

MODERN ARCHITECTURE OF AMERICA.

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“There can be no architecture without construction, and no good architecture without good construction,” says Ruskin; nor does a well-constructed building mean good architecture, unless it meets properly the practical uses which call it into existence. But even so, it does not become a work of architecture unless with these merits is incorporated that of beauty.

All architecture is based on one or more of the four fundamental structural principles of (1) the lintel, (2) the arch or vault, (3) the truss, (4) cohesive construction.

The principle of the lintel is that of resistance to transverse strains, and appears in all construction in which a single cross piece or beam rests on two or more vertical supports.

The Arch or Vault makes use of several pieces to span an opening between two supports. These pieces are in compression, and exert lateral pressure or thrusts, which are transmitted to supports or abutments. The thrusts must be resisted either by the massiveness of the abutments or by the opposition of counter thrusts from other arches or vaults. Roman builders use the first, Gothic the second.

The Truss is a framework so composed of several pieces of wood or metal that each shall best resist the particular strain, whether tension or compression to which it is subjected, the whole forming a compound beam. It is especially applicable to very wide spans, and is the most characteristic feature of modern construction.

The fourth principle, that of the cohesion of materials shaped while plastic and hardening or setting into a homogeneous structural unit, although known to the Romans and employed by them in a limited way, has within recent years undergone an extraordinarily rapid development. It employs concrete made of cement and small stones, or other like material, moulded while plastic into the necessary structural forms, and supplied with bars, rods and wires of metal buried in the beams or slabs, subject to transverse pressure, to take up the tensile strains, which the concrete alone is ill-fitted to resist.

Reinforced Concrete.—While its most rapid development has been in works of engineering, has its applications to architecture being daily multiplied, and it is sure to exert a marked influence on the design of the coming years; but in architecture, so far, its uses are limited.

It is not my intention to deal in a technical manner with American structural principles, but rather to take a quick glance and see the type of architecture these principles have developed.

America is one of the few places in the world whose architecture has entered upon an independent course of development, and this only within a comparatively recent period; and as yet, this development has not produced a wholly independent national style. It has, however, originated new types of buildings and a distinctly American treatment of composition and masses in many classes of buildings, the decorative detail being still for the most part derived from historical precedent.

The range of the architects' work to-day is from pure art to pure science. It requires on one hand an understanding of engineering, structural, sanitary, electrical, and mechanical; and on the other, sculpture and painting. These duties bring him into direct and responsible contact with business questions and with problems of design based purely upon sentiment. He is expected to be an expert as an artist in design, as an engineer in construction, as an administrator in the practical execution and legal protection of his clients' affairs. He must know how to design not only buildings, but bridges; not only gardens, but cities. He must solve problems from church to factory, from great monuments to caisson foundations; so the time has come when there must be a close union between the professions of engineering and architecture.

For the most part, the works of recent years show a more or less judicious eclecticism, the choice of style being determined partly by the person and training of the designer, and partly by the nature of the building. For the last 20 years the Renaissance styles seemed to have generally prevailed, although here also is a very wide difference of opinion as to the version or particular phase of these styles to be employed. Underlying this apparent confusion, however, in the choice of style, the careful observer may detect that certain tendencies crystallising into definite form, such as new methods of construction, new materials, increased attention to detail, a growing sense of monumental requirements, even the development of the lift instead of the grand staircase, are leaving their mark strongly on the planning, the proportions, and the artistic composition of American buildings, irrespective of the styles used. The art is certainly there in a state of transition, in many respects no doubt very open to criticism; but it appears to be full of life and of great promise for the future. In the commercial buildings, the American people have developed wholly new types, and these have been brought into existence through imperative influences, such as the demand for fireproof

construction, the demand for well-lighted offices, the introduction of lifts, and the concentration of business into limited areas.

These causes have led to the erection in many cases of very high buildings, the more recent ones being constructed with a framework of steel columns, and beams or reinforced concrete, the visible walls being merely a filling in.

Now, to render a building of 20 stories or more attractive to the eye, especially when built upon an irregular shape, is certainly a very difficult problem, to which a wholly satisfactory solution has yet to be found; but the American people have obtained some notable achievements in this line. They have recognised that a tall building should have a well-marked basement, and a somewhat ornate crowning portion on top, and the intervening storeys serving as a shaft, which is to be treated with comparative simplicity.

The problem of scale and of handling from 100 to 300 windows of uniform style is also a very difficult one, but has been met and surmounted with very great skill in many cases, as, for instance, in the West Street Building, by Cass Gilbert. the Woolworth Building, the Flat Iron and the Metropolitan Tower.

In some cases, and especially in Chicago, the metallic framework is suggested by slender piers between the windows, rising uninterruptedly from the basement to the top.

In the detail of American building, every variety of style is to be met with, but the Romanesque and Renaissance freely modified predominate.

Some of the architects in Chicago have developed an original treatment of architectural forms, by exaggerating some of the structural lines, by suppressing the mouldings and more familiar historic forms, and by the free use of flat-surface ornament. Louis H. Sullivan has introduced this personal style which illustrates freedom of the art in a land without tradition, and it seems to have obtained a number of followers.

Terra cotta of all colours is to be seen all through the most recent buildings.

In domestic work, the most characteristic and original phases of American architecture are to be seen, particularly in rural and suburban residences.

In these the peculiar requirements of the varying climates and of the American domestic life have been studied, and in a large measure met with great frankness and artistic appreciation. The broad staircase hall, serving as a sort of family sitting room, the piazza or verandah, the picturesque massing of steep roofs in the East, the flat roofs in the West, and the charm-

ing use of brickwork, have been the controlling factors in the evolution of two or three general types which appear in variation.

The artlessness of the planning, which is arranged to afford the maximum of convenience rather than to conform to any traditional style, has been an element of great artistic success. It has resulted in exteriors that are the natural outgrowth of the interior arrangements frankly expressed without any affectation of style.

The architectural activity of the United States since the new century opened has by no means been confined to industrial and commercial architecture. While the erection of very tall office buildings has continued in the great commercial centre, the most notable architectural enterprises of recent years have been in the field of Educational Buildings both in the East and West, as seen in the Columbia University in N.Y., etc.

Many American architects are noted for doing the unexpected, and when one looks over the various schemes and types of buildings erected, one seldom finds that they have succeeded through working out the problem in the obvious way; but very often they have found a new ingenious and entirely reasonable solution. One example of this in quite recent work is the scheme for the Oakland City Hall, which is unusual, unexpected, and still logical.

There is no reason, except tradition, why vertical circulation and vertical juxtaposition of departments, whose functions are related, is not as good in these days of full and rapid elevator service as is horizontal; and there is no doubt but that the higher we can lift offices above the street the more they gain in quiet and comfort—the proof of this is that the upper stories of an office building invariably rent the more readily.

Now, in the Oakland City Hall the architects have deliberately separated the building into two portions, and have expressed this difference in the elevation; they have built a low building of monumental character to house the judicial and legislative functions, and in the centre of that have erected a rather tall office building for the administrative offices. A scheme so entirely natural and practical, that after its utility is thus demonstrated one is rather surprised it has not been previously done.

There is something distinctive in all American work. It has evolved buildings to suit the climate and the commercial conditions. It may at times hurt the feelings of sensitive persons brought up among old-world forms and ideas of architecture; but after a short acquaintance, one understands the mean-

ing of every stone on which individuality has been stamped, and the architecture becomes something very real. An office building says distinctly, "I am an office building." A railway station says, "Get a bustle on."

A warehouse tells you as plainly as you can have the words spoken, "We mean business," and so on with all the buildings.

And I think that this elevation, thoroughly expressing the plan, will eventually give the world some very fine work, and work of great architectural merit.

There is a regenerated material that is very little known in this country, through the medium of which the American architects are obtaining some very beautiful results, and that is terra cotta. Perhaps to many it will seem very strange that terra cotta colour, that peculiar, rather unsightly reddish buff, is one of the few colours that American manufacturers do not make. It flourished for awhile 30 years ago, but its day now is very much over.

Imagine, for instance, a small four-storey building of brick with sills, a belt course, and cornice of terra cotta, terra cotta colour, standing on the corner of Liberty and Nassau Street, New York, 30 odd years ago.

This part of New York is the very centre of the tallest buildings and greatest business now. Go down there to-day and see the Liberty Tower entirely of dull soft cream and coloured-glazed terra cotta for 32 sheer storeys; this will tell you the story of the growth of terra cotta, as also will the Woolworth building and many others.

The fact that terra cotta was developed to such a high state several centuries ago makes it strange that the art of making it should have been so entirely lost until its recent regeneration.

The Della Robbia brought glazed terra cotta to great efficiency in their time. "Della Robbia" is far better known than "terra cotta" colour, and yet it is true terra cotta.

Modern methods have brought terra cotta in colour possibilities and structural efficiency to a higher plane than it ever attained in its former existence, but it had to be developed again from the beginning.

To-day in America any possible colour or colours or combination of colours or tints through the combination of any colours may be obtained, and the result is often very beautiful. Hardly a building runs up to-day without terra cotta in some shape or form, and often the whole of a building is faced with this material. Either a dull or glazed finish can be obtained. Practically all cornices of any size are constructed of this material, and it is interesting to look at a typical cornice and the manner in which it is constructed.

The theatre and moving-picture houses are other buildings that the American people have developed in a masterly manner, and I can certainly say that from my own experience I have not yet seen theatre buildings in any part of the world to compare with those to be found in New York and other American cities.

Hospitals, Warehouses, City-planning, Monuments, and, in fact, every architectural edifice or problem, the American people have attempted and have solved in a very satisfactory manner, indeed, and the treatment of each architectural question is worth a paper in itself.

The same frankness seen in American architecture is also to be seen in the people themselves. There are many things that most of us don't understand in the American work and people, and these are the things that we mostly do not care for. When thinking of or talking to American people it must always be remembered that although they speak a similar language to our own, they are as different from us in their customs and manners as French or any other foreign or European people.

Future generations will find out that no nation of to-day has given as much to the modern world in architecture, engineering, and, in fact, all modern professions, as this, the youngest of nations; and when the history of our day is written, the people to follow us will read that America, with all its so-called bluff and graft, has used its great mind, resources, and wealth for the betterment and advancement of the world.

One word on architecture and art generally before concluding.

A nation's artistic productions and its scientific activities are not mere national property; they are international possessions for the joy and service of the whole world.

The nations hold them in trust for humanity.

As the world grows older and the ages recede, the richer, the more precious and the more fragile become the ancient heirlooms of humanity. They constitute the final symbols of human glory; they cannot be too carefully guarded or too highly valued, but all the other dangers that threaten their integrity and safety do not put together equal the barbaric actions that destroyed glorious Rheims, priceless Louvain, and the wonderfully beautiful Cloth Hall of Antwerp.

Greater than any written work, architecture has told the history of nations and of peoples; and in centuries to come, the same old architecture, the same old priceless works of Art, will tell to future generations the story of those who attempted to destroy them.