of terra-cotta as the protective material, a material which complements in the highest way with fireproofing qualities, great flexibility and capability of beauty, the strength and economy of steel, the use of which, with its own peculiar system of construction, has rendered these Ossa-on-Pelion buildings possible. Steel, mighty and sufficient to a certain point, needs to be used in connection with some other material which can supply its deficiencies; and stone and brick work, hitherto used for this purpose, being rigidly governed and limited by their own laws of material and construction, are consequently intractable to a degree which renders unsuccessful any attempt to express through their medium the totally different ideas and principles which dominate the steel skeleton system.

Possessing all the weathering and protective qualities of stone and brick, and also the pliability in which they are so lacking, the advent of terra-cotta (though new only in this connection) is therefore of the greatest importance, its use in combination with steel creating an entity which promises that a full development of its artistic possibilities will at last permit steel construction to have an architectural expression of its own. We may, therefore, hope,—and certain signs which may be observed by those who look warrant one in doing so,—that the customary mask of distorted masonry forms, belonging to other styles of building, behind which the steel construction of the day is obliged to rear its head, will disappear in favor of this more flexible covering which, adaptive and pliable to a degree that brick and stone are far from being, will assume forms determined by and identified with the constructional principles of the steel it envelops, clinging round the column and the beam as the flesh covers the bone, and conferring like it that appearance of individuality by which men are recognized,—forms which, springing directly from the fundamental principles of a new construction, may prove from this relation the factors of a new architectural era, just as the forms of that entire system of expression known as Gothic architecture may be traced back to a single principle of stone construction, — the Vault and the Buttress.

New architectural forms are the result of new ideas, new artistic reasoning, and new material. Terra-cotta and steel, representative as they are of modern ideas, and disposed as they will be in accordance with the artistic reasoning now beginning to formulate in recognition of the true nature of this co-operative material, have possibilities within themselves of an individual expression as great as that possessed in any other age by any other material; and to the styles represented by the brickwork of Babylon and Holland, the stonework of ancient Greece and mediæval Europe, we may soon add the steel construction of the New World. To those familiar with the high pitch of mechanic perfection which the constructional qualities of steel have already attained in the hands of the engineer, this may seem an unnecessary postponement, the number and size of the buildings of steel-skeleton construction seeming to indicate that that time has already arrived. That is, however, not so; steel construction of the present time, mighty and powerful as it is, still lacks artistic expression of its own; its only exterior indication in buildings reared by its help being the disregard which its strength has permitted architects to pay to the laws which should govern other material in construction.

The lack, so far, has been that of a material which, possessing the qualities in which steel is deficient, could at the same time entirely identify itself with steel forms.

These two causes, —

1. The limitation of steel;

2. The intractability of the materials hitherto relied on to supply those deficiencies,

may be assumed as the reason of the antagonism between architecture (as at present understood) and modern construction, and also why such possibilities of artistic expression still lay dormant in a material which has reached such high constructional perfection. The promise, therefore, which steel and terra-cotta in combination seems to give is a fair one; not from the desire nor from the necessity for a new architecture, but from the advisability of having something that is architecture, a condition which is not fulfilled by the hybridism of most of the late buildings, combinations of two distinct methods of construction, — steel and masonry, — chiefly remarkable for the way in which the laws, obedience to which has made stone architecture beautiful, are disregarded in forcing and adapting the structural forms of this method to a set of conditions both structurally and artistically opposed to its fundamental principles. The word "masonry" may here be considered as a generic term including terra-cotta, the use of which, up to the present time, has been mainly that of a substitute for stone.

The controversy as to the proper expression of office buildings has been much debated, profusely illustrated, and never settled. Disputes, accompanied by scornful shrugs, witty denunciations, and characterized by a half-appreciation of the truth, have been hotly waged as to which of the many older styles of building was the most legitimate mask for a new one, which, naked but unashamed, a giant sprung into full existence, has had to temporarily drape his young and virile limbs with the garments of his ancestors, all of which, whether of classic, Gothic, or nondescript pattern, have proven ill-fitting and become stretched and distorted in the attempt to cover so huge a bulk. The history of recent building shows the gradual substitution of steel columns and beams for all interior walls and partitions, and their subsequent usurpation of the duties performed first by the exterior wall, and second by the masonry piers into which this system gradu-

ally collected these walls. There has thus been developed a system of building which is, as stated, really a combination of two systems; one, the column and beam, or steel-skeleton construction, which is sufficient unto itself as far as strength and rigidity of structure are concerned; condensing the equivalent strength of huge masses of masonry into the smaller area of a stronger material; effecting economy of space and labor, yet needing to be complemented with a certain amount of the other — the superseded masonry construction — to fill the voids between column and column, and beam and beam, and also protect these steel members from their arch-enemy, — fire. The demand for light in office buildings has reduced the first part of this remnant of usefulness to a minimum of spandrel and mullion, so that the mere elemental protection of the steel framework which it envelops, but which in turn supports it, is the sole duty left to be performed in these modern monuments by the materials which, wielded by different hands and animated by different spirits, have reared the pyramid of the Pharaohs, the mediæval vault, and the Renaissance dome.

We have thus one system of construction masked by the material of another, with an ultimate expression as a consequence which is expressive of neither. The masonry, too intractable to express in its own material the real construction to which the building owes its stability, is, however, in spite of its reduced function, endowed by many architects of the present day with all the features that characterized it before the introduction of steel, when its duties were constructive and real: this, too, in spite of the fact that the amount of work done by the steel column receiving no exterior expression results in the masonry apparently performing all the exterior constructional work of the building, a state of affairs further complicated by the fact that the desire for light and the non-necessity for more material round the columns than protection from fire and weather demands has succeeded in reducing the bulk of masonry to a point where it is manifestly incapable of performing the duties ascribed to it. The use of masonry through all ages has developed an association in the minds of men of certain proportions and certain laws of structure imposed by the limits of the strength of material; and to minds occupied by these associations modern office buildings of the type under discussion, with their emaciated piers and obviously impossible arches, are utterly unconvincing as masonry structures; while the entire lack, so much to be deplored, of any expression of their real construction (beyond the crude disregard of the laws of the apparent construction) admits of no satisfactory effect on either eye or intelligence. They are mainly attempts to achieve the truthful and brilliant expression associated with certain forms by the use of an attenuated exaggeration of these forms, entirely void of their peculiar spirit or of the ideas they once expressed.

The advent of any material, therefore, whose use in conjunction with steel shall admit of buildings with forms true to construction, and expressive of the ideas and emotions of the present age, is one that can only be regarded as of the greatest importance.

Messrs. Burnham & Root in 1889, in the two façades of the Rand-McNally Building, inaugurated locally the extensive use which terra-cotta as a protective covering has since attained. Amply tested as far as weathering properties are concerned in the dozen or more important buildings which have followed the example set in the Rand-McNally, terra-cotta stands to-day a valuable and highly appreciated material, but one whose greatest property has yet to be made use of. The development so far has been entirely in the direction of its more decorative properties of color and ornamental surface, and the wonderful capabilities of the material in these regards have been abundantly proven. Limited somewhat in variety of texture, this deficiency has been filled by abundant use of decorated surface. Textures vary, in themselves and in the effect of strength produced, from the rough, coarsely hewn stone, which, with its vigorous crystallizations, seems capable of resisting great pressure, to the finely tooled surfaces in which this appearance has been smoothed away with an apparent loss of strength. The result of decorating large surfaces being to confer an appearance of artificial texture, the effects of rock-faced and fine axed stonework, and all the intermediary stages, have been paralleled in terra-cotta by the application of ornament; modelled decoration of bold and vigorous design, with large and deeply cut interspaces being akin to the quarry-faced surface on stone, and having, like it, an appearance of strength, while a surface covered with ornament of fine and minute detail reproduces more nearly the effect of a finely tooled stone.

THE MARSHALL FIELD BUILDING, CHICAGO.
D. H. Burnham, Architect.

This quality of easily recording decorative impress has been taken advantage of to a great degree, and perhaps has been largely responsible for the little development of the still more valuable property possessed by terra-cotta of expressing, by reason of its great ductility, the true nature of the substructure it shields. Two recent buildings, the Marshall Field Building, D. H. Burnham, architect, and the Columbus Building, for which W. W. Boyington is responsible, employ terra-cotta of the most ornate character. The Field Building, a store and office building nine stories high, and covering a quarter of a block, has the first three stories of granite and the next three of most elaborately modelled terra-cotta, the decoration emphasizing the character and function of each block, and giving an effect of interesting wall surface that is most grateful. The two stories above are of brick and terra-cotta, while the top story, and the cornice, with

which it is to a certain degree incorporated, are again of terra-cotta of entirely decorative surface. The first three stories are in use as the store and tea room of Messrs. Field & Co., the next three being workrooms, etc., in connection with their business; while the remainder are offices. These divisions are clearly expressed exteriorly, the fenestration being admirable, especially in the re-enforcement of the angles of the fourth, fifth, and sixth stories; the elaborate surface decoration, mainly classic and Renaissance in motive, serving also to emphasize this expression of function, and though covering a large portion of the building never absorbing or hiding, but rather accentuating the mass. The entire effect is one of great dignity and scholarliness, of cellular function clearly expressed and material rightly used.

The vertical lines which characterize the Columbus Building give it an entirely different expression to the one of repose which the Field Building derives from its many emphasized horizontal joints and divisions, and these two buildings may be taken as typical of their two different systems of construction. The walls of the Field Building constitute a self-supporting masonry shell which also carries its proportion of the floor loads and owes none of its rigidity to steel. These conditions insure compliance with all laws of masonry construction, and we are consequently not shocked by any of the vagaries which a hidden steel support has enabled some architects to play with architectural forms.

The Columbus Building, on the other hand, has no exterior wall in a masonry sense at all, the construction consisting of a number of columns and beams covered with a fire-proofing coating of terra-cotta of modelled and plain surfaces, —a construction which owes allegiance only to the principles of steel. In spite of this, however, the protective material has been disposed in masonry forms, subverted wherever necessary to the exigencies of the real construction. This tendency toward allowing the steel to determine the forms of the terra-cotta, if carried to its legitimate conclusion, might have resulted in a truthful expression of a steel building, but for the insistence on an ultimate expression of masonry construction that now characterizes it, meagre and unconvincing to eyes educated by association with the proper proportions of true masonry construction.

COLUMBUS BUILDING, CHICAGO.
W. W. Boyington, Architect.

The designer had in this case an opportunity which he neglected, —a fault to be found in nearly all the buildings.

Here was a steel building, complete in itself, except for certain elemental protection which its nature demanded, such protection being admirably rendered by terra-cotta, a material ductile to the greatest degree. What, then, would be the natural artistic reasoning in manipulating such covering? Why, surely this: Here is a building having been built of a certain material, which is sufficient as far as strength is concerned, admirable in the economy of space and labor which its use permits, possessing endless possibilities, but brought into a regular and ordered system by means of certain laws and principles which rigidly govern its use. This material has, however, to be supplemented in one regard by some other material, and one is quickly found whose chemical composition renders it perfect for such purpose, while at the same time it possesses unbounded capabilities of recording artistic thought; it owes obedience to no system of laws which would be antagonistic to its use in the proposed position; it is weak where the strength of the steel renders such weakness unimportant, and possesses to a very high degree those qualities wherein steel is deficient. Having thus the building of steel on the one hand, and this subsidiary material on the other, it would be by far the most natural, the most logical, and the most artistic proceeding to apply this protective coat to the steel skeleton in such a manner that the steel construction should determine all forms, and dominate the ultimate expression: that the terra-cotta should faithfully follow each line, advance where the steel advances, and retreat where such is the action of the construction, indicating joint or connection, flange, cap, and bracket, —a true and faithful indication of the substructure, modelled into beauty by the hand which applies it. Instead of this reasoning, however, another one is followed at the present day, resulting in buildings which would be terrible in their hopelessness did one not know that they are merely transitional features in the progress towards a better state of affairs; and that such buildings wherein the real construction vainly struggles for expression under an elaborate travesty of masonry forms, will be considered in their proper light merely as the anomalous productions of a disturbed period of transition before the iron-setter finally triumphed over the mason.

The necessity of a tower on a modern business building has perhaps never been demonstrated to a sufficient degree to permit one to accept, for the sake of others, the specimen which in company with an aggregation of gables and domes constitutes a top for the Columbus Building of the utmost rampant fussiness. Fully appreciative of the better effect upon our streets that varied and picturesque sky lines have the power to confer, one nevertheless prefers them to be logical developments, and regrets that the Columbus Building was not terminated at the thirteenth story, the simple and legitimate outline of which is infinitely preferable to the arbitrarily disposed masses, which, inconsequential and having no connection with the rest of the building, are piled in confusion above in a vain attempt to please a vaguely wondering eye.

The chief sensuous impression left by the building is one of perpendicular lines bound together at the sixth, twelfth, and thirteenth

stories by bands of elaborate decoration. With the exception of these decorated courses all ornamentation is limited to the spandrels, which, recessed from the columns and mullions, still further emphasize the smallness and thinness of their masonry character. In this regard the building is a distinct contrast to its neighbor, the Venetian Building, a steel-skeleton frame, protected with brick and terra-cotta. Here the first nine floors are emphatically divided by heavy horizontal lines, a treatment logical enough (as indicative of floors), but which is suddenly abandoned in the tenth story for an entirely opposite motif, whereby two stories are merged, as far as exterior expression goes, into one; the piers, so consistently divided below, running without a break through two stories, the windows of which are treated as an elaborate Romanesque arcade of terra-cotta. This curious treatment is also to be observed in the Old Colony Building by the same firm, and though the reasoning of which it is presumably the outcome may be logical enough, one fails to appreciate what idea it is intended to express. The terra-cotta of the Columbus Building is of a reddish brown color, and the decorative detail is marked with great effort after what is popularly known as picturesqueness, consisting mainly of shields, coats-of-arms, and other forms apparently connected with the life of Columbus; a slight infusion of eagles testifying that unabated patriotism qualifies this tremendous admiration for a foreigner. The feeling pervading all the modelling is distinctly French, and impresses one as being the work of a different mind from that which conceived the building as a whole. Barring the extraordinary congregation crowded on top of it, the building has a certain look of alertness and activity due to the slight degree to which the construction has been permitted to show itself, the continuity of simple, straight line where allowed conveying an impression of *élan* which argues well for the effect of future progression in the same direction.

The group of buildings designed by Messrs. Adler & Sullivan differs largely in character from those just considered; and, though opinions may differ as to their beauty, they are consistent expressions of certain ideas, and embody in their mass the views of this well-known firm.

The Schiller theatre and the new Stock Exchange Building (see plates 6 and 7) are both steel construction covered entirely with terra-cotta, and evidence very largely a great and growing appreciation of this material in its new application.

The Schiller, a theatre and office building, has a façade in which the central portion is continued eight stories above the remainder and treated as a tower from base to cornice. The simplicity of the massing and the unity of effect that has been achieved are very striking, and is still further heightened by the plainness of the surface treatment and the judicious distribution of the ornamental relief, — a disposition which ably reflects Mr. Sullivan's views that such ornaments should be entirely subsidiary to the massing, and that its absence should in no way affect the general impression. That fatal crux, the difficulty of harmonizing the imperatively necessary large openings in the first story with the massiveness of the superstructure, has been encountered in this building as in so many others; and herein is the weak point of the building. The introduction of an elaborately ornamental balcony at the second story, instead of providing a transition from the large voids below to the lesser openings above, with the suggestion of weight which their surrounding wall surface gives, serves only to confuse the mind as to the point from which the tower springs, and deprives the latter of the greater effectiveness it would gain from a clear and pronounced footing on the ground. The simple straightness of the tower piers, — one uninterrupted line for fifteen stories, — and the consequent idea of a direct transmission of weight, renders an appearance of adequate basic support for this tremendous load most necessary for any completeness of æsthetic satisfaction. The balcony, however, introduces rather an element of confusion into the hitherto clear and natural scheme of transmission, interrupting it just where a clear view is most necessary.

This difficulty, so often encountered with disastrous results, is yet one that with our present resources seems avoidable. If, as is evidently so, the first-story supports are adequate for the weights they carry, it should be possible to express this fact convincingly, and thus convey a satisfactory sensuous expression. The material that performs this tremendous work is steel, and, again, steel superimposed on steel. In terra-cotta we now have a material which can make this construction as evident in the finished building as it is when the columns and beams stand naked of all other material. The clay, properly moulded on the columns and assuming their constructive forms, would create a satisfactory artistic expression of their mathematically sufficient capabilities. One can, however, forget this fault in gazing at the top, where, after an uninterrupted spring from the second story, the tower piers are terminated with arches at the sixteenth, and the openings of the seventeeth become an arcade surrounded with a wide band of surface ornament, similar to that which effectively decorates the boldly projecting, absolutely rectangular cornice.

A fact that strikes one in regarding the building is that from the first-story columns to the cupola of the tower there is not a single form that is not enclosed either by straight lines or straight lines and a semicircle. This simplicity of outlines undoubtedly aids in emphasizing the effectiveness due to the simple massing, and helps to confer on the building its characteristic air of magnificent self-poise and serenely born decoration. This latter quality is throughout very individual, and very effectively used. A slight fault both of composition and expression is to be found in the pilasters, which are placed on each side of every window of the tower. These not only destroy in some slight degree the unity of expression which the building presents (by an after intrusion on the attention), but in their seeming support of the entire lintel convey an impression totally at variance with the straight joints of the latter, which indicate that some support not visible is the means of their retention in position.

The terra-cotta throughout is brown in color, set with red mortar joints, the blocks of various heights being arranged as are quoins and filling in ashlar masonry.

The Stock Exchange Building, by the same architects, is one of the latest buildings that has been erected in town, and, being entirely of steel and terra-cotta, one naturally looks with interest to see if the movement toward the expression of steel construction which the sheer line of the Schiller piers seemed to inaugurate, has attained any further development. One looks in vain, however; the building has the rectangular simplicity of outline so characteristic of this firm, and is to a certain degree clearly expressive of the cellular function; but there is no indication of construction except where it is self-evident that something beyond the apparent means must have been employed. The ground floor is occupied by stores, the second and third on the left of the entrance by the stock exchange hall, two stories high, and on the right by banking concerns. The next nine stories are offices, and in this portion there is absolute unity of expression; the disinclination observable lately in big buildings to endow window openings with any character has culminated here in an absolute denial to recognize them except as mere openings framed simply and similarly; bays being depended upon to give relief to what might otherwise seem like vacant staring.

The ornamental modelling on this building is treated in a much more delicate way than is the Schiller work; and Mr. Sullivan states his belief that this material, which will record the impress of a thumb, has still further capabilities of refinement in this direction looking forward to the time when even the plain terra-cotta blocks shall be hand-modelled. The desire to use the decoration so that its entire absence would not affect the mass of the building is everywhere the guiding idea in its disposition.

The buildings designed by Messrs. Adler & Sullivan always inspire interest on account of the ideas they express, — the recognition of the possibilities of impressiveness which these office buildings contain in their mere mass, their logical subdivision, the simplicity of outline so consistently emphasized throughout the buildings by the use of nothing but the simplest forms and the subordination of everything to a simple unity of effect; but at the same time one would like to record, with all courteous recognition of the necessity of other opinions, that, though the ideas represented are truthful and logical, they are

only half the truth, and that the buildings of this firm suffer not from what is in them, but from what has been omitted.

The office portion of the stock exchange, for instance, certainly satisfies that reasoning which insists that similar function be expressed by similar forms, but the repression of all character in the windows leaves unsatisfied that part of us which cries for beauty, and though one would welcome the same idea expressed through beautiful forms, one shrinks from giving any recognition to the rather barren means of attaining the same end now employed. The history of windows is the history of civilization, and from the time when as mere openings they were but incidents in the wall space, to the period when the mastery of the laws of poise and counterpoise permitted those magnificent combinations of painted glass and stone tracery through which the stained sunlight fell in glory of hue on the Christian worshipper, they, until the time when Renaissance rules bound and straightened them into non-expressive symmetry, expressed in their form their construction and the nature and importance of the cells to which they admitted light. In the Stock Exchange building these beautiful traditions receive no recognition whatever, the character of the openings being purely arbitrary, expressive of neither construction nor anything else, bad in proportion, and utterly lacking in interest or beauty, and indicative only of a desire to suppress and deny them. This, it must be admitted, is not the best way to extract the inherent good of anything. The Champlain Building, by Messrs. Holabird & Roche, is another example of this return to primitive principles carried to a greater extent.

Recent terra-cotta architecture would therefore seem to be far from satisfying those canons which demand in art creations truthful expression, unity, and, at the same time, variety; and in many buildings the bare steel skeleton is infinitely preferable to the ultimate appearance conferred by the protective material. The reason for this, I think, lies in the clinging to old forms which are not adapted to their present position, to the ill-assorted alliance between an elder and a younger method of building, in which the forms of one become a mere distortion consequent upon the attempt to make them express emotions with which they have no sympathetic connection; and to an attitude of misunderstanding which exists between architects and their materials.

Architectural forms are the result of constructive methods, and the methods are determined by material and artistic reasoning. Changes of ideas, changes of material, have resulted in new methods and new forms through the history of architecture until the present day, when the new forms of which new materials and new methods are capable lie undeveloped, while all energies are bent to reap the merely commercial benefits which accrue from the use of steel. It may safely be asserted that the main association of idea in connection with steel construction is entirely that of its commercial advantages over other materials, under present conditions, to the exclusion of every thought of what beauty of form and expression it is capable. In true architecture two great things are always to be found: —

I. Proper thought, care, and regard for all necessities of construction and the nature of material.

II. The analysis of motive and the proper expression of the idea with the material used.

The first part of this *sine qua non* receives attention as far as mere stability of construction is concerned, but the construction in steel buildings is always considered as a separate thing apart from the ultimate expression that the building is to assume. The structure as a whole is usually divided into three parts: the exterior consisting of such forms generally confined to those in use during some particular era, as the architect may be pleased to select; the interior also calling for discreet selection of the same sort; and the construction sandwiched between the two, a thing apart from both.

The remedy lies ready to our hands. When shall we learn to use it?

G. TWOSE.

Jan. 6, 1894.

BRICK AND MARBLE IN THE MIDDLE AGES.

CHAPTER I.

Yet waft me from the harbor-mouth,
Wild wind! I seek a warmer sky,
And I will see before I die
The palms and temples of the South.
— *Tennyson.*

ROUTES TO ITALY, PARIS, STRASBURG, ROUFFACH, BASEL.

AN architectural journey in Italy seems to afford about as much prospect of pleasure and information combined as any which it is possible for an English student to take. He may see, if time allows, so much on his road, that whether one thinks of the journey or the end of it, all is, at any rate in the perspective, charming. And in these days when, what with railways, through tickets, and Cook's and other guides for timid tourists, the journey from one end of Europe to the other is made so quickly and so cheaply as to be within most educated men's reach, it is no wonder if most of us in our turn make the venture.

Many are the ways by which one may reach the north of Italy, but one or two only of them seem now to be commonly used, to the exclusion of all others, and with great loss of pleasure to all travellers who make the journey more than once. The natural, because the quickest, road is now by the Mont Cenis tunnel to Turin, and for the country described in these pages nothing can be more convenient. But when my first journey was made it was more easy to take one of the passes leading to Milan, and so I went by the Splugen. Since those days I have found my way to and from Italy by other roads which I recommend strongly to others. I pass by such a well-known road as that by railway over the Brenner, in order to suggest three other roads, either of which brings the traveller down upon Venetia in the happiest possible frame of mind if he is at all capable of being moved to pleasure by the sight of exquisite scenery, pleasant and religious people, the roads and country not too much crowded with tourists.

The first of these is by the Lake of Constance, the Vorarlberg, and the Vintschgau to Botzen; the next by the Brenner pass through Cortina and Cadore-Titian's country to Conegliano, and so by railway to Venice, a road lighted up by the wild beauty of the Dolomite mountains and now unaccountably neglected by English tourists; the third, and perhaps the most charming, though somewhat indirect, and requiring more time, again by the Brenner as far as Franzensfeste, thence by railway to Lienz, stopping to see the fine church and Dolomite mountains at Innichen on the way, and then by country carriages from the Pusterhalin to the Gailthal, where there is the most charming combination I know of pastoral and picturesque scenery, seasoned by interesting old churches; and thence to Ober Tarvis and by the stern and magnificent Predil pass to the head of the Adriatic at Gorizia, whence, after seeing Aquileja and Grado, the traveller may, with halts at Udine and Pordenone, reach his goal at Venice by railway.

But in this my first journey to Italy, I was sufficiently happy in finding the Spulgen prescribed for me as on the whole the most convenient mode of reaching in succession all the spots which had most special interest for me. My scheme was to make myself fairly well acquainted with some of the most interesting Italian cities north of the Apennines, and for this purpose to descend from the Spulgen on Bergamo, and from thence to go on to Venice, halting as often as necessary by the way, and then to return by Mantua, Cremona, and Pavia, or by Ferrara, Bologna, Parma, and Piacenza to Milan, and so home. And railways, if they have made the journey somewhat more easy than it was, and have deprived it now and then of the charm which always attends the recollection of impediments and difficulties on the road, have not in any way altered the advantages of such a route for those whose tastes are at all akin to those which I carried abroad with me in those days, and carry still with undiminished strength. Whether, however, one enters Italy by one pass or another, the first part of one's journey is by the well-known road to Paris, which, by reason, I suppose, of its being the prelude to nearly every holiday tour that I make, never seems to be stale, old, or too well known.

There is something very novel, and it strikes me more every time it is seen, in the aspect of everything directly you have crossed the Channel. Indeed, there is no country in Europe so much as France, and no city, perhaps, so much as Paris, which strikes an Englishman as being foreign in its aspect, and new in all its customs and proceedings. The dress of every one, the arrangement of the railways, the harnessing and character of the horses, the mode of life in hotels, and the ordinary habits and pleasant traits of the middle classes, are all quite fresh to the English eye. Nor is the aspect of the country less so; fields cut up into small strips of a dozen kinds of crops, unprosperous-looking cows, each feeding discontentedly and drearily tethered to a man or woman, on a small patch of grass; corn cut and then stacked in small cocks for a month or two of exposure to the pleasant changes of the atmosphere: and the entire absence of hedge-rows and other trees than poplars, all go to make up a thoroughly un-English picture.

After skirting the coast and its dreary expanse of sand-hills, reminding one very much of those singular sands on the north coast of Cornwall, which are so often shifting about, covering up new churches, or uncovering the old oratory of some early British saint, we reach the banks of the Somme, and then travel along a poor peaty tract of country until the famous west front and short but lofty nave of Abbeville come in view. Thence by a valley (rather more rich than is common in good churches), we continue our race for Amiens. Among these churches I may instance the hipped, saddle-back roofed steeples of Picquigny, Hangest, and Pont Remy, as very valuable examples of their order: that of Picquigny, indeed, surmounting a central steeple, and finished at the top with some delicate open ironwork, is about as graceful a specimen as I know.

At Longpre is another church with a steeple of some pretension, but not satisfactory. It has a perforated spire of stone much too small for the size of the tower, and ungraceful in the extreme.

At Amiens one always longs to stop again and again to feast one's eyes upon its glorious cathedral, perhaps after Chartres and the Parthenon the noblest and most masculine piece of architecture in the world. But with us this was impossible; our destiny was, come what might, to endeavor at any rate to discharge ourselves in Paris within the shortest possible number of the early autumn evenings prevented our having more than the very slightest glimpse of the Minster.

The refreshment room at Amiens is one of the best I have ever been in, — reasonable, clean, and good, — and placed just at that happy distance from the sea at which the poor wretches who have been in the depths of woe on the passage begin to recover their presence of mind, and with it, of course, — as good Englishmen, — their appetites; what wonder, then, if the Buffet at Amiens prospers!

The rest of our journey to Paris was all performed in the dark, relieved only by the sight of the then long-expected comet, and it was almost midnight ere we found ourselves settled at our hotel.

I am never sorry to have a day in Paris. In spite of alterations and reconstructions which have converted an interesting old city into the most spick-and-span place in the world, there are even to the present day parts which are untouched by the improver, and full of a pleasant national character which seems to be little to the liking of the rulers of the French. There is, too, in spite of the changes which a great and rich city must always undergo, a great deal which is interesting to the architect. We may look at great engravings, and wish ourselves back in those old times when the walls surrounded the city, where now the Boulevards run round its heart, when the Temple and a number of other important buildings, now wholly destroyed, adorned the country just outside the walls; but the city which has still, among other architectural treasures, such churches as Notre Dame, S. Germain des Pres, the Sainte Chapelle, S. Martin des Champs, and a host of lesser lights, and the Chapel of Vincennes, and S. Denis within a short drive, is in quite a different category from such a city as London, and is indeed hardly second to any other in Europe in architectural interest.

To come to much later times and very different work, it is always pleasant to walk down the Boulevard des Italiens to the Madeleine, and for a few minutes to gaze at a church which certainly presents one very grand idea, — that of space clothed in very gorgeous dress. One always feels a certain sympathy for a church in which so many people are ever praying, and I have never yet been into this church without being able to count them by scores. The last time I was in Paris I remember being struck by seeing for the first time a peripteral building made really useful. The walls within the columns were hung with rich draperies, and a long procession coming out marched round the circuit of the church between the columns and the walls, and in again at the west door. The effect was, as may be imagined, very striking.

From the Madeleine we found our way to the new church of S. Clothilde, a large cruciform church, and the last erected in Paris in the Gothic style. Its design is intended to be of early character, but in reality is quite late in its effect; nor do I know when I have seen anything much less successful than the two western steeples rising but a short distance above the nave roof, and looking mean and weak to a degree. In plan the church is not badly arranged, there is just such a choir as might easily be properly used, and a large space for congregational purposes.

How much we want churches, in this respect at least, somewhat like S. Clothilde in our large cities in England!

There are here a great many windows filled with stained glass, executed, I believe, by Mons. Marischal. His windows are illustrations of a truth which men are very slow to receive and act upon: viz., that in decorating a transparent material, one whose transparency moreover is the sole cause of its use, we have no right to shade it with dark colors so far as to destroy its brilliancy. These windows were elaborately shaded, and, as a necessary consequence, were heavy and dismal in their effect, besides which most unpleasant mixtures of green, yellow, and ruby, and of ruby and blue — very glaring and very bad — abounded.

The carving of the capitals is, as is usually the case in recent foreign works, all derived from natural types of foliage, and is fairly well done; but the carving of rather elaborate sculptures of the "Stations" did not please me, having none of the severity of ancient examples. When shall we see a school of sculptors rise able really to satisfy the requirements of the times? I confess I despair more on this point than on any other; for I have as yet seen no fair attempt made to recover the style, or work upon the principles of the best mediæval sculptors. The work of our modern sculptors is nearly all foreign and unreal, and almost always involves the assumption that they are representing the proceedings of the Greeks or Romans, and not of the English; it is impossible, therefore, that such a school can be healthy, strong, or successful. We lack men who will give us (clothed with as much anatomical correctness as they like, so that they do not leave them lifeless and academical) representations of subjects from English history and national life, illustrations of the Scriptures which we still believe, of the faith we still profess, conceived in something of the architectonic and yet really dramatic and romantic spirit which marks the best sculpture of the Middle Ages. The strange thing is that, with works near at hand which few living men could rival, they absolutely refuse to study them at all, and I believe if we were to summon all the eminent sculptors to a conclave and put them to the question, not one in four of them would confess to having ever been to Chartres or Bourges, and four out of five would assert that it would have done them no good if they had. If they would give us anything at all comparable to the great works of the best Greeks, the case would be altogether different, but to be served with a *réchauffé* of the antique when one is crying out for something suitable to the present, is cause enough for the apathy of the English public about sculptors' work. We ask for English history or Bible story, and are treated to nymphs combing their hair; and for figures of our Lord and St. Peter, and get nothing but Musidoras and Clyties. No sculptor would lose much by the study of the best mediæval examples of drapery, and there are among the Gothic statues which deck the doors and porches of the churches I have named, some of the most admirable description, such as warrant any one, who is at all troubled with feeling for his art, in using strong

language about those who neglect them. In Italy we shall find the same careful shutting of men's eyes to what is good, simply because it belongs to the thirteenth or fourteenth centuries. Orvieto is left on one side in order to spend time over work not possessed of a tithe of the beauty of that on its cathedral façade; and, indeed, just as the French examples, they appear only too often never even to have been so much as heard of!

The study of ancient sculpture in England is not quite so easy, because our old buildings are not so rich in it as are the French; but if one is told — as one is too often — that the art of sculpture in the Middle Ages was unknown or rude in comparison with its state now, one may fairly refer to some of the modern attempts at its imitation for a proof that this was not the case, as, *e. g.*, to the recumbent effigy of Archbishop Howley at Canterbury, or to another, of some more humble individual, in the south transept of Chichester Cathedral; a glance only at which, and a comparison with some of the noble mediæval effigies lying in all the stateliness of their repose by their sides, will at once show any one that it is not merely necessary to put an effigy upon its back with its hands in prayer in order to vie with the effigies of the thirteenth and fourteenth centuries. The position is something, but not all, and requires very much more skill in its treatment than of late years we have had to bestow.

From S. Clothilde we went first to the pleasant gardens of the Luxembourg, — gardens which always make one envious for London, — and thence to Notre Dame. Here I always feel no slight pride in the success which its architect has achieved. Six hundred years have passed over Paris, one effort after another has been made, vast sums of money have been spent, and still this great work stands supreme and separated by a vast distance from all competition, and greatest beyond comparison of all Parisian buildings, not only in its general scheme, but equally in the admirable design and execution of every detail. There is much to be seen and learnt here in every way. The west doors are superb. The planning and construction are very fine, and the series of sculptures behind the stalls full of interest and well worthy of study.

From Notre Dame one goes, of course, to the Sainte Chapelle. When this journey was undertaken, everything about this *chef-d'œuvre* was gradually growing to perfection: the fleche was being put up on the roof, the painting on the walls was nearly finished, and the altar was in progress. Since then it has escaped, as it were, by a special Providence (and why not?) from the incendiary fire which destroyed almost the whole of the surrounding Palais de Justice, and it still rises uninjured among the ruins. Of all the chapels of the same kind it is certainly the most beautiful, and whether one names our own St. Stephen's, or thinks of others, such as the Chapel at S. Germer and the other at Riom, the Paris Chapel is certainly by far the finest — being, in truth, a real work of inspired genius.

Altogether, I cannot help thinking that the effect upon the mind of what one sees in Paris is very unsatisfactory; the revival of Christian art seems, as it were, to be only skin-deep; there seems to be no enthusiasm for it. What is done is done in the same way as other public works, as the business of the state, not by the will of the people. The scaffolding, which has just been removed from the avenue leading from the Tuileries to the Barriere de l'Etoile, after having assisted at the fete of Napoleon, was an illustration sufficiently apt of the work which seems to engage too many of the artists of Paris; Parisian fete composers and decorators really appear to be the architects of the day, and of course this fact must militate very much against real art in every branch, as its tendency is to make people accustomed to temporary exhibitions, the shortcomings of which are pardoned on the score of their temporary character; and so the artist is lowered in his tone by assisting in the production of works which are not intended — as all great works ought to be intended — to last for ages.

A day in Paris is generally a long and tiring one — and so we found it; but, nevertheless, we pushed on without delay, and, leaving our hotel before the *table-d'hôte* was much more than half over, we drove to the station of the Strasburg Railway, and in a few minutes we were *en route*. If any one doubts the possibility of really resting one's body in a railway carriage, let him take the same precaution that we took, and he need not despair: a day of sight-seeing in Paris is certainly the best possible recipe for sound sleep in a railway carriage, and I believe that when we arrived at Strasburg, at about eight the next morning, we were very fairly rested. I confess, however, that I did feel a twinge of horror when I found that the train by which we were anxious to reach Basel left again in about half an hour — too long to wait, but long enough for either breakfast or dressing. There seemed, however, to be no alternative, and so on we went, comforting ourselves as best we might with some sour grapes and bad dry bread — the sole edibles procurable at the Strasburg buffet!

The railway from Strasburg to Basel is much more enjoyable than iron-ways generally are. There is scare a cutting during the whole extent of the journey, and the views of the chain of the Vosges are — before one has gazed on real mountains in Switzerland — very delightful.

The railway runs up the broad valley of the Rhine, and within a few miles of Strasburg approaches very near to the mountainous district. The outlines of the hills are bold, picturesque, and well varied; and, as they rise rather precipitously from the valley, are often crowned with ruined castles, and have on their lower slopes large and populous-looking villages; they are at any rate very pleasing neighbors for a railway journey.

A few architectural notes of such churches as are passed on this route (which I travelled not for the first time) will not be out of place, though, with one exception, there is not any thing of great value.

At Schlestadt there is a large tower of great date to the principal church, which is rather fine in its effect. It has its two upper stages nearly similar, which is rarer at home than abroad. Another church has an early spire; and there is a smaller church with a good open turret. Opposite Schlestadt the chain of the Vosges is very striking, and some of the picturesque outlines of hills capped with ruined castles remind one of the more famous banks of the lower portion of the Rhine. Beyond Schlestadt we reach Colmar, the cathedral of which is large, and has a late tower capped with an ugly bulbous roof. Another church in Colmar has a good open-work and very light turret rising from the middle of the length of its roof. The effect of this kind of turret, of which we in England have no examples, is always very satisfactory.

But the best church in the whole extent of this journey is that of Rouffach, on whose merits "Murray" — whose services all travellers must gratefully acknowledge — is silent. It is of early date, cruciform in its plan, and the crossing surmounted by a good early tower and spire of octangular form. Each side of the tower has a good window, above which a string-course forms the base to a gable on each side. The angles of the spire spring from the bases of these eight gables, and the whole design reminded me somewhat of the only example of the same type in England, — the beautiful steeple of Lostwithiel. Rouffach has a good choir terminating in an apse, and a southwestern steeple, surmounted by a slender spire too small for the tower. Altogether, the general effect of the church is very fine. Beyond this point there are no features of interest; the Vosges retreat into the distance, and nothing is to be seen but a dead flat of field and wood, relieved occasionally by a village or town, remarkable mainly for the ugliness of its church. The busy manufacturing town of Mulhausen is passed, the number of stations is carefully reckoned, and long before you catch the first view of Basel you are heartily sick of the slow pace at which the Strasburg & Basel Railway Company always arrange to carry their passengers.

Those who know the Hotel of the Three Kings at Basel will understand how grateful was the information given to us, as we mounted its steps, that the *table-d'hôte* was to be ready in half an hour. Refreshing enough at any time, such an announcement was doubly so to travellers just arrived from a journey from Paris without a stoppage; and in no bad spirit did we enter the *salle à manger*, whose windows, opening into balconies which absolutely overhang the great and glorious Rhine, flowing strong and quick forever in the same unceasing current, make it about the pleasantest room of the kind that I know.

There are few things in the world so fine as a mighty river, few rivers so fine as the Rhine, and few spots so favorable for its contemplation as the balcony at Basel. As you look at the deep color of the water, you think of all the wonders which on its way has been seen. You remember your own exploits and pleasant walks in past times along the lovely valley of the Aar, and over the barren and story waste of the Grimsel, to the source of this beautiful feeder of the Rhine; or you think of Lake Constance and Schaffhausen, and of the beautiful valley of the Upper Rhine, and of the lakes of Wallenstadt, Lucerne, Brienz, and Thun — every one of which seems to the mind's eye to be represented and brought near by each wave that dashes madly along before your gaze. And then, whither do they all so swiftly wend their way? Down by minsters and by castles, along broad plains, through narrow water-worn chasms, and again through great, dreary, but many-peopled flats, into the sea, there to mix themselves and all their recollections in the great, glorious, but tradition-despising depth of Old Ocean.

(TO BE CONTINUED).

COMMUNICATIONS.

THE COMING BRICK.

WHILE brickmaking by the dry process is rapidly taking the precedence for fine front and ornamental facing work, and old fogyism is on the wane, there is still some prejudice against the advanced art right here in the East, which is the home of the hand-made repress brick, which we may justly say was an article of great popularity throughout the country a few years ago, but to-day the trade demands a better brick. The fads and fancies of our ever-progressive architects must be closely followed. Great strength and beauty, and a perfectly true brick of even size, cannot be made by the old process. To a Chicago architect or builder any endorsement of a dry pressed brick is unnecessary. Here, hundreds and thousands of magnificent towering structures testify to their superiority and great worth, and the doubt that once existed while the process was in its infancy, and the brick experimental, has been entirely dispelled by the perfection of their manufacture. It is the experimental dry pressed brick that has retarded the complete eradication of the old-time method for fine fronts. Had semi-dry brickmakers been complete masters of the process at its infancy, or if they all thoroughly understood the process to-day, the old method would very rapidly become a thing of the past where nice work is desired. We all know that a poorly made dry clay brick is worthless, and, were it not for the fact that the manufacturer of the same in his desire to get his goods on the market, and some return for the usually heavy outlay, we would never have had the criticism we are to-day subjected to. Architects, contractors, and builders everywhere that have thoroughly tested the merits of dry pressed brick manufactured by those who *are out of the experimental ruts* will in every instance endorse and stand by the dry pressed brick, because for great strength, fine texture, perfectly formed edges and corners, they have no equal. For beauty and finish they are unexcelled. They will cut and lay better. They are more dense and there is more clay to the brick, and in conclusion I will emphatically say that they are the coming brick for all facing walls as well as high-grade and artistic structures where the most magnificent architectural effect is desired. E. A. S.

PHILADELPHIA, Jan. 4, 1894.

A CORRECTION.

UNIVERSITY OF PENNSYLVANIA, PHILADELPHIA.

EDITOR OF THE BRICKBUILDER.

Sir, — Referring to the news item in your issue of August regarding Philadelphia educational facilities in architecture, I notice that "there is danger that the same over-attention to mechanical, mathematical, and scientific studies that once characterized the Institute of Technology course will prevail at the University of Pennsylvania." It is further intimated that the school of architecture is laboring under disadvantages similar to those which hampered the department of architecture at the Institute of Technology for so many years.

Inasmuch as these are errors involving the fundamental ideas upon which the instruction in the school of architecture is based, a correction seems in place. The "danger" referred to has never had existence in the school since Prof. Laird was placed in charge in the fall of 1891.

The general policy of the school is determined by a faculty of architects whose æsthetic abilities are recognized from New York to California, and "professors who persist in considering architecture an industrial science" have no place nor part in it. The position of the school is unique, inasmuch as all technical instruction is given by architects, — a policy which requires nine instructors to carry it out.

The æsthetics are not given a subordinate place, as your item would intimate. The evidence of this may be found in the catalogue of the university, where it will be seen that 1,290 hours are given to architectural design out of a total of about 4,170 hours for the entire four-year course. Aside from this are 1,140 hours given to free-hand drawing, water-color, pen and ink, and modelling.

Respectfully yours, JULIAN MILLARD,
Instructor in Architecture, School of Architecture, University of Pennsylvania.

THE NATIONAL ASSOCIATION OF BUILDERS.

TO MEMBERS OF ALL FILIAL BODIES: — The Eighth Convention of the National Association of Builders, which is to be held in Boston in February, beginning on the second Tuesday, will be a peculiarly interesting event in the history of the organization. The coming meeting will bring the Association back to the place of its birth, and will be the occasion of the introduction of several original features in the conduct of the convention as well as in the entertainment extended to delegates and visitors. The opportunity afforded the delegates and others to visit the Master Builders' Association of Boston, which has so often been referred to as an example of what a Builders' Exchange ought to be, and the arrangements in preparation by that association for the entertainment of its guests, it is hoped, will result in many benefits in the conduct of other filial bodies of the National Association, and in the fostering of the feeling of fraternity among the builders of the country.

The return of the National Association to its birthplace is a peculiarly fitting time for renewing old associations and establishing new ones, and in pursuance of this belief it is the purpose of the Master Builders' Association of Boston to invite the attendance as visitors of all those who have attended any of the previous conventions as delegates, whether the organizations to which they belong are at present members of the national body or not, and also to urge such new exchanges as have recently become established to send some representation to the meeting. This will insure the appearance of many familiar faces among the visitors, and will greatly add to the sense of fellowship, which is so desirable to maintain. The presence of visitors from newly organized exchanges is appropriate at this time, as it may be taken for granted that the National Association starts out on a new cycle of action with the approaching meeting, and new exchanges will receive great benefit and impulse from personal contact with the National Association and its work.

Boston offers many inducements to the visitor, with its places of historic interest, together with objects and buildings which picture vividly the old Colonial times and the incidents of the Revolution. Ample provision will be made for the delegates and others to visit every or any place of interest in the city and vicinity without interference with the work of the convention.

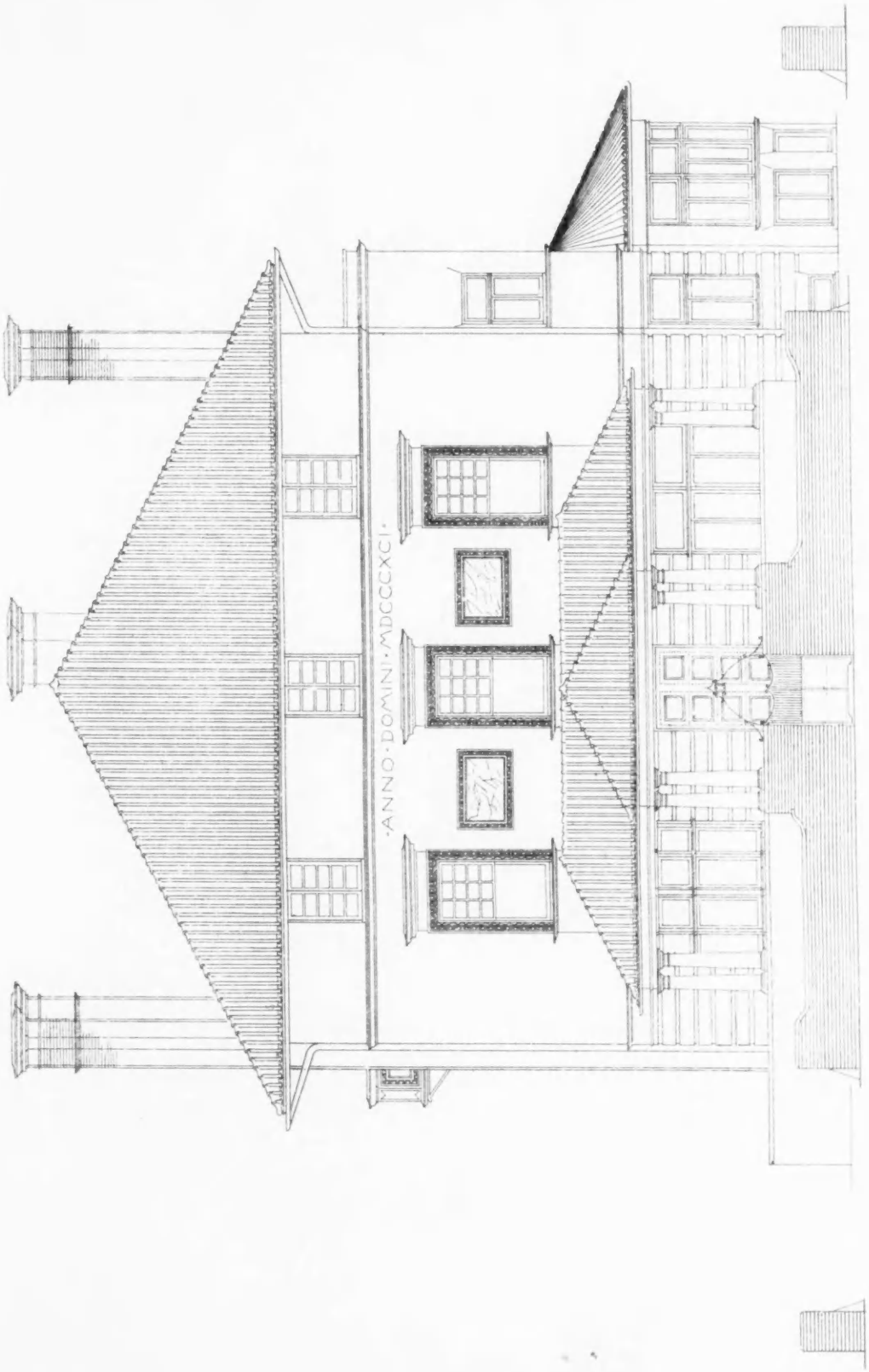
The usual circulars in reference to the convention, covering matters of transportation, hotel accommodation, official programme, etc., will be issued in due season.

The Executive Committee beg that, if members of filial bodies have any subjects, questions, or matters which they desire to have considered by the National Association, they at once communicate them to their officers, in order that they may be forwarded to the national officers and be arranged for in the programme.

Issued by order of the Executive Committee.

WM. H. SAYWARD, *Secretary*.

OFFICE OF THE SECRETARY, 166 DEVONSHIRE STREET, BOSTON, MASS.



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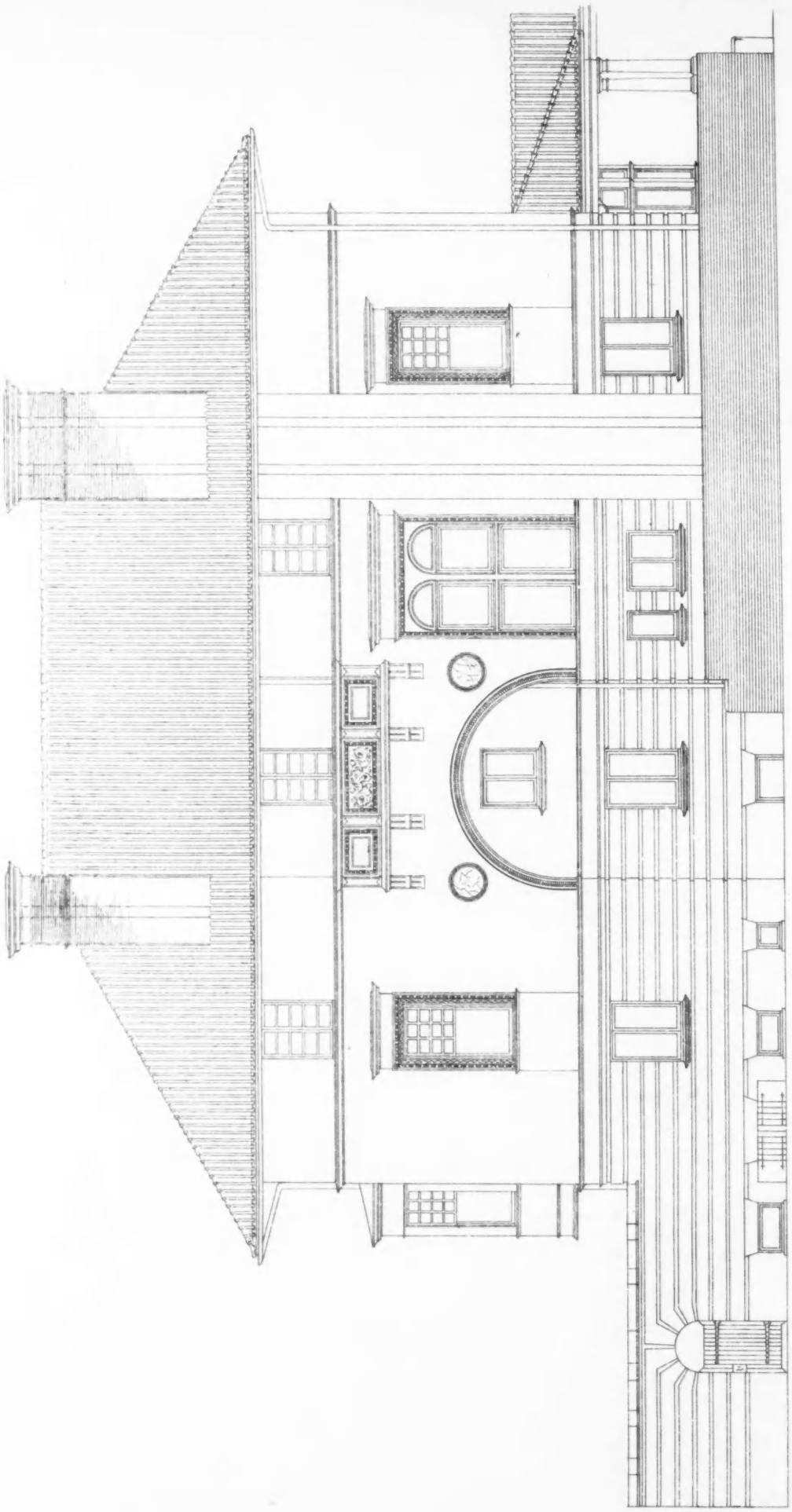
WILSON EYRE Jr. ARCHITECT PHILADELPHIA



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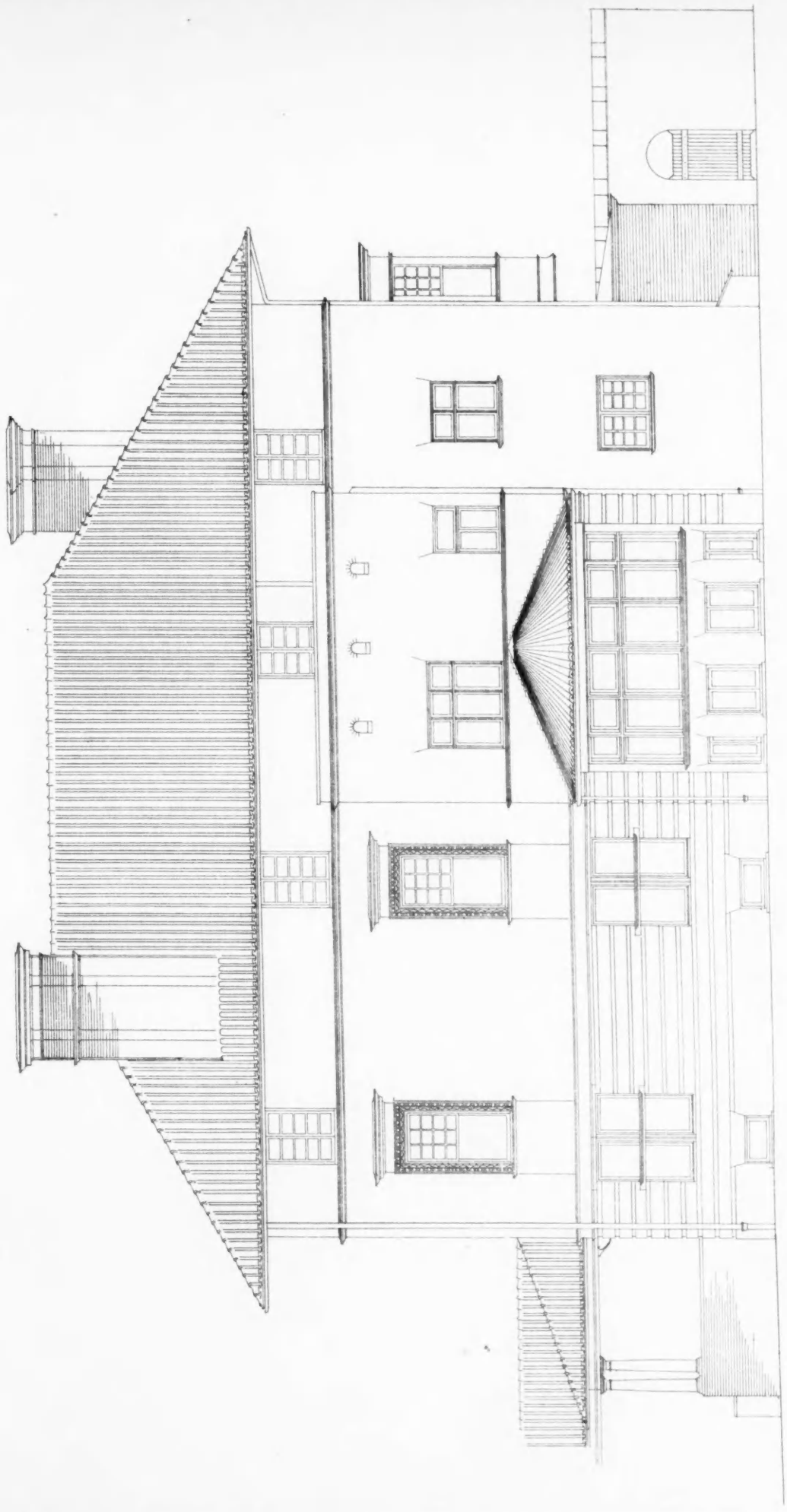

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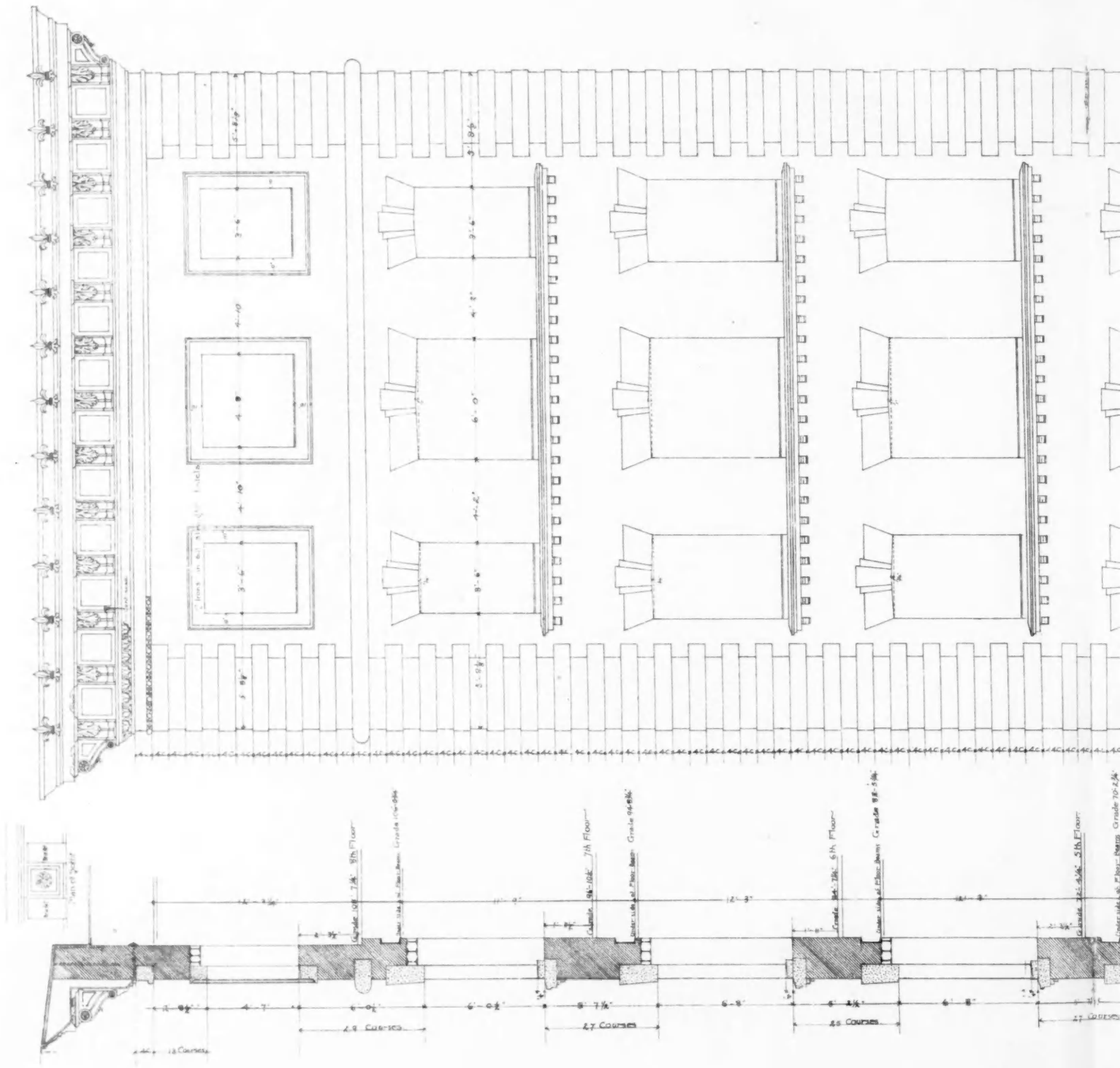

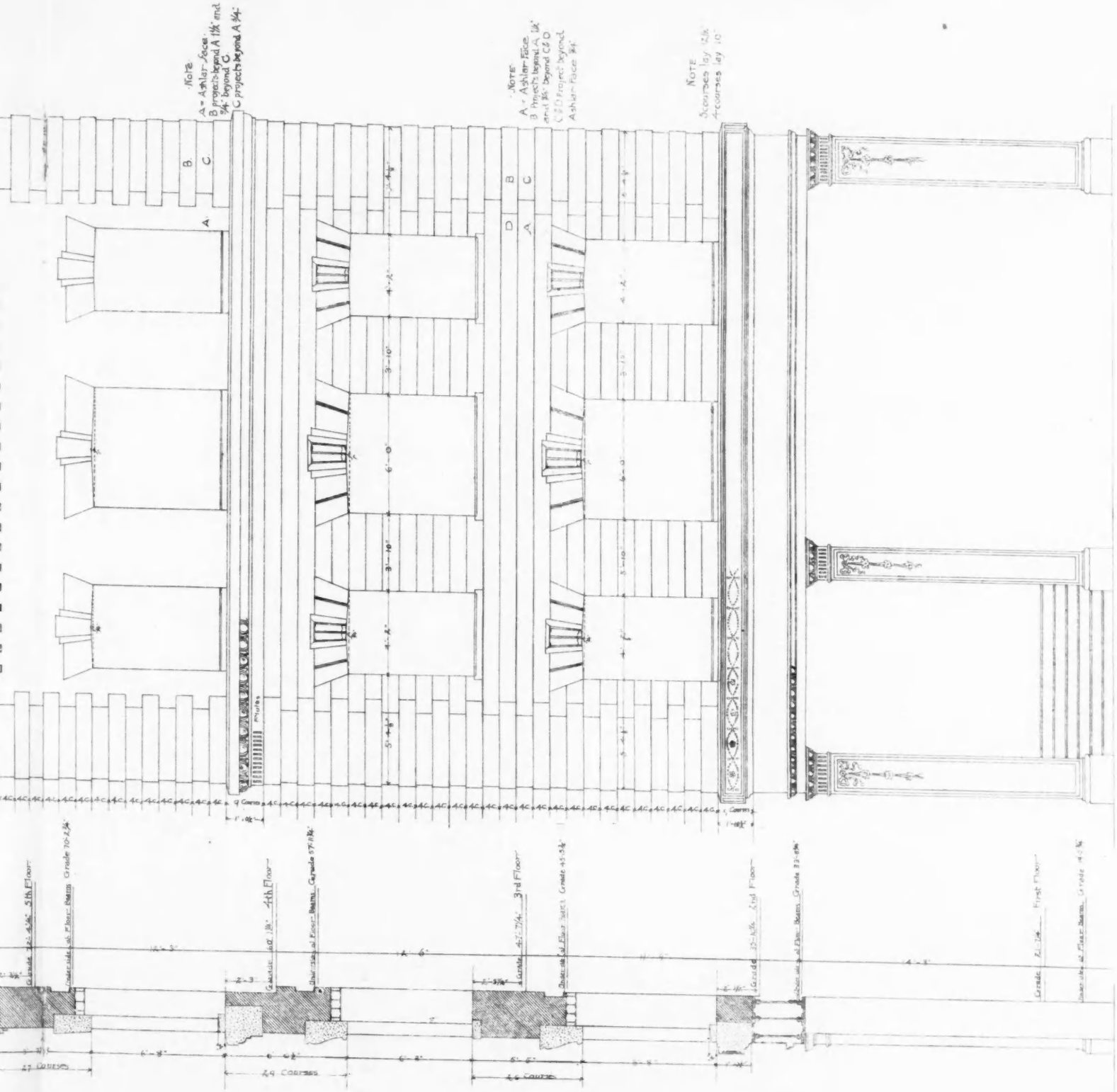
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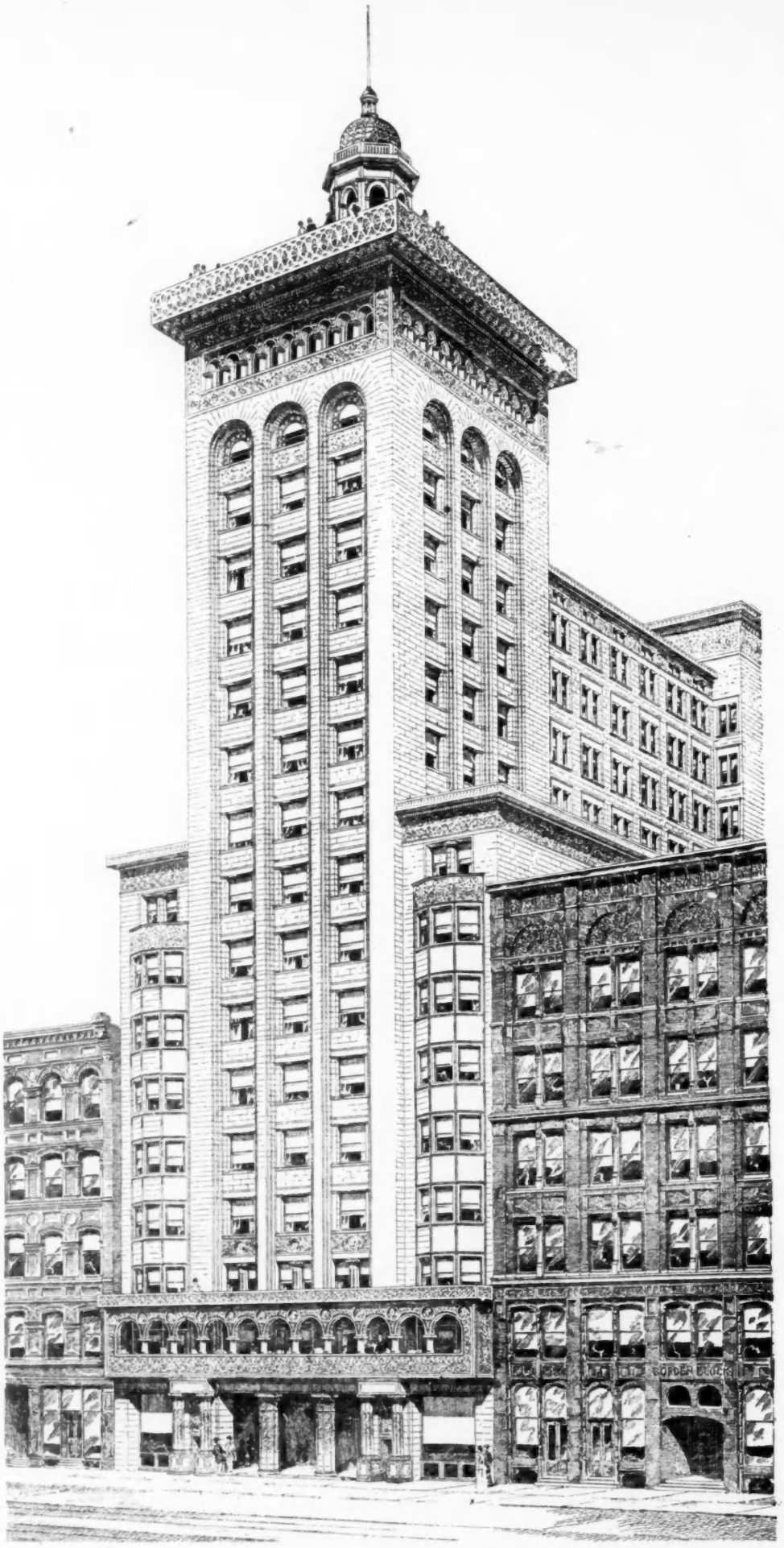
4th Floor
3rd Floor
2nd Floor
First Floor
27 Courses
29 Courses
46 Courses



THE SCHILLER THEATRE, CHICAGO.

ADLER & SULLIVAN, ARCHITECTS.

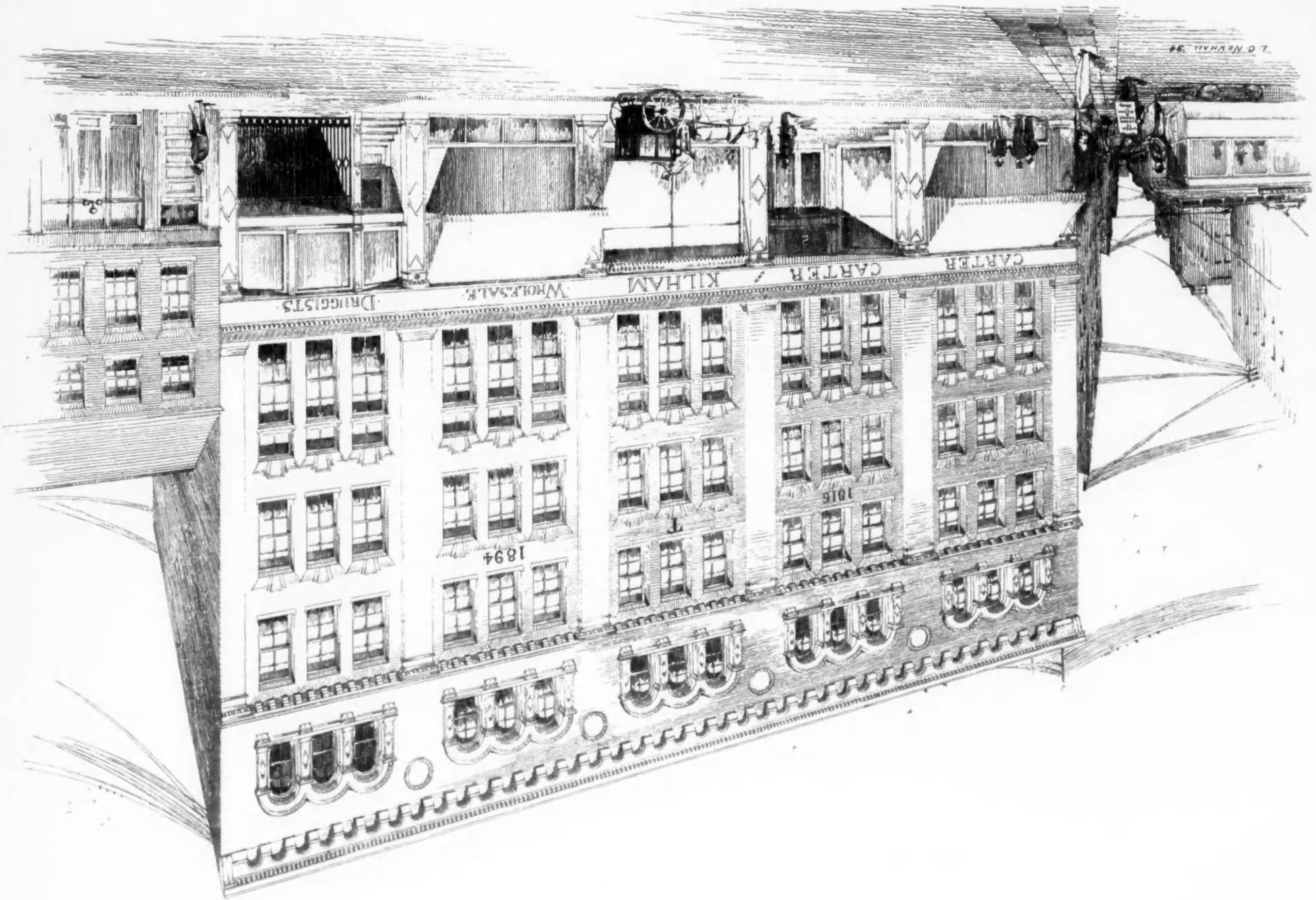
See article on Steel and Terra Cotta Buildings in Chicago.

CHICAGO STOCK EXCHANGE BUILDING.

ADLER & SULLIVAN, ARCHITECTS.

STORE BUILDING FOR CARTER, CARTER & KILHAM, BOSTON.

A. H. BOWDITCH, ARCHITECT, BOSTON.



THE BRICKBUILDER.

AN ILLUSTRATED MONTHLY DEVOTED TO THE ADVANCEMENT OF ARCHITECTURE IN MATERIALS OF CLAY.

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PUBLISHERS' STATEMENT.

No person, firm, or corporation, interested directly or indirectly in the production or sale of building materials of any sort, has any connection, editorial or proprietary, with this publication.

WITH this issue THE BRICKBUILDER enters upon the third year of its existence, with the brightest of futures ahead. With material in the way of both text and illustrations in hand to insure its being one of the most valuable papers in a purely architectural way, it will, during the year work up special departments connected with the materials it represents, that will make it invaluable as a trade journal. There will be a steady growth in size from number to number as new features are worked up, and we can promise by next December a publication at least three times the size of the December, 1893, issue.

We recognize fully that the only legitimate basis for such a periodical is a large paid circulation, and the surest way to gain this is to give subscribers full value for their money.

From number to number our advertising patronage is increasing, and we recommend our readers to examine this part of the paper as regularly as they do the text and illustrations. In no publication can they find more full and complete information concerning bricks, terra-cotta, fire-proofing, cements, mortar colors, etc., than in the advertising columns of THE BRICKBUILDER. In the line of manufacturing processes, machinery, dryers, kilns, and brickyard supplies they will find a constantly increasing fund of information of a practical and up-to-date nature. We call especial attention to this, as it is through its advertising columns that a special publication like THE BRICKBUILDER is often of greatest service to its readers.

MANUFACTURERS of ornamental brick who enter the market without a good stock of *all* shapes they catalogue and facilities for replenishing their stock as quickly as a brick can possibly be made and burned, can hardly hope, even with everything else satisfactory, to hold the patronage of architects. How often we see a building hung up for two or three bricks, which are being made! It will not do for a manufacturer to take an order, as we have definite knowledge has been done, relying upon the substitution, when the time came, of some other shape for the specified one, which was not in stock and which it would be a trouble to make. Architects do not specify ornamental bricks by catalogue numbers, with any other purpose than to have those bricks and none others used, and substitution by the maker is the surest way to prevent them from again specifying his bricks. This does not apply to all makers, but the fact that it does apply to *some* is sufficient reason for comment here.

IT is also worth while to say a word in criticism of the position of some manufacturers, — of bull-headed independence of the architectural profession. An instance not long ago came to our attention where the manufacturer remarked that he did not care for architects; that he *made* them use his brick, by going directly to the client and through him forcing the specification of his bricks upon the architect. Too many material men hold this view, but investigation frequently shows some weak spot in their goods which the architect has been quick to discover. It is the almost universal opinion among manufacturers of really meritorious articles that the architectural profession is composed of gentlemen; that they are honorable and courteous in their intercourse with the building trades; that, while protecting their clients' interests, they are always ready to recognize the rights of the other side. It is the man who starts in without experience to introduce a new appliance, on which he allows the architects a commission, who speedily draws his own conclusions that they are all "owned" by some one else who has got in ahead of him.

The manufacturer of fine grades of brick, and especially of ornamental brick, *cannot* ignore the architect. He may get up very fine stock designs of mantels, etc., but there is a very limited field for such work. To compete at all in ornamental work with the terra-cotta manufacturers, he must place himself as much in accord as possible with the architects.

THERE is a subject which we would like to see the leading manufacturers of ornamental brick take into consideration, and that is a series of really useful patterns of moulded and ornamental bricks which should be the common property of all manufacturers, and for which all the machine men would make moulds, after one standard mould, which would be cared for by the secretary of the National Brick Manufacturers' Association. Many of the existing patterns we find catalogued are, as we have often said before, utterly unsuited to good architectural work. It would be possible, through the appointment of proper committees by the American Institute of Architects and the National Brick Manufacturers' Association, to arrange for a competition in the design of a series of patterns, into which good designers would enter, and which would probably result in the adoption of a complete series of ornamental bricks which architects would find of constant use. These shapes being numbered the same, whoever manufactured them and carried in stock by all the leading companies, would lead architects to a greater use of moulded bricks. This would be the natural result of simplifying the category of shapes, on the one hand, and giving a series, all of which would be useful in some way; whereas, every catalogue at the present time contains many patterns that are practically useless in good designing. In place of a dozen large catalogues, all of which have some shapes in common, there would be one catalogue and one nomenclature. Any manufacturer could supply the bricks, and there would be no danger of any job being "hung up" while stock was being made. Furthermore, while the bricks of different manufacturers now vary in size, there would be in such a series a standard which could be depended on. In designing good ornamental brickwork it is exceedingly important to know the exact dimensions of the

bricks. A difference of one eighth of an inch will, when repeated across a façade, throw out a whole design.

The above remarks are merely offered as suggestions. We wish our readers, both architects and manufacturers, would favor us with "open letters." If the general tenor of these is favorable, we will take steps to get the matter into some definite shape for properly presenting to the Institute and to the National Association.

IT is peculiar how certain traditions hang on in different localities, even after some venturesome spirit has braved them and shown them to be utterly without foundation. No one but the terra-cotta manufacturer knows how hard has been the fight against the bugbear of American climate. To be sure, the first terra-cotta brought here from England was unsatisfactory, and the first attempts at American manufacture were no better; but after the successes which have attended the manufacture of terra-cotta and ornamental brick, it seems strange that architects should still say: "It may be very well somewhere else, but it will not stand *this climate*." Now, *this climate* covers every possible climatic condition; for the objection crops out in every part of the country, though it is now mostly confined to the smaller cities. It is safe to say that the materials now turned out by the leading manufacturers will stand any climate to be found in the United States, and for the present that is all that need concern us. We hope any reader who takes exception to this statement will correct us, but we want a correction backed up by actual facts and not theory. The subject was suggested by the remark of an architect who had a committee, in a city some two hundred miles from Boston, to deal with, and found them obstinate in their opinion that ornamental brick and terra cotta would *not* endure their climate. Brick and terra-cotta were used nevertheless.

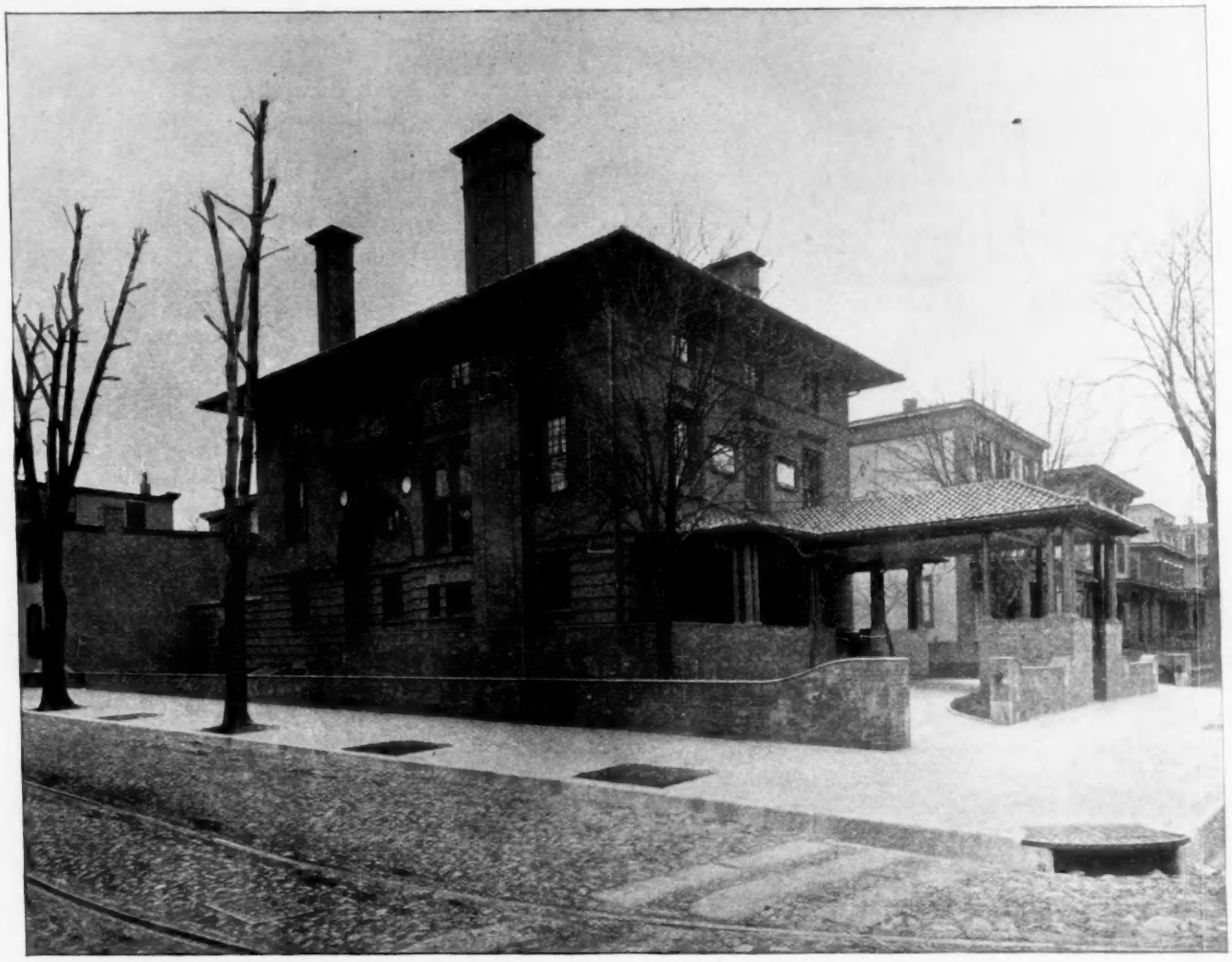
CONSIDERING what has appeared in previous issues of THE BRICKBUILDER concerning the use of hollow terra-cotta blocks for some styles of building, we take pleasure in announcing the early publication of photographs and detail drawings of the very interesting residence which Mr. W. D. Gates, President of the American Terra-Cotta and Ceramic Company, has recently erected at Hinsdale, Ill., from designs by Messrs. Jenney & Mundie. Large photographic reproductions appear in this month's *Clayworker*, and with customary generosity the publishers of that paper have placed them at our disposal. Mr. Gates is, in the first place, a thorough believer in terra-cotta, and having the facilities of a large and successful terra-cotta plant, and the services of Mr. Jenney, who is one of the pioneers in the use of terra-cotta, he went boldly into an experiment that in less enthusiastic hands would have stood an excellent chance for failure.

THE manufacture of hollow terra-cotta blocks in other forms than the commonly known fireproofing is receiving considerable of a stimulus, and the Frey-Sheckler Company of Bucyrus, O., is already making special machinery for this class of clay products. We cannot understand why they should produce dies for so-called "rock-face" work. We have put ourselves thoroughly on record before this, but let us say again, and as often as seems necessary, that clay is too good, too noble a building material to debase it by casting it in imitation of a material it excels in every point. Use it naturally, but don't try to make it represent stone, and above all crudely dressed stone. We are more inclined to criticise this special phase of the Frey-Sheckler Company's new enterprise on account of the high position these machinery makers hold, and the danger that a bad idea, such as we consider the "rock-face" design to be, will be imitated by smaller manufacturers, as well as the good ideas that emanate from their factory.

OUR February number will have so much space taken up by papers read at the National Brickmakers' Association at Chicago this month, and the report of the annual convention of the National Association of Builders held in Boston, Feb. 13 to 16, that the first instalment of our translation of Choisy's "L'Art de Bâtir chez les Romains" will have to be held over until the March number. The February number will contain elevations and details of the Volta Bureau at Washington, by Peabody & Stearns, and the Eureka Club at Rochester, by Nolan, Nolan & Stern.

THE coming eighth annual convention of the National Association of Builders, to be held in Boston, Feb. 13 to 16 inclusive, promises to be one of the most successful in the history of the Association. The Boston Exchange, which is one of the very strongest in the country, is making every endeavor to render the convention not only profitable to the Association, but very pleasant to the visitors. Ample headquarters have been secured at Parker's, which connects by several lines of cars with the convention hall in Mechanics' Building. Among the important features will be Mayor Matthews' address of welcome on Tuesday morning; the discussion on Wednesday morning of reports from filial bodies, with the object of securing suggestions which will lead to improvements in the administration of exchanges and the more effective carrying out of the recommendations of the National Association; the address Wednesday afternoon by Hon. Carroll D. Wright, on "The Relations of Employer and Workman," followed by discussion; the consideration of the Uniform Contract on Friday morning; and the election of officers Friday afternoon. Thursday will be an intermission to allow of committee work, and excursions of members to places of interest. A reception and smoker will be tendered visitors on the evening of the closing day. All details as to entertainment committees, reduced rates of transportation, etc., have been looked after, and without something unforeseen happens the business of the convention will pass off without a hitch. Those visitors who wish to have special headquarters while here are cordially invited to make use of the facilities at our office at 85 Water Street, where they can have stenographer's service, and the prompt and safe handling of their mail.

PEOPLE who know least about a matter of public interest rush the quickest into print concerning it. Two subjects have brought out more than the customary number of senseless letters to the Boston papers. They are the proposed Tremont Street subway and the new Music Hall. To the majority of Boston architects, the out and out appointment of Messrs. McKim, Mead & White is vastly more satisfactory than a competition would be; and it is safe to say that this appointment is endorsed by every architect who could be seriously considered in connection with the matter. But now come correspondents by the dozen who



RESIDENCE OF MR. HENRY COCHRAN, PHILADELPHIA. WILSON EYRE, JR., ARCHITECT.

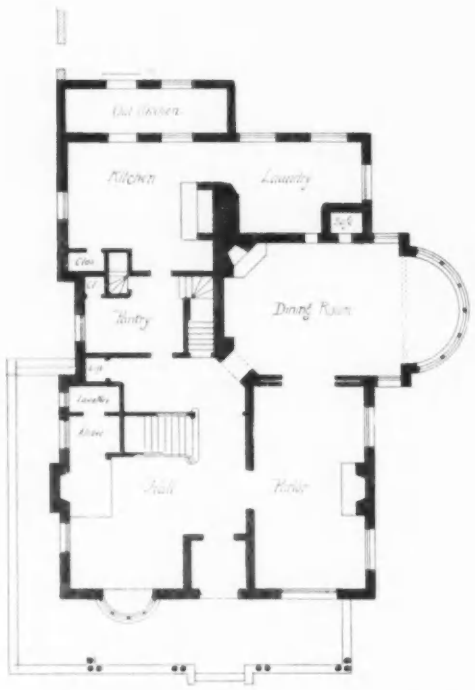
See plates 1, 2, and 3, and plan and description on following page.

assume that the question of proper lighting will not be considered, and take the columns of the *Transcript* or *Herald* to advise the architects in this particular, or it may be that the acoustic properties necessary to a music hall must be explained by laymen, or no provision is to be made for properly ventilating the building. These letters are intensely tiresome to all but a certain class who seem to be possessed with the idea that architects do nothing but impracticable work.

Now comes a croaker who sees an immence boom in the undertaking business due to the deaths from pneumonia the subway will cause. He evidently has not read a word of the full descriptions the promoters of the subway have published, in every one of which special emphasis was placed upon the fact that this subway was not to be a cold, gloomy, cavernous tunnel, but a carefully and attractively built underground arcade, the whole success of which depends upon its being a relief from the scorching sun in summer, and from the cold of winter. The ideal of the subway projectors is a brilliant arcaded promenade opening into the basements of stores, on one side.

The lining of this arcade would be glazed or enamelled terra-cotta. The street above could be built over it on the present fire-proofing principle of steel girders and flat terra-cotta arches with an asphalt or brick pavement. The only objection we can see is the noise of the cars in such a subway. But this objection is based upon the present appliances. Let there be a decided necessity for silently running cars and the large electric companies will prove equal to the emergency. Finally, let it be remembered that the subway is in the hands of a committee of exceptionally able men, who are sure to see more obstacles to overcome than the average newspaper reader.

WE wish to call the attention of our readers to a request we have often made for correspondents in every city and town in the United States, and request their coöperation in bringing this to the notice of "go-ahead" young men who may fill such a position. There are many ways in which a correspondent can be useful to the paper, and these are set forth in detail in our letter of instruction, which will be sent upon receipt of a self-addressed stamped envelop; the remuneration for this work is such that a young man who keeps posted on building matters in his locality can make during the year a good thing out of it without special labor. Beyond the simple correspondent's work there is much that he can do, if he so chooses, that will add to his income. Only those who are willing to keep their eyes wide open are wanted.



PLAN OF HOUSE FOR HENRY COCHRAN.

THE residence of Mr. Henry Cochran, in Philadelphia, of which we publish a photograph on the preceding page and three elevations on plates 1, 2, and 3, was designed by Mr. Wilson Eyre, Jr. The building is built of mottled brick and terra-cotta furnished by the Perth Amboy Terra-Cotta Company. The roofing tile is a dull glazed red, furnished by the Lindemann Company of Baltimore. Jacob Myers, 13th and Locust Streets, Philadelphia, was the builder, and Samuel Moore, 1220 Filbert Street, took the bricklaying contract. The first floor plan is given here.

MR. J. C. N. Guibert of New York, manufacturer of the swinging hose rack, writing with reference to the fireproofing department of our paper, says: —

"Personally, my idea is that no matter how fireproof the building may be, in the majority of cases the contents are of an inflammable nature, and that no building, even in the line of private residences, should be without interior water pipe and hose service. I do not go so far as to say that the Swinging Hose Rack must be used in that connection, but I do claim that when hose is used it should be in a condition to be put immediately into service, and that the Swinging Hose Rack is the best device for this purpose in the market to-day."

DON'T forget that THE BRICKBUILDER OFFICE is moved into the Cushing Building, 85 Water Street. Our postoffice box remains the same, — 3282.

FIREPROOF CONSTRUCTION.

A department devoted to methods of erecting and equipping buildings to prevent loss from fire.

OUR FIRE LOSS.

WHAT IT MEANS AND HOW TO REDUCE IT.

DURING the financial depression in this country that has marked this year, and created distress in many quarters from the suspension of important enterprises, including numerous manufactories, all sorts of reasons have been given for this unfortunate state of affairs. The silver bill received its full share of anathemas as its repeal was delayed from month to month, and the settlement of that question was regarded as the source of inspiration which should shake off the lethargy that seemed to have possessed the business interests of the country. The repeal was effected, but the happy results so confidently expected have not been realized. A new difficulty stands in the way. The everlasting tariff question now arises to interest statesmen, to amuse loquacious politicians, and to plague the people.

There is reason enough to lament the existence of these causes of stagnation in business, and that the best minds in the country should arouse to a deep study of the laws of political economy and of the whole question, "What shall be done to bring our great country, with all its magnificent possibilities, to a permanent condition of prosperity?"

In the midst of all the discussions of this question by the press and public speakers, almost no suggestion has been made that the fearful fire waste of the past few years has had anything to do with the financial depression. When we consider what this fire loss has amounted to in the last decade, we may well raise the question whether the public attention should not be emphatically called to the destructions of millions of property during each year, as a drain upon its resources which, of itself, would in a series of years create a financial panic.

Gradually the annual fire loss of the country has increased from $100,000,000 to an estimated $160,000,000 for this year. No other people on the face of the earth, it would seem, would regard this fact with indifference. No other people could bear the drain on their resources.

It is not to be assumed that the people of the United States are careless in their habits beyond those of all other countries. It is true they are open to severe criticism in that matter, but the construction of buildings that have been erected during the past twenty-five years has been of so inflammable a character, that the loss to which we have referred has followed as a natural consequence.

This fearful waste of property will continue until, under building laws passed by our cities and towns, the further erection of fire traps (so called) is prevented. Cheapness of construction has entered into the calculation of contractors and of those who have furnished the means for constructing buildings, until, considering the prosperity of our country, a shameful state of affairs exists in this particular.

The principles of fireproof construction are well understood, and nothing but false ideas of economy have prevented their being adopted in the past.

The particularly weak point in buildings has consisted in the concealed spaces existing between floors and in partitions, not only in manufacturing establishments, but in commercial buiidings, and, worst of all, in dwelling-houses. The production of any material that can be used for partitions and walls, giving proper ventilating spaces, and at moderate cost as compared with that of sheathing or lath and plaster, will be of immense importance in lessening the spread of fires.

The advantages of mill construction (so called) in manufacturing and in mercantile buildings are already appreciated, and, in many of our leading cities, buildings are being erected containing that feature. This does away with spaces between floors, and also, by leaving the side walls bare, relieves buildings of dangers by fire formerly existing in them.

In other structures where partitions are necessary, fireproof materials can be used, and so covered as to afford ornamental surface. Facilities can be afforded the architect for ornamenting the interior of rooms fully equal to those in the old forms of building. Even in dwelling-houses it is believed that the dangers of concealed spaces can be readily avoided by the adoption of mill construction, — the heavy timbers, which necessarily would show in rooms, being treated as cornices, — and by introducing partitions made of fireproof material. Dangers hitherto experienced from hot-air pipes may be entirely avoided, there being no space for fire, should it take from an overheated pipe to extend unseen, endangering the entire premises. Already advantages have been derived from the use of wire lathing in the place of wood, hitherto universally in use, and a plan for using iron sheets, cut in such a manner as to afford clinchers for plastering, has been brought into notice as a substitute for other partitions. The fragile nature of this invention strikes one at first thought, and however it may come into notice, it would seem that some form of brick-work, like that of terra-cotta which is now is use, would be preferable.

From the fire insurance point of view, too much importance cannot be laid upon this revolution in methods of building. It is believed that, with the doing away of the chance for fire to extend from one floor to another, — from one part of a building to another, — more than half the loss by fire would be saved. That being the case, whoever shall aid in bringing about so important an achievement should deserve the heartiest support of the public.

55 Kilby Street, Boston. B. B. WHITTEMORE,
General Agent, Ætna Insurance Company.

TOWER FIRE ESCAPES.

THE subject of safe means of escape from burning buildings is of grave importance.

During the last decade it has been the theme of much thought and discussion, and many plans have been devised for exit of persons from buildings on fire.

The act of Assembly, of the State of Pennsylvania, approved June 3, 1885, requires that all the following-described buildings shall be provided with safe external means of escape: —

"Every building used as a seminary, college, academy, hospital, asylum, or hotel, for the accommodation of the public: every storehouse, factory, manufactory, or workshop of any kind, in which employees or operatives are usually employed at work in the third or any higher story; every tenement house or building in which rooms or floors are usually let to lodges or families; every public hall or place of amusement; every parochial, or public school building, when any of such buildings are three or more stories in height, shall be provided with a permanent, safe, external means of escape therefrom, in case of fire, independent of all internal stairways.

"Such escapes to consist of outside, open iron stairways, of not more than forty-five degrees slant, with steps not less than six inches in width, and twenty-four inches in length."

The Bureau of Fire Escapes of Philadelphia, which consists of the Building Inspectors, Chief Engineer of the Fire Department, and the Fire Marshal, have long felt that the iron ladders running down from the sides or ends of buildings of giddy heights were of but little use, except for the firemen; that employees, particularly females,

would take the risk of escape down a burning stairway, or a leap from upper windows, rather than hazard their lives upon these outside iron ladders.

It was mainly through the instrumentality of the Building Inspectors of Philadelphia that section 27 of the amended building laws for cities of the first class in Pennsylvania was enacted by the State Legislature.

Section 27, requiring TOWER FIRE ESCAPES, cites as follows: —

"All buildings to be hereafter erected, or altered to be used as a schoolhouse, church, public building, hall, place of assembly, or resort tenement house, hotel, lodging-house, factory, or workshop, more than two stories in height, shall have at least one stairway accessible from each apartment, which shall be enclosed with brick walls, or partitions, made of incombustible materials, and shall have no interior openings other than the doors of the apartments from which it is an exit. All stores to be hereafter erected or altered, to the extent of twenty-five per centum of the assessed valuation, when more than three stories in height, and in which any one of the stories above the second shall have a clear floor space of not less than four thousand square feet, shall be provided with a TOWER FIRE ESCAPE, enclosed in incombustible material adjoining one of its fronts, and such fire escape, from the first to the second story, may be a spiral staircase.

"Such fire escape shall be held, and taken as a fire escape, under the terms of the act approved June eleventh, one thousand eight hundred and seventy-nine, entitled: 'An act to provide for the better security of life and limb, in cases of fire in hotels and other buildings'; and the several supplements and amendments thereto.

"And, in the case of such stores, in which the clear floor space of any story above the second shall be over ten thousand square feet, the Board of Fire Escapes may require *one or more additional* TOWER FIRE ESCAPES, as above described.

"And all mills more than two stories high, of the floor area, per story, of three thousand square feet or more, shall have such brick-enclosed fire escape, or escapes, as shall be approved by the Board of Fire Escapes. No obstruction shall be placed upon any way of egress from any building. No explosives or inflammable compound, or combustible material, shall be stored or placed under any stairway of any building, or be used in any such place or manner as to obstruct or render egress hazardous in case of fire."

The Tower Fire Escape is a brick or fireproof chamber enclosing a stairway; said chamber may be within or alongside the building, *with no openings into it from the main building*. It is reached from off iron balconies or platforms running along the side or ends of the building, thereby entering the Tower Fire Escape *from the open air*.

The outlets to the balconies should always be on a level with the floors of the main structure.

This kind of an escape cannot be cut off by flames from a lower story, as can the outside iron ladders, but is a safe refuge from the top of the building to the exit into the street below.

It can be made of various sizes, according to the height of the stories of the buildings and the number of persons to use it.

Where there are but few to use it, a smaller tower will answer: but where a large number are to be accommodated, the chamber should be of sufficient size to allow broad, easy stairs and square landings; the steps should have rises of not more than eight inches and tread of not less than ten inches.

Winders should be avoided wherever possible. It is not necessary that the stairs should be of iron, as the chamber is fireproof: wooden steps are much to be preferred.

In hotels where corridors run the whole length of the building, with a main stairway near the centre, a Tower Fire Escape at each end of the hallways makes an exit from the building practically safe.

In hospitals, or other buildings where invalids, aged persons, or children are domiciled, this kind of an escape is invaluable, because the inmates can be carred out in perfect safety.

Where large buildings for manufacturing or other purposes are erected, with Tower stairways at opposite ends of the buildings, and used for ingress and egress daily, there is not the necessity for so many inside stairways.

In all possible cases these Tower escapes should be in daily use for entrance and exit, in order that the user may become familiar with its protection, and thereby realize the fact that when once he enters the chamber his life is practically safe.

The Girls' Normal School of Philadelphia, a model building, located at the northwest corner of Spring Garden and Thirteenth Streets, has *three* Tower Fire Escapes; two of these are used daily by the pupils for exit.

During the last six months there have been erected in Philadelphia *nineteen* Tower Fire Escapes, and in every instance these are giving entire satisfaction.

We are happy to state that the simplicity of construction, and absolute safety of these fire escapes, make them daily grow in popularity, favor, and demand.

The great advantage of these Tower Fire Escapes over any other now in use is that the moment persons in any building on fire reach the inside of the tower they are practically safe; confidence is restored and panics are avoided.

Particular care should be exercised, in the construction of the chamber, to make it *absolutely smoke-proof*.

The false economy of cheap construction of fire escapes for helpless women and children, the aged and enfeebled, the sick, the insane, the prisoner, etc., cannot too loudly be condemned.

In view of the frequent conflagrations and holocausts in large cities, the first duty of those in authority is to provide a practical fireproof provision like the Tower Fire Escape for all the aforementioned subjects.

WM. J. GILLINGHAM.

Philadelphia.

THE C. Pardee works of Perth Amboy, N. J., for some years identified with the manufacture of clay products, has taken up the manufacturing of terra-cotta fireproofing, both hard and porous, and are now in the market with a full line of shapes. They are represented in New England by Mr. W. H. Gates.

IN our November issue we gave notice that Mr. J. L. Worthy would at once rebuild his hotel at Springfield, Mass., which had just been destroyed by the big fire, and suggested that he would probably be open to arguments for fireproofing. We now learn that the plans for a fireproof building have been prepared by Gardner, Pyne & Gardner and that estimates are now being made. The new hotel should receive the patronage of all our readers, as it is best to take no chances when safe accommodations are to be had.

THE site of the old Traveller Building on State Street, Boston, is to be occupied by a towering fireproof structure, which will be much the same problem as the Carter Building, which is just being finished. The site is surrounded by streets, and is of small area, being slightly wider, but only about half as long as the Carter Building. This, so far as we can learn, will be the second use in Boston of the "Chicago" method of building.

WE especially call the attention of readers interested in this department to our leading article, and invite open letters from all who may have something of interest to say apropos of the subject treated there.

THE daily press devotes columns to methods of extinguishing fires, to the blackguarding of each other by fire marshals and chiefs, and similar stuff. Would it not be a good idea to devote some space to the more important question of building to prevent the spread of fire? That is the foundation, and if well attended to it will only be a question of time when the extinguishing of fires will be a small matter