PART V: THE ARGUMENT OF DESIGN EXEMPLIFIED: HISTORIES

CHAPTER SEVENTEEN: GREEK ARCHITECTS AND THE SCIENCE OF WASTE

Introduction

Garbett's evaluation of the history of architecture proceeds against the background of his normative ideas and takes up the whole of the second part of the *Treatise*. In this chapter which is specifically concerned with the fifth chapter of the *Treatise*, we shall investigate one or two themes in his analysis of Greek architecture, beginning with his attitude towards Vitruvius. The next chapter is concerned with an evaluation of Gothic architecture and with the projection of Garbett's theories into a prophecy concerning the future.

The obscurity of Vitruvius

Edward Lacy Garbett was not sympathetic to Vitruvius. [1] But that is not saying very much. Vitruvianism has always been characterised by a paradox [2] The health of Vitruvianism as a creed is fed by the obscurity and ambiguity of the text on which it is based. It is the paradox of the bible. There are many levels of meaning, some of which are not intended but extracted. Some interpreters are even able to see nothing, or mere chaos.

Garbett's argument is familiar. Vitruvius like Aristotle, were fine for their times but had become obsolete and retrogressive in the face of nineteenth century *science*. The comparison with Aristotle is interesting in that Vitruvius' domination of architectural theory since the Renaissance was felt to be in every sense as complete and restrictive as Aristotle's domination of philosophical speculation before the Renaissance. Both had outstayed their welcome. As a result some theorists, including Garbett, felt

1. *Treatise*, p. 37 & p. 41.

2. For Vitruvius in nineteenth century architecture Germann (1972) Part 1, "The Gothic in Vitruvianism." & for the concept of Vitruvianism, see Germann (1987).

compelled to cast Vitruvius as the enemy of truth, if only to be able to break away from his insistent hold. Garbett's criticism was particularly derisive when referring to Vitruvius' search for what he called *hidden sympathies* and aesthetic analogies in which Vitruvius revealed his affiliation to a world-view which, with Garbett's newly found certainties, had become a burden. Garbett's main objective in the *Treatise* was to create a scientific setting for his aesthetics of architecture. [3] Vitruvius' ideas concerning proportion, for example, were dismissed as illustrative of the fact that the assumptions upon which Vitruvius constructed his prescriptions, were dismissed as infantile while the various harmonies, correspondences and analogies to which Garbett adhered were based on the immovably solid and mature scientific foundations of the early nineteenth century. This was a time when the unceasing torrent of discoveries encouraged a view that the secrets of the world would soon surrender to the probes of Herschel and others.

Garbett's dismissive treatment of Vitruvius, when seen in relation to the latter's central role in Garbett's definition of good architecture, and therefore in the whole of the normative part of the *Treatise*, is problematic and contradictory. The only way to explain it is to propose that the Vitruvius Garbett dismisses is not the Vitruvius who formulated the conditions for well-building in terms of the trinity firmitas, utilitas and venustas. This point is emphasised by the fact that Garbett quotes Wotton rather than Vitruvius when referring to that trinity. In fact the brilliantly conceived Trinity, whether it was his or not, has often been judged to be not really

3. Vitruvius, Aristotle and their contemporaries, with which, I presume, Garbett meant Pythagoras among others, were accused of reasoning towards *all manner of hidden sympathies between the mind and mathematical ratios, which it perceived without being able to state, which it discovered and yet did not discover*. In: *Treatise*, p. 37.

Vitruvian because of its universality. That is like saying that Newton's laws of gravity are not his because we are all subject to them. The point is that that which is universally accepted has been removed from the domain of Vitruvius precisely because there are other aspects to his theory which are, or which have been, so hotly contested; issues such as the meaning of the six criteria for good architecture, his lack of national unity, his theories of origins, his analogies of the human body etc. It is the Vitruvius directly contradicting Garbett's own theories, whom he rejects. The Vitruvius who thinks differently with regard to issues such as the origin and rational of the Doric order and the authenticity of the timber hut as the paradigm for the Greek temple. [4] This seems rather unfair as Vitruvius does not actually offer the primitive hut as a model, while his theory on the origin of Doric is harmless to Garbett own ideas. In fact, the Vitruvius Garbett dismisses is not the Vitruvius of the *De architectura libri decem*, but the one covered over with layers of Vitruvianism. Maybe Garbett had not even read Vitruvius properly. This would certainly help to explain his accusation against Vitruvius of promoting musical proportions in architecture, which he in fact does not. The idea of an original architecture was similarly not systematised into a corpus of prescriptions until Laugier, Chambers and Milizia. Vitruvius was, ironically like Garbett, very much more impressed with the height of Greek civilisation and its buildings and not so much with its prototypes. Therefore, one has to conclude that Garbett's reaction was not so much directed against Vitruvius himself, but more against the latter's extensive and inventive *nachleben*.

But there is another reason why Garbett needed to reject Vitruvius on the basis of these points of detail. Garbett emphatically did not pose as the inventor of a new knowledge. The idea of invention could have no place in an aesthetic system which held up the Greek and Gothic architects as pure rationalists who based themselves on the necessary interpretation

4. Rykwert (1981) pp. 105. ff.

of the arcane language of nature. Furthermore, the Greeks and the Goths played an important role in the historical justification of Garbett's own principles. Garbett saw himself as an intellectual archaeologist, as the discoverer of an old knowledge, a lost knowledge. It was not his inventive powers, but specifically his perspicuity which led him to improve upon the Greeks and the Goths, by realigning their knowledge along the latest developments of modern science. To do this he had to go to much trouble to discredit Vitruvius as the true source of ancient architectural theory. If Vitruvius was allowed to represent the voice of ancient architecture generally, then that automatically discredited Garbett on a number of points which he felt to be central to his thesis.

To discredit Vitruvius was made easy by a long tradition, starting with Alberti. Most detractors pointed out that Vitruvius' language was confusing and obscure. [5] As a result of this the obscurity of Vitruvius had

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5. F. Granger's rather generalising translation in the Loeb Classical Library, has a detailed introduction partly explaining the difficulties of Vitruvius' language. Vitruvius (1970) On Alberti and Vitruvius see F. Choay, (n.d.) pp. 26-35. But here is Garbett's supplement for Vitruvius, namely Henry Wotton: *Our principall master is Vitruuius (..) who had this FELICITIE, that he wrote when the ROMAN EMPIRE was neere the pitch (..) This I say was his good happe; For in growing and enlarging times, ARTES are commonly drowned in ACTION: But on the other side, it was in truth an UNHAPPINESSE, to expresse himselfe so ill, especially writing (as he did) in a season of the ablest PENNES; and his OBSCURITIE; had this strange fortune; That though he were best practised, and best followed by his owne COUNTRYMEN; yet after the reuiuing and repolishing of good LITERATURE, (which the combustions and*

tumults of the MIDDLE AGE had vnciuillized) he was best, or at least first understood by, strangers. For of the ITALIANS that took him in hand, Those that were GRAMARIANS seeme to have wanted MATHEMATICALL knowledge; and the MATHEMATICIANS perhaps wanted GRAMER: till both were sufficiently conioyned, in LEON-BATTISTA ALBERTI the FLORENTINE, whom I repute the first learned ARCHITECT, beyond the ALPES; But hee studied more indeede to make himselfe an AUTHOR, then to illustrate his MASTER. Therefore among his COMMENTERS, I must (for my priuate conceite) yeild the chiefe praise unto the FRENCH, in PHILANDER; and to the high GERMANS, in GUALTERUS RIUIUS: who besides his notes, hath likewise published the most elaborate TRANSLATION, that I thinke is extant in any VULGAR speech of the world: though not without bewayling, now and then, some defect of ARTIFICIALL tearmes in his OWNE; as I must likewise;

a huge creative impact on the development of architectural theory. The reader was felt to be as responsible as the author for the generation of meaning in the specifically normative parts of *De architectura libri decem*. That is why the various editions of Vitruvius' text are so fully annotated. The influence of Vitruvius resides within the tension between the lack of clarity of his prose and the apparent self-evidence and utility of his divisions and categories. This created a situation where one could be a silent Vitruvian while being a vociferous anti-Vitruvian. Such a self-reflecting mutation was Garbett.

The status of Vitruvius as the father of Western architectural theory obliged every

For if the SAXON, (our MOTHER tongue) did complaine; as iustly (I doubt) in this point may the DAUGHTER: LANGUAGES, for the most part in tearmes of ART and ERUDITION, retayning their originall pouertie, and rather growing rich and abundant, in complementall phrases and such froth. Wotton (1617) Preface.

theorist to formulate an opinion with regard to his theories. All Western architectural theory assembles around- and is perceived to begin with Vitruvius, even though it would perhaps go too far to describe the development of architectural theory as a mere footnote to *De Architectura*.

The division between the pro-Vitruvians and anti-Vitruvians referred more than anything to different ways of bypassing the problem of Vitruvius' obscurity. Acknowledging the danger of over-simplification on could say that the pro's edited Vitruvius and simply by-passed the problems of semantics by reading their own meaning into the ambiguous parts of the text. They supplied the text with meaning where there were only words, proposing corrections based on their own interpretations and added huge commentaries full of *complementall phrases and such froth* in which those interpretations were allowed to become more and more autonomous. [6] With regard to these we may count such famous editions as that of Barbaro, Rivius and many others.

The anti-Vitruvians cover a whole spectrum of shades and qualifications, but their common denominator resides in a rejection of Vitruvius on account of that same ambiguity. They confront the problem of obscurity by consciously setting their own ideas up as reaction against Vitruvius, generating their own theories in contradiction to those of Vitruvius. In other words the difference between the pro's and the cons consists only of a very slight shift in attitude and perspective. Both were equally creative, both generate new meanings and new ideas, but the pro's injected their meaning into Vitruvius while the cons set their meanings up as confrontations.

One of the most interesting comparisons is between Vitruvius and Alberti. [7] The latter is a good example of

6. see previous note

7. Choay, (n.d.) pp. 26-35 and Krautheimer (1963).

someone who dismissed Vitruvius on account of his ambiguity and confusion:

It grieved me that so many great and noble Instructions of Ancient authors should be lost by the injury of Time, so that scarce any but Vitruvius has escaped this general wreck: A Writer indeed of universal knowledge, but so maimed by Age, that in many Places there are great Chasms, and many Things imperfect in others. besides this, his style is absolutely void of all ornaments, and he wrote in such a Manner, that to the Latins he seemed to write Greek, and to the Greeks Latin: But indeed it is plain from the Book itself, that he wrote neither Greek nor Latin, and he might almost as well have never wrote at all, at least with regard to us, since we cannot understand him. [8]

The mix between Greek and Latin languages in Vitruvius is a particular preoccupation. This in itself is telling as it is taken as an instance of confusion rather than as an instance of showing one's colours. Vitruvius was at the time of Alberti not seen as a reactionary, harking back to Greece. Greece had no architectural identity at that time. It was silent, only distantly known to Alberti, Grecian architecture was not *discovered* until much later, and it was not really incorporated into the body of architectural thinking until the eighteenth century. Alberti was specifically concerned with the deteriorating ruins of Rome, Virgil's Rome was the central icon of the renaissance and as a result Vitruvius' sources could not be related to anything more tangible than something lost or misty. Vitruvius confused Alberti, and the latter saw him as linguistically impure. But all that was a trick of perspective. Alberti's *De Re Aedificatoria* generated a whole body of precepts, partly based on a common sense approach, partly based on a Alberti's wide classical learning which included Vitruvius,

8. Alberti (1955) Book VI, Chap. 1, p. 111.On the nationalist implications of this text see Onians (1987) Chapter on Alberti.

as well as a reversion to the stone remnants of Roman civilisation itself. Alberti turned to Rome and its traces in the same way and for similar reasons that Vitruvius had turned to Greece: for the purposes of cultural affiliation and appropriation. It took a long time before it was fully realised how *Greek* Vitruvius was while it took even longer before the full implications of this were worked out.

Later theorists built on Alberti's criticisms, they too saw that Vitruvius' theories on proportion did not match the reality of ruined Rome. Desgodets and Perrault, were of course responsible for the demythologising of Vitruvius with regard to this problem, re-categorising the beauty of proportion as a beauty of custom, an arbitrary thing. But with Greece only just emerging from the mists, Vitruvius was still misunderstood. He was still seen as the voice of Rome and therefore as rather stupid.

Nevertheless, the thinking exhibited by most anti-Vitruvians characterises itself not only by its few antagonisms and differences, but just as much by a wealth of deeper resemblances, showing that their thinking is just as dependent for on the theories of Vitruvius as that of the pro-Vitruvians. Much of Vitruvius was adopted freely, one may almost say anonymously, in this respect. Everything that was uncontroversial in Vitruvius, such as his brilliant definitions of architecture, became nameless in their ubiquitous acceptance. That part became the foundation of architectural theory in general, wove itself into the fabric of every treatise. The political division with regard to Vitruvius between pro's and con's was therefore confined to details.

During the Greek renaissance which had gained momentum by 1750, the reading of Vitruvius concentrated on different aspects. It dawned on William Wilkins for example, that it was significant that Vitruvius based his theories on Greek sources and referred mostly to Greek building practices. This had been realised before, but the implications had not seeped through. Instead of the reactionary

who had to be digested with heavy commentaries and corrections, he became the only vehicle left for us to approach the architectural theory of Greece. Instead of a reactionary he was now seen as a historicist in the most respectable sense. I think I am right in saying that this trend was to some extent led by the architect of the National Gallery, William Wilkins, but I am not at all sure of it:

The first editors of Vitruvius, Accustomed to the contemplation of the remains of Roman architecture, and wholly ignorant of the existence of any early specimens of Grecian taste, have searched for Illustrations of their author amongst the edifices of Rome; expecting, with some appearance of probability, that the principles he promulgates would be found to prevail in the buildings of the country which gave him birth. Engaged in this task, they seem to have disregarded his uniform assertions, that, upon the architectural monuments of Greece, or rather the writings descriptive of them, the basis of his work was formed. Had these assurances availed, instead of adopting in their editions variations from the text of the manuscripts, which the discrepancy between the principles upon which the edifices of Rome were constructed, and those detailed by Vitruvius, seemed to authorise, they would have sought for that coincidence in the remains of Grecian architecture which was not to be discovered amongst the vestiges of the art in Italy.

When it is remembered that Vitruvius is the only ancient writer upon the science of architecture whose works have reached our times, an inquiry into the authority for admitting the various readings and interpolations may not be thought uninteresting: because, if that authority should be deemed insufficient, and it be made to appear that the reading of the manuscripts is compatible with his avowed practice of seeking amongst the edifices of Greece for the principles he disseminates, the ancient readings may, in many instances, be restored, and the text in some degree purified from the corruptions with

which the early editors have loaded it. Former translators, in following the text of the printed editions, have propagated these errors, which, in many instances, are wholly subversive of the principles of architecture our author intended to inculcate. [9]

The usefulness and the relevance of Vitruvius could simply be transplanted from Rome to Athens when Athens supplanted Rome as the cultural model of Europe. When Rome had been the great example to European culture, and Vitruvius was its voice, the discrepancies between the quod significatur and the quod significat mounted up, and as a consequence Vitruvius was found to be confusing and needed to be exposed. A task which was reluctantly done by Alberti and later Perrault whose interpretations immediately led to highly creative new theories of beauty in architecture. But when Rome became the symbol of decline and decadence, during the time of Gibbon, a trend so valiantly fought by Piranesi, attention focused on Athens as the new architectural, cultural and indeed moral Jerusalem, Vitruvius was given the opportunity to redeem himself, to become the voice of Grecian architecture. But even this was an unhappy relationship. It was realised all too soon that far from being the father of architectural theory he was merely the stepfather. The result was that he started speaking much more clearly in some respects, but tantalisingly little in other respects. As the voice of Greece he now begged far more questions than he could answer.

Within the first half of the nineteenth century it is Peter Legh whose interpretation of Vitruvius is one of the most creative and interesting. Legh was an admirer, certainly, but only in so far as Vitruvius supplied a link to the Greeks whose opinions he had compiled. He was thankful of the effort but conscious of its shortfall. Vitruvius had confused the Greeks. Legh's answer was to

9. Vitruvius (1812) The quoted text comes from the advertisement.

reconstruct that theory by supplementing it with a syncretic eclecticism as defined by Diderot. [10] His ambition was to collect all the best theories and arrive at a final grand synthesis of original truth. As a result found it quite legitimate to start with Vitruvius' second chapter and to infuse his own interpretations of the six fundamental principles of architecture loosely based on the meanings of the Greek words Vitruvius uses. These words he argued had been badly translated from the Greek into Latin and Vitruvius had in fact not understood them which was shown by the fact that *he was not in the habit of making use of them himself*. *We find, that none except symmetria can be traced in any other part of his work.*[11] This argument implied that they did have a specific meaning, which was lost:

I have been led to Imagine, I have discovered an explanation of the six terms used in the 2nd chapter of Vitruvius. [12]

And Legh goes on to write an occasionally highly imaginative interpretation of those six words which deserves attention although it lies beyond the scope of this book.

The opportunity presented by Wilkins and exploited by Legh was not taken up by Garbett. Why? Garbett's admiration of the Greek architects knew no bounds, it was equalled only by his admiration for the Gothicists. He believed the Greeks to have possessed that science which brought their art to a level of perfection, which, during the whole of history was only reached twice, once by them and once in the thirteenth century. It is therefore significant that the insight by Wilkins was passed over or even ignored. Vitruvius, Wilkins rightly argues, mentioned his sources in the

10.Collins (1965) p. 17. and pp. 117-127.

11.Legh (1831) p. 31.

12.Legh (1831) p. 30.

preface of Book 7. [13] And most of those were Greek. Why was this ignored by Garbett? Why was Vitruvius not allowed to be the voice of Grecian architecture? It could of course be that Garbett simply had not read the book. Apart from the fact that that is quite likely, it is the explanation of a spoilsport. If he had not read the book, a highly respected book at the time, he simply had not done his homework properly. There is another explanation.

The answer is simple. Garbett's position with regard to Vitruvius is similar in many respects to that of Peter Legh, but instead of being an imaginative pro-Vitruvian he is a creative anti-Vitruvian, a small step for mankind. Garbett wanted to supplant the myths provided by Vitruvius on origins with a scientific explanation which would bypass the accretions of history to first and essential principles. That, in intentions at least was similar to Laugier. Garbett, however, could not accept Vitruvius as the true authority on Grecian architecture as that would have contradicted his own highly creative *scientific* solutions with regard to, for instance, the Doric genesis. For all the resemblances between his thinking and that of Vitruvius, those points on which they disagreed, such as the problem of proportions, the primitive hut theory as embellished and applied by Laugier and Milizia; the design and origin of columns etc. were all central to Garbett's fresh analysis of Greek architecture and the idea that Grecian architecture had erupted from a complete and self-consistent rational.

Vitruvius was simply not allowed to be the true voice of Greece, for that would have made Garbett's analysis necessarily wrong. Garbett was and had to be the only *true* interpreter of Greek motives and methods. At the same time the Vitruvian basis of his doctrine must be plain to anyone. It is the corner stone of his definition of architecture and because of that, of all his principles of design. And many of those are no more than new explanations of old ideas. The fact that

13.Vitruvius (1970) Vol. 2, p. 62-79.

Garbett quotes Wotton's opening sentence to *The Elements of Architecture* to introduce his organic definition of architecture rather than the original text by Vitruvius, may be due to Wotton's undoubted way with words. In fact Wotton here represents Vitruvius' alter ego, his supplement. Wotton was allowed to represent the acceptable Vitruvius, and disguise Garbett's Vitruvian heritage so that the other Vitruvius could be used as a foil of progress. [14]

Greek architects

Above and beyond the function of history as a way to justify and confirm the normative aspects of his discourse, Garbett's analysis of history was a critique on previous scholarship. With regard to Greek architecture he specifically developed a number of themes introduced by the refined and picturesque interpretation of John B. Papworth's "Essay on the Principles of Design in architecture." [15] In that essay a number of ideas were casually presented which Garbett quite clearly set out to systematise.

It would be impossible to discuss Garbett's evaluation of Papworth without

14.The sentence is: *Well building hath three conditions: Commodity, Firmeness, and Delight,* Wotton (1624) p. 1. In the Preface he writes that his *Principall Master is Vitruvius.* cf. *Treatise*, p. 1.

15.In a note at the beginning of Garbett's chapter on the *application of the Foregoing Principles to trabeated or beamed building by the Grecian architects*, he acknowledges his debt to John B. Papworth: *In the excellent Essay on Grecian Architecture, prefixed to his edition of Sir W. Chambers, to which I owe much assistance in this inquiry.* In: *Treatise*, p. 139. The essay served as an introduction to the fourth edition of William Chamber's *On the Decorative Part of Civil Architecture.. to which are added copious notes, and An Essay on the Principles of Design in architecture by John B. Papworth*, J. Taylor, London 1826.

reference to the structural approach to style discussed in the previous chapters. This hypothesis, to recapitulate, had decomposed the problem of architectural style into a fan-like selection of factors with at its centre that of structure. Structure combined both the idea of spatial organisation in terms of convenience, and construction. This hypothesis, anticipated by Robison, Ware and Bartholomew had its most fluent statement in Garbett's *Treatise*. Having discussed and set up his principles in the first part of the *Treatise*, Garbett now wanted to test them or rather *exemplify* them *in the works of the Greek and Gothic architects.* The process of exemplification should be judged on its intention, which was to serve as proof that Garbett's principles pre-existed their contemporary formulation and that he was really doing nothing more or less than *rediscovering* the mind of the Greeks.

Papworth's *Essay*, which relies on a strictly formal interpretation of style, engages little more than the visual surfaces of architecture. As such the approach may be called picturesque in the sense that it relies completely on visual rather than structural sophistication to explain the motivations of Greek architects; everything is interpreted according to light and shadow, tint and colour. Form and material are related to a cultural causality informed by geography, climate and the social and racial circumstances of the Greek, but not to a single *structural* principle. Papworth marvels at the mathematical and sculptural refinement of the Greeks without wanting to explain them beyond the invocation of a certain cultural refinement and its consequent visual sophistication. His careful descriptions of these Greek refinements without an explanatory principle which would have got in Garbett's way, were therefore pre-eminently useful in supplementing Garbett's exegesis. He developed Papworth's themes and integrated them with his own explanatory principle of rational structuralism.

Waste, durability and the quality of repose in Greek temples

The cause of the feeling of power, eternity and repose in Greek temples is, according to Garbett, the unadulterated application of the principle of contrast. This principle is here based on a similar, but far more casual treatment of it in Papworth's *Essay*.[16] Garbett, as we have seen earlier, made the concept of contrast systematic to his interpretation of architecture generally, whereas Papworth uses the word the concept of contrast only in passing and only in a Payne-Knightian picturesque sense, that is to say the abstraction of meaning into a disinterested aesthetic of formal play. [17] Nevertheless this conceptual proximity allowed Garbett to rely on much of Papworth for the explanation of the visual sophistication of the Greek Temple. This will become clear a little further down when dealing with flutings.

Another contributing factor to the success of Greek architecture is the merciless and consistent subordination of the different classes of form, where the gravest class is always reserved for the principal elements. This principle led to a *unity of general design.*[18] Again there is a conceptual overlap when Papworth explains Greek architecture in terms of *a unity of design* aptly symbolised by the roof which, by covering the whole in one firm act of geometry, unifies the separate elements of the cella and the peristyle, deliberately creating a single whole. [19] This principle is gladly adopted by Garbett. Even so, the same phrase used for different approaches to the same architecture at once shows up the nature of Garbett's relationship to Papworth. Garbett wants to go much further by attempting a structural explanation of the *grand repose* of Greek temples:

16.Papworth (1826) p. xxiii.

17.cf. Hussey (1967).

18. *Treatise*, p. 137.

19.Papworth (1826) p. xvi. cf. *Treatise*, p. 140-41.

Though the first style of construction was the most unscientific and wasteful both of material and of space, yet it did produce the most durable buildings, and also the most grand and noble effects. [20]

In spite of appearances there is no contradiction or conflict in this statement with regard to Garbett's program of establishing a science of architecture exemplified by the works of Greek architects. The first *style of construction*, the depressile, an idea forwarded to Garbett by Bartholomew, is the most durable precisely *because* it is the most wasteful in its use of materials. In fact this style of construction needs waste.

Greek architecture, as perceived by both Garbett and Bartholomew stands in a particular place within the development of the science of architecture as a whole, and can, in relation to our greater knowledge, be excused on that point. The waste was made necessary by the lack of science: the more efficient arch had not yet been discovered nor could the strength of materials be accurately predicted. An element of insurance had to be brought in with regard to the action of gravity.

But this is a negative explanation, while Garbett is forwarding the Greek's lack of knowledge as having had a positive and beneficial effect on architecture. Its character of *grand repose* is due to the fact that Greek temples avoid all oblique pressures: each stone is independent of the one beside it. [21] All the pressures are vertical, there is no side thrusting, no action. [22] Repose is the combined effect of a structural principle relying on a single direction of thrust as well as the concomitant excess of mass needed to build lastingly according to that principle. Massiveness, if subject to the correct subordination of the five classes of form procures a sense of repose. Greek

20. *Treatise*, p. 136.

21. *Specifications*, Chapter XLIV: "Of the Principle of Simple Repose in the Construction of Building." esp. § 390

22. *Treatise*, p. 132-33 & 136-137. This quality was also pointed out by Bartholomew, *Specifications,* § 390.

architecture acquires its grand and noble effects, therefore, precisely because of its lack of knowledge and its resultant need of surplus mass and strength.

The history of architecture in terms of waste

There is a fundamental paradox in Garbett's thinking when one extends that reasoning to mean that the increase of science in architecture must necessarily have led to buildings becoming less durable, less reposeful and less grand and noble. That implication had already been noticed by Bartholomew:

It is a melancholy reflection, writes Bartholomew, *that in this age, in proportion as the scientific knowledge of architectural construction advances, as the chemical properties and the duration of materials become better known, the actual practical building of this country, rich by nature and political position, retrogrades sadly both in goodness and wisdom.*[23]

The use of materials is closely dependent on cultural value-systems. The connection between matter and value is also what is so telling about the judgement on Greek architecture and the relation between durability and waste.

As far as contemporary historians were concerned there had always been a consumer-architecture. That is, an architecture which was used and disposed of when it was no longer useful. The amount and nature of the materials used in building had always in some way been made proportionate to the degree of permanence desired for any particular (type of) building. Commercial architecture had never been built to last an eternity. It was the same for the domestic architecture for all but the most powerful in a society. Their social and political position obliged them to play upon the psychology of power, exuding permanence and stability whereby their palaces and strongholds immediately acquired a public and therefore symbolic function. Thomas Hope makes this explicit in his description of the origins of architecture, where only a population's faith needed to be housed in

23. *Specifications*, § 313.

temples aspiring to permanence. [24] To have built normal dwelling houses to a similar degree of permanence would in itself have constituted a waste amounting almost to blasphemy. When domestic architecture at some periods in history did achieve a disproportionate permanence, that imbalance expressed itself in the fact that the dwelling became indistinguishable from the place of burial. [25] Implying that the living were on a course of self-apotheosis.

It is only faith which demands permanence, it is the dead who go on forever. That is the reason that Bartholomew and Garbett, like Ruskin deplored modern practices with regard to the application of stucco:

External stucco, writes Bartholomew, *may be proper for the garniture of an old house, too old to be worth a more substantial restoration: it may be proper, for a short-lived country pleasure-house, which caprice may in a few years render unestimable: external stucco, may be very fit for the investure of a theatre, which may be speedily consumed...but external stucco, smeared over a cathedral, or other valuable national heirloom, is profanation.*[26]

Faith, and this was a feeling which was at the time being confirmed by historical projections, had to be protected by a sense of eternity and age. The outrage of contemporary critics, especially the Ecclesiologists concerning the cheapness of modern churches; Pugin's despair about his own flimsy religious structures, become all the more understandable within this context.

As far as Garbett was concerned this had everything to do with the rise of *the many*. All building-types, not just temples and churches, not just palaces and tombs, but all buildings were being asked to answer to the demands of *Architecture*

24.Hope (1835) pp. 4-5 & p. 13.

25.Hope (1835), pp. 4-5.

26. *Specifications*, § 303. Bartholomew continues by quoting J.I. Hittorf on the same subject, referring to a pamphlet by Hittorf published in 1838 on the restoration of the apex of the obelisk of Luxor. He also quotes Ezekiel Chap. XIII verse 10 which is in fact quoted at the beginning of the book: *and when one buildeth up a wall, behold they daub it with untempered mortar: say unto them which daub it with untempered mortar, that it shall fall...*

with a capital A. There was nothing wrong in that aspect of progress per sé, in fact it was the specific aim of his program to raise the collective standard of architecture, to provide for the mediocre rather than to attempt to teach genius. But the side-effect which Garbett and his contemporaries deplored was that the demand calling for an architecture for the millions, had started to corrode the ideals which had been attached exclusively to those building-types which had a functional, that is symbolic need to exude stability and permanence. The upward march of *the many*, their insistent claim to architecture; the upward march of commercial buildings into the realms of architecture necessarily compromised those buildings which traditionally fulfilled that symbolic function for a society: Churches, monuments and public buildings were being drawn into a consumerism previously reserved for domestic and commercial buildings. That was traumatic.