

ARC 331: Theory Excerpts ("Style & Material")

AUGUSTUS WELBY NORTHMORE PUGIN
THE TRUE PRINCIPLES OF POINTED OR CHRISTIAN ARCHITECTURE (1841)
(LONDON: ACADEMY EDITIONS; NEW YORK: ST. MARTIN'S PRESS, 1973).

Principles of Pointed or Christian Architecture

The object of the present Lecture is to set forth and explain the true principles of Pointed or Christian Architecture, by the knowledge of which you may be enabled to test architectural excellence. The two great rules for design are these: 1st, that there should be no features about a building which are not necessary for convenience, construction, or propriety; 2nd, that all ornament should consist of enrichment of the essential construction of the building. The neglect of these two rules is the cause of all the bad architecture of the present time...

In pure architecture the smallest detail should *have a meaning or serve a purpose*; and even the construction itself *should vary with the material employed*, and the designs should be adapted to the material in which they are executed.

...

We have in the next place to consider the use of cast-iron. When viewed with reference to mechanical purposes, it must be considered as a most valuable invention, but it can but rarely be applied to ornamental purposes.

Iron is so much stronger a material than stone that it requires, of course, a much smaller substance to attain equal strength; hence, to be consistent, the mullions of cast-iron tracery must be so reduced as to look painfully thin, devoid of shadow, and out of all proportion to the openings in which they are fixed. If, to overcome these objections, the castings are made of the same dimensions as stone, a great inconsistency with respect to the material is incurred; and, what will be a much more powerful argument with most people, treble the cost of the usual material.

Moreover, all castings must be deficient of that play of light and shade consequent on bold relief and deep sinkings, so essential to produce a good effect. . . .

Cast-iron is a deception; it is seldom or never left as iron. It is disguised by paint, either as stone, wood, or marble. This is a mere trick, and the severity of Christian or Pointed Architecture is utterly opposed to all deception.

AUGUSTUS WELBY NORTHMORE PUGIN
AN APOLOGY FOR THE REVIVAL OF CHRISTIAN ARCHITECTURE IN ENGLAND (1843)
(OXFORD: ST. BARNABAS, 1969).

... We must turn to the principles from which all styles have originate. The history of architecture the history of the world: as we inspect the edifices of antiquity, its nations, its dynasties, its religions, are all brought before us. The belief and manners of all people are embodied in the edifices they raise; it was impossible for any of them to have built consistently otherwise than they did: each was the inventor and perfecter of their peculiar style; each style was the type of their Religion, customs, and climate....

Will the architecture of our times, even supposing it solid enough to last, hand down to posterity any certain clue or guide to the system under which it was erected? Surely not; it is not the expression of existing opinions and circumstances, but a confused jumble of styles and symbols borrowed from all nations and periods.

...

Any modern invention which conduces to comfort, cleanliness, or durability, should be adapted by the consistent architect; *to copy a thing merely because it is old, is just as absurd as the imitation of the modern pagans.*¹

In matters purely mechanical, the Christian architect should gladly avail himself of those improvements and increased facilities that are suggested from time to time. The steam engine is a most valuable power for sawing, raising, and cleansing stone ... had the [medieval masons] been acquainted with a greater [mechanical strength than rotating wheels and gears], they would undoubtedly have used it.

The whole history of Pointed Architecture is a series of inventions: time was when the most beautiful productions of antiquity were novelties. *It is only when mechanical invention intrudes on the confines of art, and tends to subvert the principles which it should advance, that it becomes objectionable.* Putty pressing, plaster and iron casting for ornaments . . . are not to be rejected because such methods were unknown to our ancestors, *but on account of their being opposed in their very nature to the true principles of art and design,* by substituting monotonous repetitions for beautiful variety. . . . We possess facilities and materials unknown to our ancestors, and which would have greatly added to the stability of the structures they erected. *We do not want to arrest the course of inventions, but to confine these inventions to their legitimate uses, and to prevent their substitution for nobler arts.*

THOMAS USTICK WALTER

LECTURES ON THE HISTORY AND PHILOSOPHY OF ARCHITECTURE (1841-53)

ED. JHENNIFER A. AMUNDSON, (PHILADELPHIA: ATHENÆUM, 2006).

Lecture I: On Ancient Architecture

It should be remarked that Architecture possesses a twofold character. –As far as it relates to our physical comforts it is simply a useful art; –in this relation it is usually so designated; but in its adornments it is, in an eminent degree, an imaginative art; –in this relation it is called a fine art. As a useful art it employs material forms to throw around us a shelter from the weather, adapted to our physical wants; –as a fine art, it so moulds, embellishes, and disposes those forms, as to produce gracefulness and beauty, exciting in the mind agreeable emotions of taste, and thus affording a source of intellectual enjoyment. Its developments being, generally, of a durable character, it bears a faithful record of ancient times; handing down, from age to age, through the revolutions of a changing world, the spirit of departed generations. This fact is attested by remnants of the past, speaking from every land where man has made his home.

Lecture V: On Modern Architecture

The advancement and diffusion of knowledge in modern times present noble relics of the distant past before us at one view; thus placing Modern Architecture in circumstances widely different from those which have

¹ Pugin's "pagans" are architects who design in Greek and Roman-inspired styles.

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influenced all preceding periods of the art. Ancient nations knew comparatively but little of each other;—they were generally either shut up within their own precincts, or engaged in war.... Ancient architecture will therefore be found to consist of but few principles, although in some instances those few were carried out to the utmost degree of perfection.... A corresponding uniformity of taste arising out of a restriction to but few principles, is apparent, in some degree, in the works of every ancient nation, thus accounting for the peculiar character which distinguishes the Architecture of each.

But in modern times the case is widely different;—the important inventions and improvements in art, and the rapid advancement of civilization which have characterized the few last centuries open to the present age vast avenues to knowledge which were wholly unknown to the ancients.

The invention of printing alone has had a greater influence on architecture than all the revolutions of antiquityThe press, that most powerful engine of civilization, pours forth its volumes daily by thousands, unfolding to the poor as well as the rich of every nation in its own peculiar tongue the wisdom, the genius, the science of all.

The Architecture of the present day has also been influenced in no small degree by the art of engraving.—The architect may now have before him the most perfect representations of the buildings of all ages and all countries; and instead of receiving his impressions from a few scattered monuments as did the ancients, he is enabled to study and compare, the works of every nation.

Modern improvements in the application of steam have had an important influence on art; this mighty agent is no doubt destined to achieve results still more wonderful than anything which has yet been witnessed;—it accelerates the distribution of knowledge, brings distant countries near each other, and is rapidly producing an intercourse between nations which must eventually resolve mankind into one great family....

...

Another idea in connection with modern architecture ... is the popular notion that no invention exists in the present day in architecture,—that every production of modern times is but an imitation of some antique model;—this idea . . . has no foundation in fact; and can only be attributed to a principle of dissatisfaction with things present which has ever characterized the human mind....

If ... we glance at the architecture of the last half century, We shall find a general improvement in the art of building beyond all comparison with any similar period in former ages.—The buildings with which our own cities are adorned present ample testimony on that subject; witness the gracefulness of our steeples and towers,—embellishments never known at all beyond the middle ages, and belonging, in their application to classic architecture exclusively to modern times.—Compare the comforts, and conveniences of the churches of the present day, with those of the houses in which our Fathers worshiped, where heat and ventilation were alike unknown, and where a lady's "foot stove" was as indispensable in Winter as her fan in summer; where half the people sat with their backs to the preacher, and where the height of the pews was so great as to render it difficult for a considerable portion of the congregation to see over them.

...

None of the architecture of the present day can however be said to possess a decidedly distinctive character amongst any people who mingle with the rest of mankind; nor is it probable that any nation will ever again practice a mode of building peculiar to itself, exclusive of other styles.—The arts of printing and engraving, and the rapidity with which knowledge is everywhere diffused will undoubtedly prevent such a result;—these

arts present everything which has been rescued from the shades of antiquity, together with all the most important developments of more modern genius, to the view of every civilized people; and as all ideas in matters of taste are dependent on visible objects for their first existence, it is obvious that these arts will ever exert a resistless influence on design even in the humblest departments of decoration.—We shall have to suppose some intelligent nation to be separated from the rest of mankind, and deprived of all recollections of the styles and modes of building which now exist, before we can imagine a people capable of originating a style entirely independent of the forms and proportions which are now familiar to all the World.

It must therefore be obvious, that in the present state of society it would be wholly impossible for any civilized people to resist the influences of the great mass of architectural ideas with which all are now surrounded, so as to admit of their originating any new mode of building superior to, and at the same time independent of, all existing styles and fashions.

JOHN RUSKIN, *THE SEVEN LAMPS OF ARCHITECTURE* (1851)
NEW YORK: DOVER, 1989

The Lamp of Truth

V. The violations of truth, which dishonour poetry and painting, are thus for the most part confined to the treatment of their subjects. But in architecture another and a less subtle, more contemptible, violation of truth is possible; a direct falsity of assertion respecting the nature of material, or the quantity of labour. And this, in the full sense of the word, wrong; it is as truly deserving of reprobation as any other moral delinquency; it is unworthy alike of architects and of nations...

...

VI. Architectural Deceits are broadly to be considered under three heads:

1. The suggestion of a mode of structure or support, other than true one; as in pendants of late Gothic roofs.
2. The painting of surfaces to represent some other material than that of which they actually consist (as in the marbling of wood), or the deceptive representation of sculptured ornament upon them.
3. The use of cast or machine-made ornaments of any kind.

Now, it may be broadly stated, that architecture will be noble exactly in the degree in which all these false expedients are avoided. Nevertheless, there are certain degrees of them, which, owing to their frequent usage, or to other causes, have so far lost the nature of deceit as to be admissible; as, for instance, gilding, which is in architecture no deceit, because it is therein not understood for gold; while in jewelry it is a deceit, because it is so understood....

...

VII. Structural Deceits. I have limited these to the determined and purposed suggestion of a mode of support other than the true one. The architect is not bound to exhibit structure; nor are we to complain of him for concealing it, any more than we should regret that the outer surfaces of the human frame conceal much of its anatomy; nevertheless, that building will generally be the noblest, which to an intelligent eye discovers the great secrets of its structure, as an animal form does, although from a careless observer they may be concealed....

...

IX. Perhaps the most fruitful source of these kinds of corruption which we have to guard against in recent times, is one which, nevertheless, comes in a "questionable shape," and of which it is not easy to determine the proper laws and limits; I mean the use of iron. The definition of the art of architecture, given in the first Chapter,² is independent of its materials. Nevertheless, that art having been, up to the beginning of the present century, practiced for the most part in clay, stone, or wood, it has resulted that the sense of proportion and the laws of structure have been based, the one altogether, the other in great part, on the necessities consequent on the employment of those materials; and that the entire or principal employment of metallic framework would, therefore, be generally felt as a departure from the first principles of the art. Abstractedly there appears no reason why iron should not be used as well as wood; and the time is probably near when a new system of architectural laws will be developed, adapted entirely to metallic construction. But I believe that the tendency of all present sympathy and association is to limit the idea of architecture to non-metallic work; and that not without reason. For architecture being in its perfection the earliest, as in its elements it is necessarily the first, of arts, will always precede, in any barbarous nation, the possession of the science necessary either for the obtaining or the management of iron. Its first existence and its earliest laws must, therefore, depend upon the use of materials accessible in quantity, and on the surface of the earth; that is to say, clay, wood, or stone: and as I think it cannot but be generally felt that one of the chief dignities of architecture is its historical use, and since the latter is partly dependent on consistency of style, it will be felt right to retain as far as may be, even in periods of more advanced science, the materials and principles of earlier ages.

X. But whether this be granted me or not, the fact is, that every idea respecting size, proportion, decoration, or construction, on which we are at present in the habit of acting or judging, depends on presupposition of such materials: and as I both feel myself unable to escape the influence of these prejudices, and believe that my readers will be equally so, it may be perhaps permitted me to assume that true architecture does not admit iron as a constructive material, and that such works as the cast-iron central spire of Rouen cathedral, or the iron roofs and pillars of our railway stations, and of some of our churches, are not architecture at all. Yet it is evident that metals may, and sometimes must, enter into the construction to a certain extent, as nails in wooden architecture, and therefore, as legitimately, rivets and solderings in stone; neither can we well deny to the Gothic architect the power of supporting statues, pinnacles, or traceries by iron bars; and if we grant this, I do not see how we can help allowing Brunelleschi his iron chain around the dome of Florence, or the builders of Salisbury their elaborate iron binding of the central tower. . . . [W]e must find a rule which may enable us to stop somewhere. This rule is, I think, that metals may be used as a *cement*, but not as a *support*.

XIX. The last form of fallacy which it will be remembered we had to deprecate, was the substitution of cast or machine work for that of the hand, generally expressible as *Operative Deceit*.

There are two reasons, both weighty, against this practice: one, that all cast and machine work is bad, as work; the other, that it is dishonest. Of its badness I shall speak in another place, that being evidently no efficient reason against its use when other cannot be had. Its dishonesty, however, which, to my mind, is of the grossest kind, is, I think, a sufficient reason to determine absolute and unconditional rejection of it.

Ornament, as I have often before observed, has two entirely distinct sources of agreeableness: one, that of the abstract beauty of its forms, which, for the present, we will suppose to be the same whether they come

² "Architecture is the art which so disposes and adorns the edifices raised by man, for whatsoever uses, that the sign of them may contribute to his mental health, power, and pleasure."

from the hand or the machine; the other, the sense of human labor and care spent upon it.... [A]ll our interest in the carved work, our sense of its richness ... of its delicacy ... results from our consciousness of its being the work of poor, clumsy, toilsome man. Its true delightfulness depends on our discerning in it the record of thoughts, and intents, and trials, and heartbreakings—of recoveries and joyfulnesses of success: all this *can* be traced by a practiced eye; but, granting it even obscure, it is presume or understood; and in that is the worth³ of the thing, just as much as the worth of anything else we call precious. The worth of a diamond is simply the understanding of the time it must take to look for it before it is found; and the worth of an ornament is the time it must take before it can be cut. It has an intrinsic value besides, which the diamond has not; (for a diamond has no more real beauty than a piece of glass;) but I do not speak of that at present; I place the two on the same ground; and I suppose that hand-wrought ornament can no more be generally known from machine work, than a diamond can be known from paste; nay, that the latter may deceive, for a moment the mason's, as the other the jeweler's eye; and that it can be detected only by the closest examination. Yet exactly as a woman of feeling would not wear false jewels, so would a builder of honour disdain false ornament. The using of them is just as downright and inexcusable a lie. You use that which pretends to a worth which it has not; which pretends to have cost, and to be, what it did not, and is not; it is an imposition, a vulgarity, an impertinence, and a sin...

This, then, being our general law, and I hold it for a more imperative one than any other I have asserted; and this kind of dishonesty the meanest, as the least necessary⁴; for ornament is an extravagant and inessential thing; and therefore, if fallacious, utterly base...

XX. But I believe no cause to have been more active in the degradation of our national feeling for beauty than the constant use of cast-iron ornaments. The common iron work of the middle ages was as simple as it was effective, composed of leafage cut flat out of sheet iron, and twisted at the workman's will. No ornaments, on the contrary, are so cold, clumsy, and vulgar, so essentially incapable of a fine line or shadow, as those of cast-iron. . . I feel very strongly that there is no hope of the progress of the arts of any nation which indulges in these vulgar and cheap substitutes for real decoration.

EUGÈNE-EMMANUEL VIOLLET-LE-DUC
LECTURES ON ARCHITECTURE (1872)
TRANS. B. BUCKNALL. (NY: DOVER, 1987).

Lecture X

There are in architecture two indispensable modes in which truth must be adhered to. We must be true in respect of the program, and true in respect of the constructive processes. To be true in respect of the program is to fulfill exactly, scrupulously, the conditions imposed by the requirements of the case. To be true in respect of the constructive processes is to employ the materials according to their qualities and properties. What are regarded as questions purely belonging to art, symmetry, and external form are only secondary conditions as compared with those dominant principles.

³ "Worth is, of course, used here in the vulgar economists' sense, 'cost of production,' intrinsic value being distinguished from it in the next sentence.

⁴ Again too much fuss and metaphysics about a perfectly simple matter; inconclusive besides, for the dishonesty of machine work would cease, as soon as it became universally practiced, of which universality there seems every likelihood in these days. . .

In architecture truth is not sufficient to render a work excellent; it is necessary to give to truth a beautiful or at least appropriate form—to know how to render it clear, and to express it felicitously. Indeed, in the arts, although we make use of the most rigorous and logical reasoning, we often continue obscure and unpleasing; we may, in fact, produce what is ugly. But while conceptions based on the soundest reason sometimes produce only repulsive works, true beauty has never been attainable without the concurrence of those invariable laws that are based on reason. To every work that is absolutely beautiful there will be always found to correspond a principle rigorously logical.

It is not enough to have succeeded in conveniently disposing the services of a public building or a private dwelling The materials must be judiciously employed, according to their qualities; there must be no excess on the side of strength or slightness; the materials used must indicate their function by the form we give them; stone must appear as stone, iron as iron, wood as wood.... The various materials we use possess different properties; and if we succeed in expressing these properties by the forms we give to our materials, not only do we thus open a vast field for variety and take advantage of infinite resources, but we likewise interest the public by this constant endeavor to give every object the form that befits its nature.... Not to deceive is the first rule that persons of taste lay down for themselves; how then can we credit with taste artists who in their works heap falsehood on falsehood?

Lecture XII

While wrought iron is very useful in masonry when suitably employed, cast iron may serve numerous purposes. Cast iron notoriously possesses great rigidity; it is extremely durable, for it is less liable to decay than wrought iron; and when exposed to the air, as in supports, and when complicated joints and causes of fracture are avoided, it may be regarded as unassailable by time. But it is evident that, in employing this material, forms of a suitable character should be given to it, and that it would be absurd to simulate in cast iron, for example, columns of a diameter proper to stone supports... Grand results might, nevertheless, be obtained by so employing it, on condition of adopting the equilibrated structure successfully carried out in our country by the medieval architects. In fact, while iron serves scarcely any purpose in monumental masonry such as we now conceive it, which is based on the principle of massive and concrete structure, it would find a rational and useful function in equilibrated masonry, by employing cast iron for rigid supports or wrought iron for ties. With these appliances we might erect vaulting in masonry on very slender supports, a thing hardly ever done.

[Iron] is destined to play a more important part in our ceilings; it should certainly furnish very strong and slender supports, but it should also enable us to adopt vaulting at once novel in plan, light, strong, and elastic, and bold constructions forbidden to the mason ... if we would invent that architecture of our own times that is so loudly called for, we must certainly seek it no longer by mingling all the styles of the past, but by relying on novel principles of structure.

If we propose to use iron conjointly with masonry, we must give up the traditional methods of Roman structure. We have no longer to contemplate erecting buildings based on inert immovable masses, but to provide for elasticity and equilibrium. The distribution of active forces must replace an agglomeration of passive forces. For the attainment of these results, the study of the structure of the French medieval buildings can be of great service, for the architects of that period had already substituted the laws of equilibrium and elasticity for those of Roman structure; but it does not follow that we should imitate the forms they employed—forms that are admirable where masonry only is used but are unmeaning where iron and masonry are simultaneously employed. Had the medieval architects possessed the products of our metal manufactures, they would assuredly, in virtue of their logical and subtle intelligence, have adopted other forms.