ABSTRACT OF LECTURE

ART AND ENGINEERING.
By J. T. Noble Anderson.

"Who sets the game before the prize."—Newbolt.

This is the best definition of the true artist. And there is a brotherhood between all such, incomprehensible alike in its generosities and jealousies, to the workers who toil merely for the monetary reward.

No matter how skilled and clever may be the handicraftsman whose soul was never lighted by this light, which has never shone on land or sea, his work will always be the work of the copyist. That supersensitiveness which too often is an attribute of the artistic temperament, when also associated with very highly developed faculties, frequently produces what is called genius. A genius is not necessarily an artist, but it would seem almost a necessity for the development of genius that at some period in its formative age it had been stimulated by a Divine Afflatus.

It should not for one moment be assumed that the true artist must be original; on the contrary it is only when studying the greatest works of art that one realises the full truth of that artist King Solomon's adage, "There is no new thing under the sun." What the artist does is he assimilates and makes his own the works of his predecessor. "Art is long." It is more a long, naturally-growing life. And the work of each succeeding generation of artists is in no wise different from that of their predecessors than they themselves are different from their fathers and grandfathers. And yet each is something fresh and new, as each child is new and fresh with a new individuality. In other words, it may be taken that in art a true evolution appears. And an honest progressive race will make a distinct advance each generation, using the newer and better material at its hand so as to more clearly express itself than its predecessors.

In its narrower artificial meaning the art of the Engineer is less artistic than the work of the Architect, because the work of the latter is more concerned in the unworldly and barren labour of decoration. But in its essence it is a true art; and the works of the Engineer—though, when first they come before the general public, unfamiliar with the way they meet the needs of the day, are almost invariably condemned as ugly—will in years to come, when they are perfected, and when the public recognises and realises their meaning, and how each part is beautifully co-ordinated and fashioned to serve its respective purpose, will be acclaimed as the most beautiful things in the world.
As an instance, when some fifty or sixty years since, before the lesson taught by Turner had thoroughly penetrated to the conservative minds of the Royal Academicians, it was still thought that the most graceful and beautiful thing that lived on the waters was a Lord Mayor's Galley, or a lateen-rigged dhow. More than a generation ago when sails were first beginning to disappear before the larger steam boats, the same people who preferred the simpler and older craft began to see new beauties in the full-rigged boat, and it was the fashion to say—"The most beautiful thing in the world is to see a full-rigged ship with every sail set, but all that romance and beauty will soon be a thing of the past, and those hideous steam boats will be all we will see on the water."

Uneconomical attempts were made, as in the old City Line of Trans-Atlantic steamers, and our Aberdeen Line, to imitate the beautiful lines of sailing ships, but under the stress of commercial competition this artistic effort was ultimately abandoned, and if these old hulls were put on the water again (by the way, we have two of this class still here in the shape of the S.S. Edina and the S.S. Rotomahana) no one would see any superior beauty in them, and instead of being regarded with the admiration which at one time they were expected to elicit by reason of their graceful lines, they would be simply regarded as ludicrous anachronisms. No better illustration of the conservation of the art instinct could be cited than the old-fashioned figurehead, a reminiscence of the original galley crested with a sea bird, generally in imitation of a swan to which the general lines of the ship also approximated.

The figurehead now is almost completely abandoned and looked on as an intrusion, though it is still carried by some of the men-of-war, but in an entirely different manner and dwarfed so as to harmonise inconspicuously with the lines of the ship.

This changing view of what is beautiful strongly supports the contention that art is of the nature of custom, and the artist always views what is unfamiliar with suspicion. Many examples of how rapidly public taste changes could be given from the ornamentation of many of our Melbourne structures, but unfortunately a free criticism is impossible, because it would be resented by the friends of those who are or have been our contemporaries. However, it is not out of place to say that the Engineer should be glad that the nature of his art relieves him from the great difficulty which the Architect has to face to make his work conform rather to the conventional ideas of beauty of the contemporary public than to its true purpose.
In architectural work the public are affronted by too slavish a copying of old work, and yet they are irritated and annoyed at any attempt at originality in ornament. And this no doubt has common sense behind it.

It is the function of the artist in the architect to have such an instinct for ornament that he will know just where to place his ornament, and of just what nature that ornament should be. Such skill is only got by constant study and practice, until the canons of art become part of his subconscious mind.

And just as the Engineer should have been trained in art sufficiently to thoroughly appreciate the work of the Architect, if the two professions are to co-operate it will also be necessary for the Architect to have a sufficiently liberal engineering training to thoroughly understand the motif of every member which he is called on to ornament. When this is so, supporting struts will not be ornamented by making them appear like chains, and the use of festoons will be to emphasise the rigidity of the members they adorn.

There is no need to stress the necessity of co-operation between Architect, Engineer and Sculptor for such great works as city bridges, because under modern specialist conditions the best results cannot be achieved on a really big structure without the employment of the best specialists in each branch. And at the same time the constructor must be the master mind, and have the final say on all minor matters. Thus obviously it was only by proving his vast engineering skill that Michael Angelo obtained the opportunity to fully express himself in St. Peter's.

In New York the Architects are always complaining of the small sums made available for ornamentation, and the subsidiary position their work is assigned by a purely commercial clientele; and yet the chief variety and beauty of the giant palaces are obviously dictated by necessity, and not introduced for ornament. And the ornament bears so small a place in the success of the general design that few of the public are aware that they have any ornamentation. This is the essence of successful ornament, that it fulfils its purpose without being noticed. A great structure on which the ornament is too obvious is of the same category as the vulgar rich who love to display their wealth on their person. A properly-clothed structure, like a properly-clothed citizen, should have no feature of ornamentation which will attract particular attention. This at once relegates the artistic embellishment of such structures to the conventual.

Before elaborating on this aspect, one word on what is the essence of beauty will not be amiss.
In referring to a monumental paper on a somewhat similar subject to the present, the writer was much struck with the progress that modern psychology has made in the last 25 years. The Pundits, which were then accepted as Holy Writ, following the vague yearnings and entirely misunderstood inherited instincts dealt with dogmatically by the Ruskin school, are now quite discarded.

Nothing in psychology is more thoroughly established than the fact that the evolution of life is part and parcel of a greater, if more intangible, evolution of the spirit that informs and moulds life into communities, and indirectly establishes not only the species of life, but is the very essence of that spirit which humanity in all ages has revered as Divine.

In the manifestations of this spirit we find those emotions which give our sense of beauty. And their close connection with Nature worship will at once be evident by a consideration of how our conceptions of beauty are connected with the history and surroundings of the race from which we have sprung.

The Psalmist sings: "I will lift up mine eyes unto the hills from whence cometh my help." And again: "How beautiful on the mountain are the feet of the messengers."

The mountains and the forests have been the refuge of the primitive peoples in every land. Hence we find the delight in beauty of mountains and forests is embedded in the breast of all humanity. Even the dweller on the plains, who has never seen a mountain or a forest, feels his spirit stirred by their beauty, and hence it comes that in all their attempts to build beautiful shrines for the Deity these two have formed the principal "motif."

(Slides were shown to establish how the grandest cathedrals were a repetition of the forest in stone, while the most beautifully laid out homes combined the forest with that other even more efficient protector of the race and giver of all wealth, namely, water. How wonderfully the devoted monks of the middle ages translated these instincts could be seen in two slides of Chichester Cathedral and Fountains Abbey. The spirit infused into their architecture and landscape gardening by the monks had been caught by their successors in palace and manor).

So far only British scenery has been used in this address to explain this similarity of appearance of the cathedral or temple to the forest, but it is obvious that different climates give different conceptions of forest or mountain. (This was made evident by the views of Venice, and was further explained by the series of Mexican views.)

Here is introduced another aspect of the use of buildings in a plain country, associated with a second religious instinct, namely, the instinct for sacrifice. Here is evident the "motif" of the Druid stone alike with the pyramid. On the arrival of Cortez and his Spanish Conquisitors, only four centuries ago, they found the most wonderful survival of those primitive civilisations which in Europe and Africa had been destroyed by the Roman civilisation.

Here they found pyramids put to their natural use, namely, as the greatly elevated altars, on which tens, nay, hundreds, of thousands of quivering spectators could see the dreadful ceremony of human sacrifice.

These mounds and pyramids being proportionately greater than our British Druidical remains, the crowds of spectators which could be gathered in the rich Mexican plains or in the valleys of the Nile or the Euphrates must have exceeded the crowds which the Druid ceremonies could gather in their forest glades. The modern uses of these Mexican pyramids, or holy mounts, are often for fortresses, as at Chapultepec, or occasionally for shrines or churches.

In no place is the wonderful appreciation of water as a thing of beauty better understood than in Mexico, and it is in tropical and semi-tropical countries, especially countries of arid plains, that this is most appreciated, as shown in the adornment of the fountain from which the city of Mexico up to fifty years ago obtained all its water supply.

What would be the great monument of Marseilles, or the monument Victor Emmanuel in Rome, without the fountains? The clear beauty of the fountains of the palace at Chapultepec must be seen to be realised.

In the views of Lismore Castle and Chatsworth, it will be seen that the pride of place is given to the bridge.

Returning to our own British Isles, it is only those palaces where they have water and bridges that are given the supreme place for beauty by connoisseurs. And the instinct of beauty is well interpreted in the words of Hillaire Belloc:

"The Church Tower was built right out into the stream, and the current went eddying round it.

"But why is it that strong human building when it dips into water should thus affect the mind, I cannot say, only I know that it is an emotion apart to see our device and structure where it is most enduring, come up against and challenge that element which we cannot conquer, and which has always in it something of danger for men.

"It is therefore well to put strong mouldings on the piers and quays, and to make an architecture of them. So does Venice enthrall one."
DISCUSSION

But you naturally enough say, this is all very well as a dissertation on art, but what attention does the Engineer give to such matters? All the chief elements of the true artist's make-up go to make of the Engineer the master artificer.

First, enthusiasm and devotion.
Second, imagination.
Third, balance and accurate appreciation of facts.
Fourth, forgetfulness of self and co-ordination, or, as Ruskin has called it, "obedience."

In fact, all those attributes which Ruskin has named "The Seven Lamps of Architecture."

DISCUSSION

The President said he had the greatest pleasure in moving that a hearty vote of thanks be conveyed to Mr. Anderson for his instructive and eloquent lecture. The paper was full of inspiration, and he was sure all would join with him in an expression of their most grateful thanks. Mr. W. Ison supported the motion, which was carried by acclamation.

Mr. Anderson briefly returned thanks.

The President said the subject was most important in this so-called utilitarian day. Because structures, for many of which Engineers were responsible, were built on utilitarian lines, it had become customary to consider that they must be devoid of beauty. Mr. Anderson had shown that they need not necessarily be so. Although an engineering structure had been built of cast iron, or wrought iron, or steel, or reinforced concrete it might not be less beautiful than its predecessors that had been built in stone or brick. The same principle applied to timber. Mr. Anderson had shown some steel bridges which were wholly inartistic; others were most artistic. The connection between the Architect and the Engineer had been well brought out by Mr. Anderson. It might be news to some Engineers to hear that the earlier instruction of the older Engineers was an artistic course. They had to serve a certain number of years in art before starting the practical side of engineering. He thought the instruction then gained was a very good preamble to the instruction received afterwards as engineers.

Mr. Wm. Chas Rowe asked of what material the aqueduct in Mexico was constructed which had been referred to as of an age 2,000 years before Cortez. Mr. Anderson said it was rubble stone plastered with hydraulic limes of the district.
Mr. Rowe said that indicated a civilisation very much earlier than our own. With regard to the association of art and engineering, in many structures they were, in his opinion, very widely separated. The first principle of engineering was undoubtedly utilitarian. They must follow the laws of nature as they understood them. They must utilise them, and anything in the nature of art must be to a certain extent camouflage.

Mr. J. Sarvaas said it was absolutely essential that Engineers should exhibit some leaning towards art. He agreed with the President that further education in the principles of art should be given in training the Engineer, particularly with regard to the details of structures. The general public did not worry over stresses and strains, and the amount of allowance for expansion; they judged by the less important matters which they did understand. Therefore the Engineer was bound to consult with those who were proficient in that direction. A large work like the Church-street bridge was not the conception of one mind. The plans had been changed from rigid arches to hinged arches. In the foundations great variations had been made from the original designs. Engineers had been constantly at work, and had collaborated with Architects to bring about the most satisfactory result.

Mr. W. Reid Bell said that in engineering problems reason must be satisfied as well as the purely aesthetic.

Mr. W. Ison said the Working Men's College had for 30 years past taught the engineering student to cultivate the artistic sense by including in their training a course in free-hand drawing. He could vouch for the value of that course, because he instinctively found himself trying to make any construction good to look at and good to use. That phase was not neglected as far as the Working Men's College was concerned. Engineering construction was always subject to certain laws, formulae, etc., whereas in art there was no law. It depended almost entirely on the individual.

Mr. W. Reid Bell considered freehand drawing should be the foundation of instruction in engineering drawing, as it trained the powers of accurate observation. The student acquired a faculty which ever after gave an artistic turn to his designs.

Mr. J. T. N. Anderson, in reply, said he agreed with Mr. Bell. He would include sketching from models in the drawing curriculum.

The discussion was declared closed.

The Institute is not responsible for the opinions advanced or the accuracy of the statements made by the several authors and contributors.
Library Digitised Collections

Author/s:
Anderson, Joshua Thomas Noble

Title:
Art and engineering (Abstract of lecture & Discussion)

Date:
1924

Persistent Link:
http://hdl.handle.net/11343/24637

File Description:
Art and engineering (Abstract of lecture & Discussion)