Moe ANTONELLIANA: AN EXAMPLE OF LIGHT CONSTRUCTION IN LETTER FROM LONDON.

Under these circumstances, the fact that, in the Horne Depart-...}
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THE Manager of the New York Tariff Association, Mr. Reed, an expert in matters relating to insurance, has made an interesting report on the great Pittsburgh fire. Practically, as he says, the four buildings affected, burning to-gether, made it impossible to approach them with extinguishing apparatus, and, the only defence that they had against annihilation was that afforded by their own construction. Under these circumstances, the fact that, in the Horne Department Store — the one in which the fire was the fiercest, and the intervening spaces are filled up with broken chips and mortar. We have seen floors hollowed tiles, well fitted, without cutting, it would be difficult to imagine, but we presume that architects generally will say that the latter sort is excepted. The so-called fireproof construc-...
in consequence of this threat, discharged the two men, and the
latter brought an action against Allen for having "wrongfully
deliberately" obtained their discharge, and obtained a
verdict in their favor, with damages to the amount of forty
pounds. Allen appealed to the House of Lords, and his appeal
was heard. Although the events with which the action
was concerned took place thirteen years ago, Allen claimed
that the evidence did not show malice on his part, and that
what he had said in reference to the position of the holler-
makers was simply legitimate expostulation, and not such
threatening or intimidation as to do any wrong to Flood and
Taylor. Eight judges of the High Court of Justice were sum-
mmoned to consider the question of law, whether the evidence
showed ground for the action of Flood and Taylor against
Allen, and six of them united in an opinion, to the effect that
such ground was shown, inasmuch as any language which at-
tempted to destroy the freedom of will of another amounted to
intimidation, and that, as this was the effect of Allen's repre-
sentations to the contractors, sufficient intimidation, to the
injury of the plaintiff, was shown to justify the action. Two
of the judges, Sir James Charles Mathew and Sir Robert
Samuel Wright, did not concur, thinking that the evidence did
not show such intimidation as would give a right of action.
The matter will probably be discussed again, before the formal
derision is rendered, but it cannot be doubted that the law of
England has been settled by the majority opinion.

M. R. Samuel A. Warner, of New York, one of the
best-known architects of the generation which is passing
away, died a few days ago, in his seventy-fifth year. Mr.
Warner was born in Geneseo, in the interior of New York
State. He received his professional training in New York, in
the office of his father, Cyrus L. Warner, and succeeded to his
business. For many years he carried on an extensive practice.
In the busy time, succeeding the War, he designed a large
number of merante buildings, but he had also commissions of
other sorts, and several important public buildings in the South,
as well as the famous and renowned Church on Fifth
and Twenty-ninth Street, are from his plans. He was
known as a careful and sensible architect, and his clients were
faithful to him, so that, although he had acquired a large
fortune, it was his pleasure to continue his active practice,
which he only resigned last year, on the appearance of serious
malady, to his brother and nephews.

THE statue called the "Bacchante"—which might, however,
just as well be called "May," or "Mamma and Baby," or
almost anything else which could be represented by two
figures,—after being rejected by the Trustees of the Boston
Public Library, has been thankfully accepted by those of the
Metropolitan Museum, and will, presumably, form an important
part of its collection of modern works. The huge reclining
figure of "Pan," which was declined by the New York Park
Commission, on the ground that the Central Park offered no
suitable place for it, has also been accepted by the Commis-
sioner of Public Works, and will, it is said, be placed on the
Boulevard. Thus two members of the unhappy family of
statues have found rest from wandering and repulse, and will,
we hope, for many years adorn the abiding-places now opened
to them. After the experiences of the past few years, it is not
very surprising to learn that the New York Park Commis-
sioners have found "great relief" in the fact that few or no
offers of statues are now made to the city. Whether the pro-
fessional sculptors are also "relieved" to find the demand for
their work falling off is an interesting question; and time will
show whether the discouragements which have nearly put an
end to the adornment of public places by sculpture are advan-
tageous to art. Of course, there is a great deal to be said in
favor of the strictest aesthetic censorship in the acceptance of
works of art of the kind, but we are inclined to think that
strictness may be overdone, and that, where there is really room
to put statues of the most promise of the leading sculptors,
the city may not be without a fine collection of statues.

The problem which has so long occupied engineers, of pro-
viding communication between the two banks of the
Thames at the very eastern end of London, where any-
thing like a bridge would be an intolerable obstruction to navi-
gation, has been solved by the construction of a huge tunnel,
twenty-seven feet in diameter, lined with iron, and containing
a roadway and two walk-ways, besides a subway for water and
gas pipes. The cost of the tunnel, which is a little over a mile
long, has been seven million and one-half dollars. This seems
an immense sum for so short a piece of construction, but it was
necessary to get the two footways and the roadway, in place of
the single or double track of a railway tunnel, and the difficulty
of such work increases very rapidly with the size of the open-
ing. Meanwhile, if the municipality of London finds it a
profitable operation to spend so much money to connect two
districts of London, it is strange that there should be so much
difficulty in raising money to finish the tunnel under the Hud-
son River, which is already nearly complete, and which will
arrive at a saving of many millions of dollars, and which will
nearly all the rest of the continent which could be had
without a detour of nearly sixty miles. It is true that the huge
outlay of money involved in the construction of the Hudson
River tunnel, but the credit of the Hudson Tunnel Com-
munication, but the tunnel could be completed long before the
bridge is ready, and, if it had been carried out years ago, the
bridge would have been unnecessary.
MOLE ANTONELLI: AN EXAMPLE OF LIGHT CONSTRUCTION IN BRICKWORK.1

THE city of Turin, Italy, possesses a structure which is without doubt the most curious and the most venturous piece of construction in the world. This is the "Mole Antonelli," so called by general consent in honor of the architect who conceived the project and personally superintended every part of the construction, with exceptional patient and watchfulness.

The peculiarity of this remarkable work consists, principally, in its light skeleton construction with common bricks and lime mortar,2 whereby a small quantity of material, and that of the most common kind, is employed to enclose a large area and carry it, with safety and stability, to the unprecedented height of 385 feet above the ground.

The method of construction, and the novel application of brick masonry in structural forms adapted to metal columns, these materials make this building a unique structure in differing radically from all former monuments of masonry.

A brief history of the origin, progress and changing uses of the building is as follows:

In 1864, the University Society of Turin, in view of that city being the capital of United Italy, determined upon building an imposing structure which should serve at once as a grand synagogue and construct such a building as they required.

A competition was instituted during that year among the architects of Italy to produce plans of a building that should satisfy their various requirements.

Many plans were submitted, but none were considered satisfactory for the work. In 1869, the master of architecture and engineering, who was then over sixty-five years of age, and who had erected the lofty and notable dome over the cathedral at Novara, was employed in 1864 to plan and construct such a building as they required.

The work of construction of the dome was commenced and carried by the Jewish Society to a height of 240 feet by 90 feet, with steps to the principal floor. When, in 1869, the structure had reached the height shown in Figure 1, the funds being exhausted and the Jews frightened at the vastness of the project, together with the disordered state of the country, the work was abandoned.

Notwithstanding this was designed to produce equilibrium on the one hand and make it the highest building in Europe.

When, in 1869, the structure had reached the height shown in Figure 1, the funds being exhausted and the Jews frightened at the vastness of the project, together with the disordered state of the country, the work was abandoned. The Jews then held a meeting, at which they resolved on the finish of the work, and Antonelli was authorized to prepare for its transformation and completion. In the following year work was commenced on the great dome and the granite gallery at its base.

In the meantime Antonelli, with increasing confidence and assurance in his work, had projected a bigger design, which instead of 160 feet should place 268 feet of cupola and spire above the great dome, and make it the highest building in Europe.

The perfect stability of the work up to this point, and the assurance of the architect that this great height could be erected with safety, led those in charge to yield to his ambition, and under Antonelli's personal supervision the structure was carried up to the base of the crowning statue, when, on October 18, 1888, Antonelli died as the ripe old age of ninety years. His son, who had assisted him in the supervision of the entire work, was placed in charge of the building.

In 1891, founding a museum and dedicated to Victor Emmanuel II, and Antonelli was authorized to make this building a unique structure in differing radically from all former monuments of masonry.

The cost up to this time had been about $120,000, and the architect estimated that $200,000 more would be required to complete it.

For some months nothing was done. The destruction of the cupola was suggested, but proved abortive.

In 1893 the president of the Jewish Society proposed ceding it to the city, but a few days after, the Jews held a meeting, at which they resolved on the finishing of the temple, provided the cupola was demolished. This the Municipality refused to permit, and after prolonged discussion the building was allowed to remain as it was for several years.

In 1877, the Jews sold the building to the city of Turin for $300,000—one quarter of its cost—to be converted into a museum and dedicated to Victor Emmanuel II, and Antonelli was authorized to prepare for its transformation and completion. In the following year work was commenced on the great dome and the granite gallery at its base.

The interior has hardly received its finishing touches. It will probably be dedicated for a museum in memory of Victor Emmanuel II, in 1893, at the time of the Turin Exhibition.

With this brief history of the structure, we will now attempt to analyze its parts and describe some of the peculiarities of its construction.

The building consists essentially of a square, 130 feet each way, with piers 17 feet 8 inches on centres, showing eight piers on each side, or twenty-eight in all; at a distance of 17 feet 7 inches inside of these are the centres of an inner range of piers, with six on each side, or twenty in all.

These forty-eight piers perform all the work of supporting the walls of the building, the great dome, and lofty cupola and spire.

There are on each flank of the structure three piers supporting projecting wings enclosing stairways, and on the main front six more piers supporting the massive granite columns of a great portico.

Also, in the basement and second order there are eight interior piers which support the floor-arches up to the great square dome.

Thus there are in all, sixty-eight piers supporting all parts of this interesting structure. The foundations for these piers are laid in sand forty-five feet below the ground, and ten feet under the basement.

There is a sub-basement, 17 feet 8 inches deep, below the basement floor or pavement level, and at this point we see the commencement of light arch construction which is characteristic of the building throughout. At this level the interior piers are about 4 feet by 4 feet, and the exterior piers about 4 feet by 6 feet.

Instead of massive walls to resist the earth pressure and support the exterior walls, this segment arched walls are sprung from pier to pier, with convex side outward; these, in turn, are buttressed and strengthened by horizontal arches at mid-height of the sub-basement.

From the level of the pavement the outer walls are carried on flat arches from pier to pier, thus throwing all weights of wall and contents on the pier. The three floors that intervene between the sub-basement and great temple are carried on remarkably light arches, some of them over thirty feet span and less than three feet rise.

The loggias and gallery floors are also carried on very thin and light brick arches employed with the greatest freedom in every part of the work.

The external architectural features of the building consist, first, of a basement story treated as a pedestal for the pillars and columns above; then two orders of architecture consisting of brick pilasters over the main piers, with granite Corinthian capitals. The walls between the lower pillars are composed of bricks, with granite columns in two stories, with windows in the central spaces. The second order has a high brick screen wall with small granite columns, all open to the loggia below.

Above the cornice of the second order is the roof of the side projections and the front portico, which are carried on arches seven feet all around to the base of the great external gallery, with its fine granite colonnade around the base of the dome. Over this gallery is another sloping offset of about five feet, to the base of the great square dome.

1 A paper by G. W. Peery, read before the Technical Society of the Pacific Coast, San Francisco, May 23, 1895.
2 Bricks used throughout this building are the common bricks of North Italian (especially in Turin), measuring 9% by 9% by 2 inches, with a crushing strength of about 1500 lbs. to the square inch. Corners of the arches are filled with small bricks, 2% to 3 inches long, 1 inch wide, and 1 inch thick.

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[Image 0x0 to 606x957]
This portion presents five large arches on each side, with ornamental pilasters and entablature, which forms the springing line of the great dome, and placed the inner line, or shell, directly over the inside line of columns.

Antonelli found by experiments that bricks would lie in equilibrium on a bed of mortar at an inclination of thirty degrees with the horizontal. He therefore arranged the pitch of the dome so that the greatest inclination of the radius should not exceed thirty degrees. He allowed six feet for the entire thickness of the dome, or about five inches each. The real supporting members consist of vertical ribs placed directly over the main supporting columns, 17 feet 84 inches on centres. These ribs consist of an outer and inner member, about 10 inches by 15 inches each, connected at intervals of about 12 feet with cross arches, upright and inverted, with an iron tie-rod through each connection.

We shall see, however, how ingeniously Antonelli overcame the difficulty and moved on to the construction of the great dome.

Considering these arches capable of carrying a portion of the load unequally distributed, he proceeded with the vertical supports of the dome, consisting of two orders of columns inside and square brick piers outside, with a blank wall to receive the roof of the gallery when it should be built (as seen in Fig. 1), and over what should be the roof of the exterior gallery he turned five great semicircular arches on each side, which were to form large clerestory windows to light the interior and form architecturally the drum or base of the dome.

We have now arrived at a height of 150 feet above the ground and at the springing line of the great dome, and here a peculiar construction commences, such as one might design in iron, but which few would think of executing in brick and lime-mortar.

It was necessary that in order to place such a lofty structure as was designed on such slender supports it should be as light as possible, elastic and strong. In metal or timber this would not be a difficult thing to do, but in masonry it required a departure from all former efforts, and to accomplish which, consummate skill in design, exactness in calculations of forces and stress, and the greatest care in workmanship and selection of materials were required.

It will be remembered that the entire thickness allowed for the dome was six feet; an inner shell was necessary to form a ceiling surface, and an outer shell on which to lay the roof covering. These the architect made as thin as possible—only one-half a brick, or about five inches thick. The real supporting members consist of vertical ribs placed directly over the main supporting columns, 17 feet 8 inches on centres. These ribs consist of an outer and inner member, about 10 inches by 15 inches each, connected at intervals of about 12 feet with cross arches, upright and inverted, with an iron tie-rod through each connection.

Fig. 1. Isometric View of Dome Construction.
At each of the four corners are somewhat larger ribs or spines placed diagonally on the plan, constructed in a similar manner to the vertical ribs, and destined to carry the entire weight of the cupola and spire. It will be seen by the sketches that the vertical ribs all join the corner spines in pairs, and their principal duty is to support the square dome, the two middle ribs on each side joining the angle spine at the top, where the base of the cupola rests. The distance between the vertical ribs is divided into three parts by smaller ribs one brick square, through which iron rods pass about five feet apart, to secure the granite ribs on the outside of the stone covering. The inside shell is also strengthened by similar small ribs projecting into the space between the shells, and further supported, while the entire structure is braced by curved ribs projecting with two offsets about ten inches on the inside of the dome. These curved ribs are struck with the same radius as the inside shell of the dome, and branch each way over every one of the interior columns, intersecting each other at acute angles and abutting, two by two, at the corners, thus dividing the interior surface of the dome into symmetric panels with curved lines, and serving to distribute any weight or force acting on any of the spines to the several columns.

In building these curved ribs, some interior support may have been obtained by struts and braces from the timber scaffold which was erected inside the dome, but no complete system of centering was employed. The large panels between these curved ribs, only half a brick thick, are built slightly concave or saddle-like, to prevent their falling inward while the mortar was still fresh. This concavity, however, is so slight it cannot be perceived from below. At five different stages in the height of the dome horizontal arches are sprung from rib to rib, with thin arched floors spanning the space between shells and forming so many ambulatories around the entire dome, and making rigid connections of the various parts. At the same time, wrought-iron ties are placed near these floors to resist any possible tensile strain that might come from the outward thrust or from the tendency to fall inward during construction. Thus it will be seen the entire composition of this dome is a complicated piece of framing and trussing, with all the members in brick carefully proportioned to the work they have to perform, while iron ties are inserted only where tensile strain may be encountered.

As if the difficulties of carrying out this design were not sufficient, the necessity of omitting the external gallery required some device to throw more of the weight of the external shell on the inner columns than was first proposed, and thereby relieve the parabolic arches before described. This was accomplished, as is shown in Figure 8, by carrying the inner member of the principal ribs in a vertical line to the point M, and there inserting granite blocks extending entirely through the dome, and by vertical piers above the granite, throwing the weight of the outer shell to the inside line. This device proved successful, and no movement was apparent in the unequally loaded arches below.

Stone stairs are built into the space between the two shells of the dome, thus giving easy access to the cupola above. This stage of the work was reached in 1880, and before proceeding farther the granite gallery so often referred to, and so much needed both to give symmetry to the building and equilibration to the parabolic arches, was constructed; also the covering tiles were placed on the great dome. These consist of slabs of dense flagstone, about 2 inches thick and nearly 6 feet long, extending from centre to centre of the small brick ribs, while the vertical joints were covered and the whole secured with granite ribs carefully fitted to the slabs and held in place with iron bolts extending through granite and brickwork and keyed-up on the inside.

A notable feature in all the iron connections throughout is that they are made in the old method of keys and wedges, instead of the more modern thread and nut. These bolts, placed at regular inter-

bracket-like piers on each side placed over the outside arches, and four piers on each side over the inside arches. The brackets on the outside support a granite balcony, from which a superb view of the city and surrounding country is obtained. Above this base arc high pedestals, and two stories of granite columns, and inside of these another circle of very small brick columns, between which and the inner row of small granite columns, and inside of these another circle of very small brick columns, between which and the inner circle of stone columns are double flights of winding stairs of stone. The outer circle of columns is but one story high, and supports another outside balcony, crowned in the design with eight angels, presumably blowing the last trumpet.

The stone columns of the inner circle now become the outer ones, and extend two stories higher, with the stairs and inner columns as before described. and now, as at a height of 65 feet above the dome, a slender spire is built for a height of 65 feet, consisting of eight brick piers, about 19 inches by 10 inches, turning the angles and connected with the stone roofing slates, held with stone ribs on the outside, bolted through the angle piers, and braced on the inside by a circle of very small brick columns, between which and the inner circle of stone columns are double flights of winding stairs of stone.

The outer circle of columns is but one story high, and supports another outside balcony, crowned in the design with eight angels, presumably blowing the last trumpet. The stone columns of the inner circle now become the outer ones, and extend two stories higher, with the stairs and inner columns as before described. and now, as at a height of 65 feet above the dome, a slender spire is built for a height of 65 feet, consisting of eight brick piers, about 19 inches by 10 inches, turning the angles and connected with the stone roofing slates, held with stone ribs on the outside, bolted through the angle piers, and braced on the inside by a circle of very small brick columns, between which and the inner circle of stone columns are double flights of winding stairs of stone. The outer circle of columns is but one story high, and supports another outside balcony, crowned in the design with eight angels, presumably blowing the last trumpet.


again we are treated to a story of stone columns, tied together with the two stories of stone columns, tied together with iron rings, and joined by cast-iron brackets. The stairs are no longer practicable, and those who would reach the higher balconies must ascend an iron ladder on the outside of this slender spire. The finial and crowning statue is still elongated, as if determined to get as far as possible from the earth, and the whole is very appropriately surmounted with a star, which we hope will remain a type of the immutable and indestructible. The masonry now reduced to a single flight, continues to wind around the central shaft of brickwork, and reach another stone balcony 85 feet above the top of the dome, or 475 feet above the pavement, the highest point to which the public is admitted.

Again we are treated to a story of stone columns, tied together with iron rings, and joined by cast-iron brackets. The stairs are no longer practicable, and those who would reach the higher balconies must ascend an iron ladder on the outside of this slender spire. The finial and crowning statue is still elongated, as if determined to get as far as possible from the earth, and the whole is very appropriately surmounted with a star, which we hope will remain a fixed star for many years.

South Kensington Museum Buildings.—The Queen's Jubilee Preparations. Facts and figures of the Architectural Association. The Examination Question.—The Retinal Green Improvement. — A NOTABLE EXPERIMENT IN MUNICIPAL PHILANTHROPY.

THERE is now every good reason for hoping that the Government is about to remedy a grievance of long standing. The permanent buildings of the National Museum at South Kensington are about to be proceeded with. The Powers, with whom the petitioners of the ancient castle of foreign sheds and blind walls could move, have last responded to the appeal of the Government of the time instituted a competition among architects for the completion of the building and the first premium was awarded to Mr. Aston Webb, F. R. T. B. A., for a design of vigor and dignity. The matter was, however, proceeded with no further. The existing Government is formed from the same party in politics as set the competition on foot, so that it is the more probable that the new buildings will be carried out according to the designs already prepared by Mr. Webb. For the immediate present this, with the majority of questions of general interest, has been dismissed from the public mind in favor of the Jubilee festivities, on the eve of which we now stand. Much might be written of the scenes and impressions created by the preparations for the extraordinary day of jubilation, of the ingenuity and labor expended on the pavilions and stands lining the route, the enterprise which removes the front grail of a house for the better accommodation of spectators, the preparations for illumination and the precautions for safety to life and limb. The most famous speculation in connection with the procession is that which is undertaken by Mr. Maskelyne, of the Egyptian Hall of Mystery fame. He has erected a enormous pavilion in St. Paul's churchyard, in full view of the great service to be held before the western doors of the Cathedral. In order to do this it was necessary for Mr. Maskelyne to dispossess a house premises, occupying the site; and he has agreed with the owners to erect with all possible dispatch after the Jubilee, now and approved premises at a cost of some £10,000. A large margin of profit is confidently expected by the speculator upon the venture. But it is perhaps the wiser part to confide the facts and features of the celebrations to the hands of the modern journalist.

The Jubilee of the Architectural Association has just been celebrated in a manner, let it be hoped, satisfactory to every class of members: the celebrations, however, even to the most patriotic and enthusiastic supporters of the Association will not come into the likelihood of anti-climax to those other and greater commemorations now so imminent. For the young party the festivities culminated in the Annual Soirée, scaled to the importance of the occasion and the presence of many distinguished laymen, including Lord Halifax, the Bishop of London and others.

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read on various subjects, each followed by a short debate. The real work of the Association is an educational one, and it was chiefly to questions of education that the discussions had reference. The question of technical education and handicraft was entered into and the Conference drifted at last on to the subject of the conduct or

utility of the R. I. B. A. examinations as affecting the architectural education. This is a matter of such long-standing controversy that it has been long ago abandoned by members in general to the charge of the few specialists on either side who are still content to thresh. The President of the Association, who presided, was in favor of the foundation of an "honors' course," to act as an inducement to men of the few specialists on either side who are still content to thresh. The President closed the discussion and said that the examinations were satisfactory so far as construction went, but not so far as art was concerned. The whole profession would suffer a shock if the designs submitted in the examinations were exhibited, and if examining-boards were to show all that were sent in, the whole scheme of examinations would be damned. A matter of wider importance and more general interest was that dealing with the question of new premises in place of the cramped and inconvenient rooms which the Architectural Association at present occupies. A feeling is prevalent among the whole of the members that the existing arrangements are altogether inadequate to the social and general needs of the Association; while educational work is badly handicapped by the lack of accommodation, studios, lecture-rooms, workshops, etc. If, as seems likely, the Jubilee of the Association is marked by a determined and successful effort to better the position in this respect, the occasion will place of the cramped and inconvenient rooms which the Architectural Association at present occupies. A feeling is prevalent among the whole of the members that the existing arrangements are altogether inadequate to the social and general needs of the Association; while educational work is badly handicapped by the lack of accommodation, studios, lecture-rooms, workshops, etc. If, as seems likely, the Jubilee of the Association is marked by a determined and successful effort to better the position in this respect, the occasion will be eh the whole scheme of examinations would be damned. A matter of wider importance and more general interest was that dealing with the question of new premises in place of the cramped and inconvenient rooms which the Architectural Association at present occupies. A feeling is prevalent among the whole of the members that the existing arrangements are altogether inadequate to the social and general needs of the Association; while educational work is badly handicapped by the lack of accommodation, studios, lecture-rooms, workshops, etc. If, as seems likely, the Jubilee of the Association is marked by a determined and successful effort to better the position in this respect, the occasion will be ence of the few specialists on either side who are still content to thresh. The President closed the discussion and said that the examinations were satisfactory so far as construction went, but not so far as art was concerned. The whole profession would suffer a shock if the designs submitted in the examinations were exhibited, and if examining-boards were to show all that were sent in, the whole scheme of examinations would be damned. A matter of wider importance and more general interest was that dealing with the question of new premises in place of the cramped and inconvenient rooms which the Architectural Association at present occupies. A feeling is prevalent among the whole of the members that the existing arrangements are altogether inadequate to the social and general needs of the Association; while educational work is badly handicapped by the lack of accommodation, studios, lecture-rooms, workshops, etc. If, as seems likely, the Jubilee of the Association is marked by a determined and successful effort to better the position in this respect, the occasion will have been commemorated in a manner which to those who have the best interests of the Association at heart, will be at once most suitable and generally beneficial.

It may be noticed that the work of the Association for the past year has been fully up to the standard. The Class of Design and Handicraft, which was so successful last year, has again been highly popular. This year the subject chosen was "A Hillside Church in Westmoreland," and the various meetings have been devoted to the criticism first of the sketch designs to a small scale, the various parts in detail and, at the final meeting, the finished small-scale working drawings, the complete design. The subject is one which appears to have been followed with sustained interest and has evoked highly interesting and original efforts. The general meetings have been well attended and especially in this category must be mentioned the instructive visits which are paid from time to time in the spring and summer to buildings in process of construction.

Perhaps the most important and interesting of these visits was that paid by the courteous invitation of Mr. Thomas Blashill, F. R. I. B. A., Chief Architect to the London County Council, to the extensive improvements now being carried out for the Municipality at Bethnal Green, Shoreditch, E. This embodies a remarkable attempt to solve the problem of the housing of the working-classes and the abolition of the insanitary area. Until about five years ago there existed behind Shoreditch Church, within a mile of the centre of the city, a locality of some 15 acres' area occupied by slums of the very worst character, narrow streets, filthy courts, ramshackle, tumble-down houses. The area comprised twenty streets, of which the widest was but 20 feet across, while the houses, for the most part, according to our present lights, totally unfit for human habitation, were small, dilapidated and very over-crowded. The average population per room was about two persons, while 197 rooms were given up to five or more inhabitants each. The total number of dwellers was 375 per acre as against 108 for the neighboring district, or proportionate to a population of considerably over a quarter of a million to the square mile. Nor did the area appear more desirable if considered in view of the mortality statistics. While the total death rate per annum per thousand for the whole of London was 18.2 and for the Bethnal Green District 22.5, the rate of mortality in the congested locality in question stood as high as 40 per thousand per annum.

On the representation of these facts by the Medical Officer of Health, the County Council, acting under the powers of the Housing of the Working-classes Acts, caused the whole site of 15 acres to be condemned and cleared. This was but following up the policy of the old Metropolitan Board of Works, the forerunners of the County Council. It was the practice of that body upon an insanitary area being cleared to sell the land in the open market to private individuals. This policy was, however, so expensive, that the County Council determined themselves to embark upon a scheme of recon- struction for the whole area. They were perhaps induced also to take this step owing to the urgent need existing in the district for accommodating those occupants whom the clearance had unhoused. A complete scheme was therefore worked out by the Architect to the Council, and this has been steadily proceeding towards completion for the past four years. Much yet remains to be done before the entire scheme will be finished, but it is estimated that by the end of 1898 the works will be complete. There will then be extant one of the most remarkable examples of municipal enterprise in modern times. The general plan that has been pursued is not intricate. It consists in the formation in the centre of the site of an open circus, some 300 feet in diameter, from which seven streets radiate to the town.

thoroughfares on the borders of the area. Of these the main road is 60 feet in width, while those subsidiary to it are 50 feet wide. It may be mentioned that the central space of this circus is occupied by a terraced mound, on the top of which is to be placed a band-stand, with gravel walks and seating space around; the slope between the terraces will be laid out with flowers and creepers and this, together with the planting of trees along the streets, will come under the care of the County Council Parks Committee. The earth of which the central mound is formed is that obtained in sinking the foundations to the various blocks of buildings. It is estimated that a sum of £1,250 has thus been saved in shooting the excavations directly on the site instead of removing it elsewhere.

The blocks of buildings are in various stages of progress. Many are already occupied, while others are but now rising from the ground. Sufficient, however, has been done to permit of the formation of an idea of the aspect the whole scheme will present on completion.

The blocks in themselves vary in detail and treatment. There is no sacrifice of harmony, the connection between the blocks being admirably maintained. On the other hand, there is no evidence of restless effort after the avoidance of monotony. The rough sketches which are included in this letter will perhaps afford an indication of the character of the various blocks, and though it is impossible for these sketches to suggest the color-treatment which is a feature to be noticed throughout: at least they may serve to show that the "artisan's dwellings" hitherto erected in London.

The tenements are of various sizes and descriptions, containing from two to five rooms, with offices, etc., and the rent is approxi-

mately 2s. 6d. per week per room. This is governed generally by the rents ruling in the neighborhood, for the rents of the new tenements must not, by the resolution of the Council, exceed these. The rent of the land, which is 60 feet in width, while those subsidiary to it are 50 feet wide. It may be mentioned that the central space of this circus is occupied by a terraced mound, on the top of which is to be placed a band-stand, with gravel walks and seating space around; the slope between the terraces will be laid out with flowers and creepers and this, together with the planting of trees along the streets, will come under the care of the County Council Parks Committee. The earth of which the central mound is formed is that obtained in sinking the foundations to the various blocks of buildings. It is estimated that a sum of £1,250 has thus been saved in shooting the excavations directly on the site instead of removing it elsewhere.

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Mr. Berg, who had not the slightest idea of this pleasant expression of the members of their appreciation of his work, replied in very touching terms, after which the members adjourned to look at the pictures and other treasures of throughout the building.

Next meeting will be in September, after the holidays.

A. G. THOMSON, Secretary.

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

DETAILED OF HOUSE FOR GIRAUD FOSTER, ESQ., LEXINGTON, MASS. MESSRS. CARREÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

[Issued with the International and Imperial Editions only.]

HOUSE OF GIRAUD FOSTER, ESQ., LEXINGTON, MASH. MESSRS. CARREÈRE & HASTINGS, ARCHITECTS, NEW YORK, N. Y.

DETAIL OF THE SAME.

PITCHETT'S HOUSE, WEST CHESTER PIKE, LLANARE, PA. SKETCHED BY MR. FRANK A. HAYS, ARCHITECT, PHILADELPHIA, PA.

DESIGN FOR A HOUSE. MR. W. G. RASTOUIL, ARCHITECT, BOSTON, MASS.

HOUSE FOR G. W. BROWN, ESQ., PORTLAND PL., ST. LOUIS, MO. MR. F. C. ROYANCE, ARCHITECT, ST. LOUIS, MO.

[The following named illustrations may be found by reference to our advertising pages.]

MONUMENT TO DANTE ALIGHIERI, TRENT, AUSTRIA.

The city of Trent, on the left bank of the Adige in the Tyrol, has recently, with the aid of the province of the same name, erected a monument to Dante Alighieri, the great Italian poet, whose works have long since become the common property of all civilized nations. The monument, which by general consensus is pronounced to be the finest of the many memorials erected to Dante up to date, breathes the spirit of the “trecento” embodied in the great Florence. It stands upon the Piazza Stazione, now named after the monument, and is surrounded by flower-beds and shrubbery. It is of imposing height, measuring almost sixty feet. The pedestal is of rose-colored granite from Podocara, in the Flemish valley, while the bronze statue was cast at Rome. The inscription, encribing the base, reads: “A Dante. Al Primo del Trecento e dell’ Italia Nazionale.” To the Father of the Province of Trent, with the applause and the aid of the nation.” Upon the rear is an obelisk bearing the arms of the old episcopal city of Trent, while on the scrolls are seen the letters “R. P. Q. T.” (Senatus Populusque Tridentinus) and the year 1896, in Roman characters. The groups surrounding the pedestal represent characters taken from Dante’s most celebrated work, the “Divina Commedia.” On the topmost of the steps leading to the base, sits upon the dragon the expressive figure of Minos, the “Judge of the Dead,” as pictured in the fifth canto of “Inferno.” Above him, in the middle of the figures and scenes from “Purgatorio,” enirling the pedestal, we observe Sordello, the troubadour, throwing himself at the feet of Virgil, with Dante gazing intently at the pair. Figures of the “Dammed” crowd around this effective group. Still higher up, the allover represents an allegory of Paradise, with Beatrice gazing down upon the poet descended into purgatory. The lifelike station of the poet, surrounding the whole composition, is sixteen and onehalf feet in height. It shows Dante arrived in the familiar traditional flowing robe, crowned with the laurel-wreath, gazing with prophetic glance into the distance, holding a book in his left, his right hand stretched out, as if the poet were speaking impressively to the people.

The monument is the work of the talented sculptor, Cesar Emilio Zocchi, born 1851, at Florence, Italy. Including the time required to complete the work.

MONUMENT AUX ENFANTS DE LA LOIRE-INFÉDÉRÉ, NANTES, FRANCE. M. ED. CORROYER, ARCHITECT; M. L. BAREAU, SCULPTOR.

This monument, dedicated April 21 last, cost about $12,000; the State providing about half the amount to balance that provided by

Yean's.- The present plaintiff, like the plaintiff in the other instance, claims under an old Spanish grant. In the Saboba case the Supreme Court held that the claim of the Indians were entitled to the complete possession of all lands which they held at the date of the treaty of Guadalupe Hidalgo, for cultivation, habitation or pasture. In the cases now pending, counsel for the defence have produced evidence—which to-day stands uncontested—that those Indians have been in possession of the lands in controversy for a period of more than sixty years. The lower court, however, appears to have refused to regard this evidence as relevant and material, in spite of the Saboba precedent.

The Indians have been ably defended by Frank D. Lewis, a special attorney in the employ of the Indian Bureau, and by Shirley C. Ward, who has a retainer from one of the philanthropic societies of the East. Besides these, Attorney-General McKenna, as soon as the matter was laid before him by the Indian Rights Association, ordered the United States Attorney for the Southern District of California, Frank P. Flint, to appear in the case in behalf of the Indians and of the Government as their guardian. So the fate of the Indians is not due to any lack of legal talent, learning, or energy, but only of the financial means to carry their fight for their homes one step further.

"This is what makes the situation so pitiful—that these Indians should be made outcasts by the operation of law, yet in defiance of law, and because they are too poor to carry on their struggle to the point, a little farther ahead, where victory seems all ready to reward their perseverance. What will become of them? There are other Indian reservations in the neighborhood, small affairs, many of them bare equal to supporting the people now on them, or contain nearly all that is left for the only sort of agriculture the Warner's Ranch Indians have learned. But there will be about four hundred more Indian families, who will make an effort to study the condition of these and other Mission Indians; but he cannot, unassisted, bridge the gap between the day they are turned out of their homes and the day that new homes are found for them—if any can be found—nobody knows. It is an incident of Romona in real life."

The regular monthly meeting of the Brooklyn Chapter of the American Institute of Architects was held on Saturday evening, June 19, 1897. This being its last meeting before the summer holidays, the members of the Chapter were invited guests of Mr. Louis DeCoppet Berg, past President, at the Hamilton Club, Remsen and Clinton Streets, Brooklyn, N. Y. A full house, and the meeting was called to order by our Vice-President, Mr. E. D. Elmer.

Mr. Berg introduced a paper as the sense of the Chapter, expressing his thanks to Mr. J. B. Maxwell for the privilege he had extended the members in allowing them to examine the Atlas Cement Works, and the reports he had provided to explain the manufacture of this cement.

The subject for the evening's discussion was, "Cometes and Cement Mortars." Nearly every one present took part in the discussion, but the subject is so extensive and inexhaustible, that when the time for adjourning had arrived the discussion was only well under way; it was, therefore, proposed to continue the discussion of the same subject at our next meeting.

When the meeting adjourned, the members were invited to partake of a very sumptuous supper, artistically arranged in an adjoining room.

When coffee and cigars were being served, our host was much taken by surprise, when the President, Mr. Morse, began to eulogize our former President (Mr. Berg), speaking particularly of the work and labor he had performed in organizing our Chapter and putting it on a working and successful basis. At the close of his remarks, when he had presented on behalf of the members of the Chapter, with a sterling silver salver, engraved, Mr. Berg had not the slightest idea of this pleasant expression of the members of their appreciation of his work, replied in very touching terms, after which the members adjourned to look at the pictures and other treasures of throughout the building.

[The following named illustrations may be found by reference to our advertising pages.]

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IT is impossible to avoid the impression that the men of to-day are going for shelter. The Commissioner of Indian Affairs, on his journey to the Pacific Coast to open tenders for supplies at the San Francisco warehouse, will make an effort to study the condition of these and other Mission Indians; but he cannot, unassisted, bridge the gap between the day they are turned out of their homes and the day that new homes are found for them—if any can be found—nobody knows. It is an incident of Romona in real life.
private subscriptions. The pedestal is of granite, the figures of bronze. The sculptors of the supporting figures about the die are MM. Allouard, Baralis and Le Bourg.

There is nothing so uncertain as the yearly fire-loss. It is impossible to tell why, when the number of fires and the number of risks burned increased by thousands, the fire and insurance loss fell below the loss of 1895 by millions. True, there were only three great fires during 1896, but neither were there more than three great fires during 1895, when the total property-loss exceeded one hundred and sixty-seven million dollars ($167,000,000). In 1896 it had been reduced to a little under one hundred and twenty million dollars ($120,000,000). The average of the last eleven years is one hundred and forty-three million dollars ($143,000,000). While this average is uncertain year by year, it may yet be remarked that the amount of property subject to insurance by fire has increased enormously during the present generation, and especially during the last decade. One table given by the Chronicle indicates this great change. It appears that in the year 1886 the average property-loss in each fire was six thousand eight hundred and ninety-three dollars ($6,893). The average insurance-loss was three thousand nine hundred and seventy-five dollars ($3,750). In that year the total loss was one hundred and five million dollars ($105,000,000).

In 1896 the total losses were a little under one hundred and ninety million dollars ($189,000,000). The average property-loss was two thousand seven hundred and ninety-one dollars ($2,791); the average insurance-loss, one thousand seven hundred and thirty-seven dollars ($1,737). Our fire tax does not, therefore, bear anything like the same proportion to property insured that it has in previous years. We may take some comfort in that, huge as it still is. There is one point to which I wish to draw the special attention of your readers. The masters of combustible architecture dealing with certain classes of buildings, where they have not met with the greatest success, are still achieving a more complete destruction of the property than ever before. The figures of certain classes will prove this. The numbers burned in each year are given below.

| Year | Number Burned | Percent of Whole
<table>
<thead>
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<tbody>
<tr>
<td>1893</td>
<td>266</td>
<td>340</td>
</tr>
<tr>
<td>1894</td>
<td>251</td>
<td>302</td>
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<tr>
<td>1895</td>
<td>210</td>
<td>145</td>
</tr>
<tr>
<td>1896</td>
<td>52</td>
<td>59</td>
</tr>
<tr>
<td>Total</td>
<td>989</td>
<td>1105</td>
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It may be remembered by the readers of the Architect that I have from time to time called attention to the complete success which ensues from the cellular construction of these particular classes of buildings, warranting the maximum of destruction from the minimum of fire. This was the fact of which I spoke when I began to analyze these figures about twenty years ago. From that date to the present there has been a progressive increase in the destruction by fire in these classes of buildings, with a progressive increase in the number of lives lost year by year. All of which is respectfully submitted, E. Atkinson.

**COLONIAL CLAPBOARDING.**

Boston, Mass., June 20, 1897.

To the Editors of the American Architect:

Dear Sirs,—In regard to the diminishing width of the clapboards from cornice to sill, I have seen several old houses so built, sometimes quite regularly diminished, and have also seen modern houses so done in, I presume, imitation of our fathers and have always supposed that such old houses were built when clapboards were split out of quartered blocks (as rift pine shingles formerly were) and the different widths were so made simply to save stock—which would account for it in a reasonable way. Clapboard and lath-sawing machines are a comparatively modern invention.

Yours, etc., D. A.

**GEORGIA FIRE-CLAY.**—Georgia is claiming the possession of the best fire-clay in the United States. The State has been a producer of clay in a modest way, standing twentieth in a list of the clay-producing States, but it hopes soon to take a much higher position in this hope is based on a report by Dr. G. E. Ladd, the Assistant State Geologist, who has been testing the Georgia clays for a year, and who has found a bed of the very best clay, extending across the State from Columbus to Augusta. This clay, Dr. Ladd says, is "the most refractory in the United States," that is, it "will stand a greater heat than any clay I have ever tested in America." The bed varies in width from five to fifteen miles, and follows an irregular line, sometimes running north and again to the south. At some points the clay is very pure and refractory, but at others it is full of impurities and is not valuable. The best of it is worth $10 a ton in the markets. In South Carolina, just across the Savannah River from Augusta, there is a clay deposit of the same character which brings in $300,000 a year. That clay is shipped to New Jersey for manufacture.—New York Evening Post.
HOUSE OF DR. LEIDY, 1319 LOCUST STREET, PHILADELPHIA, PA.

W. EYRE, JR., ARCHITECT.
WEST CORRIDOR, MEZZANINE FLOOR: LIBRARY

Architects: SMITHEVER & PELZ
HOUSE OF GIRAUD FOSTER
CARRERE & HASTING