New Europe College
GE-NEC Program
2000-2001
2001-2002

DANA JENEI
MĂDĂLINA NICOLAESCU
IOANA TUDORA
ANA MARIA ZAHARIADE

MIHAELA CRITICOS
ANDREEA MIHALACHE
GHEORGHE ALEXANDRU NICULESCU
IOANA TEODORESCU

Editor: Irina Vainovski-Mihai

ANA MARIA ZAHARIADE

Born in 1949, in Bucharest

Ph.D., "Ion Mincu" University of Architecture and Urban Planning, Bucharest
(1990)
Dissertation: *Opportunities for low rise - high density housing in Bucharest*
Professor, "Ion Mincu" University of Architecture and Urban Planning
Head of the Chair of Theory & History of Architecture and Heritage
Conservation, "Ion Mincu" University of Architecture and Urban Planning

Awarded the Romanian Union of Architects Prize (1998)
Herder Prize (2003)
Lectured in Paris, Liege, Prague, Brno, Hamburg, Hanover, Vienna
Theoretical researches on Romanian and East European Modernism in
Romania and abroad
Participation in various architectural congresses and seminars in France,
Switzerland, Israel, Austria, United Kingdom, Italy
Numerous articles on architecture published in Romania and abroad, author of
exhibition catalogues
Organizer and co-organizer of exhibitions both in Romania and abroad

TRIBUTE TO VITRUVIUS

Je demande à une idée ce qu'a été le prix
de la pensée, de penser cette idée.[1]

INTRODUCTION

I set out to deal in this paper with the aesthetic category of the beautiful as reflected in the theory of architecture (whatever the theory of architecture may mean) – a huge and highly problematic subject, and as such an almost irresponsible choice. However, there are two arguments in my favor. The first comes from an old article in the *Secolul XX* magazine, which argues that if Romanians don't make universal issues their concern, Romanian culture will never trespass narrow national frontiers or become solid enough and interesting to others [to foreign cultures].[2] If one reflects, with this in mind, on Romanian architectural culture, one tends to conclude that it is still in a larval stage, represented, at its best, by a collection of essays, and that it has scarcely resorted to the primary sources of world architectural culture. Being seriously involved in the theory of architecture, itself a discipline in crisis, this seemed to me an acceptable reason to approach – by going to the sources – a topic whose avoidance does not demonstrate its obsolescence, but its over-problematic nature. This does not mean that I am going to overcome the provincial barriers encircling the Romanian architectural milieu. Most probably I will not, but it is worth trying, at least in order to whet the appetite of my students. The second argument comes from Umberto Eco. According to him, when choosing the subject of a one-year study, it is possible to make your choice in such a way that the final dissertation is transformed in "the starting point of an ampler research, meant to last for years on, supposing that you have the opportunity and the appetite for this endeavor".[3] The grant I received via the New Europe College has afforded me the opportunity of taking into account both points of view. It provided the necessary means (the cultural ambiance and the material

resources) to take the first step in the investigation of the sources of European architectural culture.

This year I studied in particular the French architectural treatises of the 16th century up to the end of the 19th century, and the Italian treatises of the Renaissance. Over time I discovered two aspects that I consider important for the future development of this work.

The first is that to follow the destiny of the beautiful only is not sufficiently relevant from my architectural perspective. It became clear to me that, at least in relation to architectural theory, it is more meaningful to pursue the aesthetic perspective as a whole, rather than study the category of the beautiful in isolation.[4] Adorno put it convincingly in referring to aesthetics in general:

> The definition of aesthetics as the theory of the beautiful is so unfruitful because the formal character of the concept of beauty is inadequate to the full content [Inhalt] of the aesthetics. If aesthetics were nothing but a systematic catalogue of whatever is called beautiful, it would give no idea of the life that transpires in the concept of beauty. In terms of the intention of aesthetic reflection, the concept of beauty draws attention to something essential to art, without, however, articulating it directly.[5]

For architectural theory this is even more important and this statement relates to my second aspect.

While perusing the old treatises, an amazing thing came to the forefront: although in the treatises there are special areas reserved for architectural beauty (often the most expanded ones), the way it is dealt with is so obviously partial that the conclusions are far from satisfactory. Many architectural features are avoided without explanation, though they are quite obvious. In a way, there was, and still is, a sort of discrepancy between the aesthetic perspective in theory and the way aesthetic intentions are dealt with in the architectural design. Despite this, critical work on this matter is rare. As Roger Scruton, one of the few contemporary theorists concerned with the aesthetics of architecture, put it, "For the most part, it is almost impossible for someone without a specialized education to express in words the beauties of architecture; if terms like 'proportion', 'harmony', 'space', 'atmosphere' spring to mind, it is not as a rule because any clear general idea is associated with them."[6] I should add that this is difficult even for architects, for the same reason. Oddly enough, today, when theoretical debate in the arts has transferred its

interest to "visual culture", possibly as "a way of liberating discussion of art and of opening it up to society and culture",[7] architectural issues are avoided, despite the fact that it is architecture that, at a first glance, frames the development of visual culture[8] and is one of the main producers of daily images. There seems to be a systematic misunderstanding of aesthetic issues in architecture (from both inside and outside the profession), akin in many respects to a form of blindness.

This reminded me of a possibly similar phenomenon, identified by Arthur Koestler in a nonconformist book on cosmology.[9] He was interested in the process that makes the creative man blind to realities that, once discerned by a visionary mind, become commonplace. This strange cecity occurs not only in the minds of the "ignorant and superstitious" masses – to use Galileo's expression – but is more obvious and paradoxical in the case of Galileo himself, and other geniuses such as Aristotle, Ptolemy and Kepler. According to Galileo, it is the mythical force and the comfortable fixity of Plato's and Aristotle's cosmological conceptions that are to a large extent responsible for the long-lasting blindness in this field.[10] This idea sent me back to Vitruvius.

VITRUVIUS

Tout n'est pas dit sur l'architecture[11]

The writings on Vitruvius are certainly more numerous than on any other architect, an honor that Vitruvius himself would never have dreamt of. However, biographical details are scarce, and "we know almost as much about Vitruvius as we know about Shakespeare".[12] Should Pliny the Elder never have made mention of it, his name would not have been safeguarded either, since the author does not mention it in his treatise.[13] Similarly, his *prenomen* and *cognomen* (Pollio) are uncertain too.

According to recent studies, the socio-professional structure to which Vitruvius Pollio belonged – an *ordo* (status group) of *apparitores* and *scribae* – represented the technical and bureaucratic middle bourgeoisie of the municipalities in central and septentrional Italy, and was characterized by competence and morality: ambitious people, thoroughly educated and brought up with a profound respect for traditional values.[14] This *ordo* represented the main reservoir of clerks for the administration and magistracy in the period at the end of Republican Rome. Under Caesar,

Vitruvius belonged to the *decuria* of *scribae armamentarii*. He served in the water supply services (*cura aquarum*) and, for his *studium* (zeal and devotion), he was granted a *favor* (imperial benevolence), a pension, when he retired from active life. This endowment allowed him to crown his experience with *De architectura*, probably written between 30 and 28 B.C.[15] *De architectura*, a *munus* for Augustus, allowed the virtuous civil servant, once comfortably retired, a way to volunteer his services:

> I have furnished a detailed treatise (conscripsi praescriptiones terminatas) so that, by reference to it, you [Caesar] might inform yourself about the works already complete or about to be entered upon. In the following books I have expounded a complete system of architecture (omnes disciplinae rationes).[16]

This was the main significance of the Vitruvian project: a self-imposed duty to bring order to the theoretical and practical knowledge accumulated over centuries of building activity, whose loss was felt as imminent. This state of mind, related to the crisis of republican values, characterized overall Roman intellectual activity for two generations and gave birth to various reviews and systematizations of the precepts in philosophy, civil law, jurisprudence, agricultural techniques, grammar etc., under the sign of a normative unity. Alongside Cicero, Varro, and others, Vitruvius contributed to this cultural effort. On the other hand, *De architectura,* much like Horace's *Ars poetica*, continues the direction of the numerous isagogic texts in prose or in verse throughout Antiquity, aiming at the practical finality of a handbook.[17] Starting with this,

> the main goal of the normative aspects of his discourse, which endeavors to organize [...] for the first time, in a complete and rigorous *corpus* all the knowledge of the profession, is to define the art of building and to promote a correct practice. Obviously, the result of this ambition is to freeze in unique formulae a sort of orthodoxy of plans, forms and decors, which cannot accommodate the extraordinary vitality that characterizes the innovative forces in the architecture of that period.[18]

As G.M. Cantacuzino put it, from the perspective of the architectural practice of the Hellenistic Rome, Vitruvius' work, being mainly retrospective, is born already obsolete.[19]

Nor is the Vitruvian project indisputable in what concerns its general theoretical pretension. Françoise Choay demonstrates masterly why *De*

architectura's interest is primarily "archaeological" (various kinds of archaeologies, among which the archaeology of thinking), and why the treatise cannot be compared to a real conceptual construction of the act of building, as the Albertian oeuvre would be, fifteen centuries later.[20] Moreover, as will be shown later, for Vitruvius, architecture does not include city-making, although there are many references in the text to urban design.

Nonetheless, if we accept that the theory of architecture "comprises any written system of architecture, whether comprehensive or partial, that is based on aesthetic categories",[21] then, notwithstanding the undeniable limitations of the treatise, *De Architectura* cannot be denied the prestige of being the first writing in European architectural theory we have.

From the perspective of this research (the aesthetic perspective in architectural theory), the Vitruvian project is doubly important.

Firstly, *De architectura* is the only significant architectural treatise that has survived from Antiquity.[22] Vitruvius, having no philosophical pretences, collects and processes from an architectural point of view the ideas that were probably the most representative of the ancient – Greek and early Hellenistic - aesthetic mentality. Hence, he is the source of authority in what concerns the genesis of the aesthetic perspective in architectural theory. If he had distorted certain ideas (though we have the control of other contemporary sources), this is of little importance since this study is not concerned with highlighting the aesthetic conceptions in Antiquity; it only aims to locate the starting point of the ideas concerning beauty in architecture, ideas that will be followed and consistently developed later in the theory of architecture.

Secondly, fifteen centuries later, *De architectura* was resuscitated, read and interpreted with avidity.[23] Alongside Cicero, Horace, Aristotle, Plato and Euclid, Vitruvius becomes part of the "classical bookshelf" of the Renaissance humanists and architects. Alina Payne has demonstrated how the Vitruvian text offers comforting bridges with the theoretical bodies of other arts and enters a play of intertextuality as an expression of "harmony between key texts of classical culture".[24] Moreover, "as the only text on architecture, its language – translated, mediated, polysemous – circumscribed all architectural thought and controlled it".[25] *De architectura* will be used as both a key to understanding the architecture of Antiquity, and as a supreme argument of theoretical authority. As Françoise Choay has put it, the treatise was to acquire over time an

unprecedented paradigmatic value: "by means of a metonymic process, the book that could offer the key to a long ago vanished practice becomes the key to the contemporary practice".[26]

From that moment on, no architectural treatise can really be "free of Vitruvius". Its rhythmical resuscitation will stop only with the denial of history brought on by the Modern Movement, and, even then, not entirely. That is why no critical presentation of architectural theory can be wholly argued without recourse to Vitruvius. In particular, the aesthetic ideas encompassed by or based on the Vitruvian treatise will influence very strongly the subsequent theory of architecture. Thus, re-reading *De architectura* is never fruitless.

DE ARCHITECTURA LIBRI DECEM

What he [Vitruvius] *handed down was in any case not refined, and his speech such that the Latin might think that he wanted to appear a Greek, while the Greeks would think that he babbled Latin. However, his very text is evidence that he wrote neither Latin nor Greek, so that as far as we are concerned he might just as well not have written at all, rather than write something that we cannot understand.[27]*

De Architectura libri decem has a clearly encyclopedic character and it can be supposed that it expresses the aesthetic mentality and the practical experience of Roman builders at the end of the Republic; the architectural panorama it presents is thus so broad that it can hardly be exhausted. By means of a more systematic approach we can detect several degrees of generalization: (i) general theoretical questions, principles, concepts; (ii) prescriptive and normative questions; (iii) strictly technical matters. These are developed in terms of the following themes: (1) architecture, its legitimization and constitutive principles; (2) the architect, his knowledge and skills; (3) categories and concepts concerning architectural beauty, which constitute, at the same time, both design rules and methods and criteria of appreciation; (4) practical and technical knowledge concerning architectural design and building activity (building types, various types of interior spaces, building materials and methods). They all form what Vitruvius calls *ratiocinatio* (theory), which *sets forth and explains things wrought in accordance with technical skill and methods (quae res fabricatas sollertiae ac rationis proportione demonstrare*

atque explicare potest).[28] The first three could be seen as the area of concepts, a more or less "philosophical" view of architecture, from the outside; while the last group comes from the opposite direction, from inside the *fabrica,* which is *continued and familiar practice (usus meditatio), carried out by hands using such material as is necessary for the purpose of a design (cuiuscum generis opus).*[29] It should be noticed that, in the Vitruvian text, *fabrica* is the first to be mentioned in the constitution of the knowledge of the architect.

The difficulty arises from the fact that in the treatise things are neither entirely unambiguous nor fully organized. Regarding technical matters, the systematic intention is clearer. Here, Vitruvius is in control, his experience of building sites affords him certainty. Things are totally different with the matters that have a more abstract character, such as the so-called *attributes* (in the French tradition) of architecture – *firmitas, utilitas* and *venustas* – or the concepts that Vitruvius named *components* of architecture – *ordinatio, dispositio, eurythmia, symmetria, decor, distributio*, followed by *proportio, intercolumnum, species, statio,* etc. These concepts, that later bred the theory of architecture, some of which remained crucial concepts for a long period, are mentioned in the treatise in an apparently erratic and thus confusing manner. The discourse is not consistently structured from general ideas to their particularization, and, as a result, the ideas often appear in unexpected places, sometimes like sparkling intuitions that are abandoned, to be later taken up again and detailed under other titles. Whether they are the author's own intuitions or are picked up from earlier less historically fortunate writings is of little importance, since Vitruvius is a legendary figure.

Still, *De architectura* is a reality that, on first reading, appears to be a puzzling collection of issues of various degrees of generality and covering many semantic fields, of matters belonging to various areas, whose coherence does not seem to go beyond the simplest addition. It seems that all he had found out he collected indiscriminately. There is much evidence to corroborate this hypothesis: there is no obvious logic to the succession of the books, there is a lack of consistency between the prefaces and the books, definitions are confusing, buildings are confused with military devices and gnomonics, theoretical continuity is disturbed by means of anecdotal details, the writing is often obscure, etc.[30] Add the fact that Vitruvius' Latin is not of the best literary quality, being excessively contracted and thus the cause of much confusion,[31] and Alberti's appreciation in the motto might be thought to be true.

163

However, Alberti must not be taken *à la légère*: his irony expresses the condescension and irritation of the humanist educated at the exclusive University in Bologna towards a "modest technician" trained on military building sites, who gave him trouble with his books. Later he infers and suggests that Vitruvius must not be read in a contemporary key, but otherwise. This is what this study will attempt to achieve.

THE VITRUVIAN ORDER

The most obscure aspect of the treatise is its structure, though Vitruvius actually claims that his work is systematically organized. The problem lies in finding out whether *De architectura* is based on a reasonable conceptual structure, whether there is a rationale behind its arrangement that is able to enhance the meaning of the concepts and ideas it gave birth to. To this end, three areas will be investigated closely: (1) the succession of the ten books; (2) the coherence of the first book; and (3) the relationship of each book with its preface.

1.

Vitruvius divides his treatise into ten books. He does not give them titles, but endows them with prefaces. The logic of their succession, if any, would represent the first level of coherence of the treatise.

The hypothesis of the loss of some books, or of the ulterior confusion of book numbering will be excluded from the outset: the ten prefaces confirm the number and the order of the books.[32] The possible loss of the titles will also be excluded as they can be corroborated by the large amount of untitled manuscripts dating from the Middle Ages and the early Renaissance.[33]

Instead of titles we use the content of each book as summarized by Vitruvius himself in the prefaces:

Book I [*General*]: *on the services of architecture (officio architecturae), the definitions of the craft (terminationibusque artis), and about ramparts and the allotments of sites within the ramparts[34]*.

Book II [*Building material and the means to use them*]: ... *I will preface somewhat respecting the methods of building (aedificiorum rationibus), whence they took their beginnings (initia) and how inventions grew (eorum inventiones)[35] and the employment of materials in building (operibus*

utilitates) and with the excellences (virtutibus) which they naturally possess.[36]

Book III [*Ionic order*]: …*the arrangement of temples (aedium sacrarum dispositionibus), their different kinds (earum generum varietate), how many styles of design there are, and the details which belong to them severally (quasque & quod habeant species earumque quae sunt in singulis generibus distributiones). Of the three orders, I taught, in reference to the Ionic order, those rules which, by the use of proportion, furnish the most exact adjustment of the modules (ex tribus generibus quae subtilisimas haberent proportionibus modulorum quantitates ionici generis moribus, docui).[37]*

Book IV [*Corinthian and Doric order*]: ... *of the Doric and Corinthian orders generally (Doricis Corintiisque institutis), their distinctions and properties (discrimen & proprietates).[38]*

Book V: [*Municipal edifices*]: … *the arrangement (dispositiones) of public places (publicorum locorum).[39]*

Book VI: [*Private buildings*]: *the calculations (ratiocinationes) involved in private buildings and the adjustment of their proportions (commensus symmetriarum).[40]*

Book VII [*On surfaces and floors*]: *how they [buildings] are finished (de expolitionibus) in such a way (quibus rationibus) as to combine durability (firmitatem) with elegance (venustatem).[41]*

Book VIII [*On water*]: …*about the discovery of water, the qualities of its special sources, the methods of water supply and of testing water before using it.[42]* (VIII,Pref.,13)

Book IX: [*On dialing*]: *the methods of dialing* and their mathematical logic.[43]

Book X: [*On machines*]: ...*what the principles of machinery are, and the rules which guide them (quae sint principia machinarum, ordinata praeceptis explicare).[44]*

At this juncture, some aspects may be highlighted:

(1) The "parasitizing" of the structure of the treatise by apparently non-architectural aspects (hydraulics, gnomonics, war machines), is a false problem, since in Vitruvius's time knowledge concerning these fields was part of the diffuse competences of the ancient architect, as is clearly stated in Book I: *The parts (partes) of architecture are three: Building (aedificatio), Dialling (gnomonice), and Mechanics (machinatio).[45]* This specific knowledge is imparted at the end of the treatise in Books VIII-X

and does not interfere with the other books. Otherwise, Vitruvius is very explicit as to this discrimination between the books. Among the few indications he makes as to the way he conceived the organization of his treatise, in the Preface to the Book VIII, he refers to Books I-VII as a distinct body that presents the theories and reasons of building, (*rationes aedificiorum,* translated into English *methods of building*)[46].

Consequently, Books VIII-X can be excluded from this study. What remains is a presentation – consistent as information – of the art of building (*aedificatio*) that is the part of architecture that has made up the profession since the Renaissance.

(2) However, Vitruvius proposes another discrimination within the theory of building, which suggests a possible hierarchy. In the preface to Book II, Vitruvius refers to the *proportions and symmetries of sacred buildings,* of *public buildings and of private buildings*, as if they were the obvious final goal of the treatise, a goal that he is forced to postpone until Book III.[47] The reason for this postponement will be discussed later; for the moment, the only fact that matters is that in this way, Books III-VI form another distinct group inside the first body. In group III-VI, Books III and IV constitute, in their turn, a close unit (another group), where *I will speak of the temples of Gods (deorum inmortalium aedibus sacris) and will set them out in detail in a proper manner (perscriptas exponam).*[48] It is obvious that the manner in which Vitruvius joins the topics together is subordinated to the underlying principles of the building types. Given this logic and by means of the way he emphasizes them and their order in the succession of books, the suggested hierarchy is: sacred buildings, public buildings, and private buildings. We may conclude that the only logic of the treatise is that of an elementary pragmatism: firstly, of the types of activities included in the sphere of architecture, then, within the activity of building (*aedificatio*), of the building types.[49]

(3) If we accept that this logic is the only one that determines the structure of the treatise, we must accept that Books I, II and VI are excluded from this reasoning. This perhaps because Book I, being the introductory book, may be given a privileged position; but there is no obvious explanation for the exclusion of books II and IV. Although the hypothesis is not impossible, we must remember that Vitruvius, when deferring the important topic of detailing the sacred buildings to Book III, leaves the reader to infer that some particular reason had forced him to interrupt the succession of a simple and obvious logic. In this respect, a more attentive examination of Book I may be of help.

2.

Book I acts as the only one where the author explicitly announces the presence of certain general concepts. This is, therefore, the site where we are more likely to find the key to Vitruvius' systematization.

The book is divided into chapters, yet their number varies according to the different manuscripts and editions. As far as we know, only the division into books can be attributed to Vitruvius; the splitting into chapters is the work of the copyists. According to Granger, it was Fra Giocondo, the first editor of Vitruvius (after Sulpitius), who supplied the titles of the chapters.[50] Other editors and translators proposed different names and divisions of the chapters, but the differences are not very important in this case. Nor is the paternity of the titles. However, the chapters will be taken into consideration, since this is the printed form of the treatise, the form that spread all over the world and molded architectural thinking.

The content of the book and the different chapter structures are given for the Romanian edition (that in this respect followed Choisy's edition where the chapters are numbered 1-12), the Latin edition Laet/Wotton[51] (chapters numbered 1'-6'), and the English translation, the Loeb edition (chapters numbered 1''-6''), as follows:

1. *Despre educaţia arhitecţilor (On the training of architects)*;

1'. *Quid sit Architectura, & de Architectis instituendis* ;

1''. *On the training of architects.*

> Architecture consists in practice (*fabrica*) and theory[52] (*ratiocinatio*), which comprise together the architect's knowledge.
>
> The architect has to master both parts of this knowledge, and to be gifted and eager to learn.
>
> His educational requirements are listed.

2. *Din ce anume lucruri se compune arhitectura (On the things that compose architecture)*;

2'. *Ex quibus rebus Architectura constat* ;

2''. *Of what things architecture consists.*

> The six concepts: *ordinatio, dispositio, eurythmia, symmetria, decor, distributio.*[53]
>
> Only the first three are defined, not very explicitly. The author continues the explanations in other books, especially in what concerns *eurythmia*.

167

3. *Despre edificiile sacre (On sacred buildings)*

> Definition of *symmetria* through examples. The concept is substantially summarized in Books III and IV.

> Definition of *decor,* with examples.

4. *Despre părțile lucrărilor, băi și ferestrele lor (On the parts of the works, baths and windows)*;

On doors and windows in baths and elsewhere.

> Other examples of *decor.*

5. *Despre particularitățile locurilor și ale materialelor (On the specificity of places and materials)*;

On the qualities of sites and supplies for the works.

> Definition of *distributio* with examples.

6. *Despre părțile arhitecturii (On the parts of architecture)*;

3'. *De partibus Architecturae in privatorum & publicorum aedificiorum distributionibus, & gnomonicem & machinationis*;

3''. *On the parts of architecture.*

> The parts of architecture: Building (*aedificatio*), Dialling (*gnomonice*), Mechanics (*machinatio*).

> Building is divided in two parts: public buildings and private buildings.

> The role assigned to public buildings is threefold: defense, religion and convenience (public utility).[54]

> They all have to take into account and observe strength (*firmitas*), utility (*utilitas*) and grace (*venustas*), which are defined in their turn.

7. *Despre constituția animalelor și salubritatea locurilor (On the constitution of animals and the hygiene of sites)*;

4'. *De electione locorum salubrium, & qua obsint salubritati, & unde lumina capiatur*;

4''. *On the sanitation of sites.*

> Conditions of hygiene for the sites where cities are to be built, and the reasoning.

8. *Despre cercetarea ficaților animalelor pentru a cunoaște calitatea aerului (On inspecting the livers of animals to test the quality of the air).*

> Traditional practices to detect the hygiene of a site and the reasoning.

ANA MARIA ZAHARIADE

9. *Despre municipii (On cities).*

> The precedent as reason for a hygienic place for a city.

10. *Despre temeliile zidurilor și așezarea turnurilor (On the foundations of walls and the placing of towers);*

5'. *De fundamentis murorum & turrium.*

> Planning conditions of the chosen area, the reasoning, the fortification of the city and the acts they require: foundations of defense walls, gates, towers, walls.

11. *Despre repartiția lucrărilor care sînt în interiorul zidurilor orașelor și despre orientare, pentru ca vînturile vătămătoare să fie îndepărtate (On the distribution of the works inside the walls and on orientation, in order to eliminate the effect of harmful winds);*

6'. *De divisione operum, quae intramuros sunt, & eorum dispositione ut ventorum noxii flatus vitentur.*

> The planning of the city inside the walls (streets and squares) and the conditions required (especially considering the winds): customary practices of planning and the reasoning.

12. *Despre alegerea locurilor pentru uzul comun al populației (On the choice of the sites for common use).*

> The "zoning" of the city and the correct location of various urban spaces: fora, sacred buildings, other public places, housing areas; as the tradition and experience has confirmed them.

Some aspects are worth mentioning here as follows:

(1) Clearly, Vitruvius wants to announce and assert in this first book the most general matters regarding architecture. However, it does not contain the main concepts that define the structure of the text, excepting the concept of *architecture* that, along with the definition of the architect, opens the book.

(2) There is no substantial coherence between the titles of the chapters and their content in any of the editions consulted (though in the Laet/ Wotton edition the division is simpler).

(3) With regard to the succession of chapters, at least one fracture is noticeable in the primary logic of things (in the Romanian/Choisy edition there are many), i.e., between matters belonging to a general theory of architecture and the practical issues concerning city building (and other types of building works in the Romanian/Choisy edition).

(4) The text covers topics with different degrees of generality, whose collection in one book does not reflect any clear rationale.

It is evident that Vitruvius is not a speculative writer. However, he is far from simple-minded. Although definitions are not complete, examples are within his reach with the help of which he can explain matters, a method that he often employs successfully to this end. It is for this reason that I think that Vitruvian logic should not be underestimated and that we must search for it in less obvious places. Otherwise, as will be shown later, Vitruvius insists on his having reasons for the arrangement of the books[55]. In case of Book I, what is most disturbing is the division into chapters, and especially the titles given to the chapters. If we leave aside the division into chapters, and read the text fluidly, we can understand him in a different light, as in the following:

1. On the architect and of what his general knowledge consists. (cf. 1/1′/1″).
2. On what the architect must know and use in his design, specifically, *ordinatio, dispositio, eurythmia, symmetria, decor, distributio*. The six terms are defined in turn and explained through examples in the clear sense of their use in a project in order to obtain a certain effect. (cf. 2-5/2′/2″).
3. On the types of activities that are incumbent upon the architect, among which only building is detailed by means of building types. All have in common the fact that they must observe the conditions of *firmitas, utilitas, venustas*, whose definitions follow immediately. (cf. 6/3′/3″). All things brought into discussion until this moment concern only the design of an architectural object. There is not the least allusion to the city.
4. On the detailing of the customary operations and practices preceding the construction of an architectural object that is to be taken into account in order to ensure optimal environmental conditions for the architectural object. Most of them are somewhat traditional "planning" practices. They are described following a logic from the exterior to the interior, from the surrounding nature to the city: the choice of a hygienic site, fortifications as interface between the city and nature, the *intra muros* planning, the requirements concerning the positioning of various building types within the city. (cf. 7-11/4′-6′/4″)

Read this way, Book I acquires coherence. It unveils its role of general announcement of theory and background to the activities whose finality is *aedificatio*. Only the mixture of technical details and conceptual matters of a more abstract character remains confused and confusing. In this respect the following comments become useful:

(1) Put in contemporary terms, the content of this book may represent an introduction to a theory of architectural design (referring exclusively to the architectural object) with a normative, operational and instrumental character. It was impossible for Vitruvius to formulate it in this manner. The Vitruvian conception belongs to the ancient tradition, in which the fine arts were seen more as craftsmanship, as factual technique, than as mental project. Thus, the distinction between design and material achievement is missing. This distinction was not perceived, conceptualized or valued as such (within or outside the profession), although in practice and on the building sites, there was certainly a difference between the *architékton* (master-mason)[56], master of *ratiocinatio*, and *fabri/téktones* (common workers/builders) and *demiourgoi* (craftsmen), whose competence was *fabrica*. In effect, until the Renaissance, art was valued as dexterity, as the skill of production according to certain rules. From around Aristotle's time or even that of the sophists, it was thought that whoever practices an art must be endowed with inborn capacities (*natura*), knowledge (*doctrina*) and experience (*usus*).[57] Vitruvius was concerned with the systematization of the doctrine/body of reasons/considerations referring to architecture (*ratiocinatio*), yet not before granting priority to practical experience (*fabrica*). In this context, in the absence of the distinction between designing and making mentioned above, his systematization could only be perceived as more confusing than it really was since he mixed elements that are today separated into distinct fields of human activity.

There is nonetheless some care to distinguish between these fields that, by virtue of the ancients' understanding of *ars/techné,* Vitruvius does not emphasize sufficiently. It is encompassed inside the concept of *compositio*, a notion whose career in architectural theory was to be very durable.[58] The concept is not defined as such. However, as far as Vitruvius uses it in the treatise, it means the design process, the elaboration of the work.

(2) It is also clear that Vitruvius realized the differences between the design/making of an architectural object, on the one hand, and the

171

territorial planning and urban design/making, on the other; however, this question overwhelms his conceptual capacities. His theory is concerned exclusively with the architectural object (its design and making), that is *aedificatio* (Building). At the same time he infers the superior level of generality occupied by planning (territorial and urban), as well as the fact that the success of architectural objects depends to a large extent on the planning decisions that precede its building. Consequently, issues of this nature (whether conceptual or pragmatic) are determined by "prerequisites" of the design/making of the architectural object, which is by no means a theoretical blunder. It is a clever conceptual simplification. With the same logic, Vitruvius assigns these matters to *natura,* something difficult to understand from our point of view. His reasons are, however, transparent: this way, they can be motivated, regulated, administrated by means of the tradition, through the rule of the precedent, of the decantation of previous experience. Thus, they come at least partially under *decor* and *distribution*, which endows them, once more, with the right to a place in the economy of this first book.

(3) The general concepts (including those that refer to aesthetic value) constitute, in their turn, another category of "prerequisites". This time they are prerequisites of all design activity (*aedificatio*, ship making, dialing, war machine making) that belongs to the realm of architecture in antiquity. Hence, Vitruvius assigns this category a higher position, a superior level of generality, than he does to the planning matters that refer only to the design/making of buildings (*aedificatio*).[59]

With these matters settled, we can re-read the first book: Architecture, knowledge of multiple disciplines and of erudition (*scientia pluribus disciplinis & variis eruditionibus ornata*) is born (*nascitur*) of experience/ practice (*fabrica*) *and* theory/doctrine (*ratiocinatione*). The architect, a man endowed with a certain cleverness/inventiveness (*ingeniosum*) and self-discipline (*ad disciplinam docilem*), must be thoroughly educated in both specific theory and in many other fields, and must also have practical experience. To be able to design/make architecture, he must know how to apply/use/maneuver the six constituents of architecture: *ordinatio, dispositio, eurythmia, symmetria, decor, distributio.* With their help he can create any object that enters the sphere of architecture. *Aedificatio* (suggested to be the most important part of architecture) is concerned with several types of buildings. Each building has to observe the conditions of *firmitas, utilitas* and *venustas.* At the same time, for the building design/

making, the architect needs to comply with another series of conditions belonging to *natura* (nature: territory and climate). They form the foundation, on the basis of tradition and experience, of certain planning decisions. The success of the building depends on both series of conditions (or prerequisites). This is a summary of the *rules of the art*, and the internal rationale of the Book I.

Some conclusions can now be drawn:

(1) The present form of Book I is the result of two overlapping logic schemes. The first, in the background, is the logic of the discourse that presents coherently a theory of building design. The other, governing the chapters, is that of the modest practical matters: it follows a strictly pragmatic logic, and highlights the specific operations of design/making of a building (sacred buildings, doors, windows, rooms), and of the preparatory action (planning practices) in building design. As these operations appear accidentally in the continuity of the discourse, this second logic plays the role of an index of practical issues; it is less rigorous than the first, it presents itself differently, depending on the interpretation of the copyist/translator/editor, but, by being expressed by titles, it is brought to the foreground. Therefore, it hides the logic of the discourse to the point of disorientation.

In all probability, the second logic scheme has been imposed on the original text. However, it is not irrelevant to the author's original aim in so far as in the preface to Book V Vitruvius allows us to infer the key to this ambiguous systematization in intentional layers: after some lamentation as to the difficulties of writing on architecture and dealing *with topics unfamiliar and obscure to many* (*inusitatas & obscuras multis res*),[60] he decides *to write in short compass* in order to ease the reading. The organization of the treatise aims to effect such an order:

> I fixed their arrangement so that the inquirer (reader) has not to collect them one by one, but that from one corpus and in the several books they might get the explanations of the several subjects (generum).[61]

From this perspective, the copyists, translators and editors of the treatise only extended the author's pragmatically oriented will, by means of the chapter headings.

(2) If the logic of the discourse is mainly that of the design, then we could extend it to the other books. They are meant to detail the issue of building design, in the order settled by the first book: *aedificatio*(I-VII) with sacred (III-IV), public (V), and private (VI-VII) building types, followed by the other parts with a more "engineering-like" character(VIII-X), which are not of particular interest to this study.

(3) The same logic introduces a sort of discrimination among the general principles of building design, some of them being preferentially correlated to certain building types. For instance *symmetria* is closely linked to the sacred buildings, which results from the chapter I, 3, as well as from Books III and IV, where the concept is detailed and enriched. Likewise, Books III and IV –generally regarded as dedicated to the orders of columns – appear more coherent if read from the perspective of the design of sacred buildings/temples, to which the orders of columns were originally related. Within the design of temples, the orders of columns represent the only specific and meaningful difference; otherwise their compositional rules (*symmetria*) are similar.

(4) Although not so obvious, this logic explains the positioning of Book III within the economy of the treatise. The theory (the reasoning) of building design, *ratiocinatio*, is rooted in *fabrica*, the first to be mentioned in the treatise while enumerating the architect's knowledge. *Fabrica* is the processing of the matter, which, in turn, belongs to *natura*. It means that the "prerequisites" of building design cannot be complete outside this issue. Not only is building design meaningless without knowledge of the materials and their elementary implementation, but, more importantly perhaps, the materials are themselves part of *natura,* and, in this hypostasis, they anchor architecture in the lineage of original gestures. Thus, they acquire an originating function. Vitruvius's rationale is quite simple: firstly, architecture and building design are defined by means of what the architect must know, then they are rooted in *natura*, through *fabrica*. Once more, Vitruvius insists on the fact that he has not been careless in assigning a certain position to this book:

> 8. But if anybody raises objections about the arrangement of the whole work, because he thinks that this book should have come first, let him not think I have erred, if I believe in Reason. When I wrote this comprehensive treatise on architecture (corpus architecturae), I thought in the first book to

set forth with what trainings and disciplines architecture was equipped, and to determine by definitions its species (terminationibus eius species) and to say from what things it sprang. And so I there pronounced what there ought to be in an architect. Therefore in the first book I discussed the office of the architect (de artis officio). In this book [Book II] I will treat the material things of nature, and what uses they have. For this book does not declare whence architecture arises (nascatur), but whence the kinds of building have originated (origines aedificiorum sunt institutae), and by what ways (quibus rationibus) they have been fostered and, by degrees, advanced to their present finish (hanc finitionem). 9. So therefore the arrangement of this book is in its order and place.[62]

Although paradoxical, this book, supposed to be the most technical account (the author himself presents it as such in the preface II,P.,5, cf. supra.), is actually the main attempt to ground architecture philosophically on the basis of the remotest tradition:

I will follow the approaches of antiquity to Nature herself (rerum naturae), and in particular of those writers who have committed to their manuals the beginnings of the humanities (initia humanitatis), and the record of inventions (inventiones perquisitas). Therefore I will set forth the matter as I have been instructed by them (quemadmodum ab his sum institutus).[63]

The paradox arises only from the fact that the summary of the book (in the preface) belongs to the logic of the pragmatic approach (the index logic), while the content of the book is inscribed in the discursive logic of building design theory. Therefore, Book II finds its place and acquires a double meaning: on the one hand, due to the demonstration of the origins of the building (II, 1 and 2), it represents the mythical moment of architecture; while on the other hand, by means of the technical information contained in chapters 3-10, it completes the prerequisites of building design/making and their implicit theory, which are both dependent on *fabrica*.[64] This is the only book where Vitruvius feels compelled to make use of erudite philosophical knowledge, of physics and natural sciences etc., something which does not spare him from a certain ridicule.[65]

3.
This philosophical moment of the treatise introduces the third direction to be investigated in this study: the relationship of the text to the prefaces.

Here, the first discouraging aspect is the apparently minimal connection of each book to its preface. The only obvious link is to be found in the final paragraphs, where Vitruvius summarizes the content of the previous books and announces the main topic of the one to come. As for the rest, excepting the preface to Book I, which contains a dedication to Augustus and states the aim of the treatise, the prefaces can be considered short moralizing "essays" that refer to the function of the treatise and its opportunity, to the architect and to his status. Hence, they are more connected to the whole of the treatise than to the given book they were nominally intended to introduce. They are in the form of first person narratives. Thus, the direct implication of the author's architectural and human experience is clearly present along with his erudition and morals, his natural disposition and frustrations. They present a certain continuity of their own and thus constitute a kind of independent narrative that looks at the treatise through different eyes, in a more philosophical manner, and speaks with another voice which addresses Caesar humanly, and, through him, all readers.

In all probability, the prefaces were written later than the books, on the occasion of their editing; therefore their incongruity can be explained to a certain extent.[66] It is possible that the division of the text into books took place concomitantly, and this may also be true of the initial division into chapters (even without the titles). The real cause is of little importance. Rather what matters is that the prefaces confer on the treatise a special literary character. From this perspective, the treatise can be seen as an explanatory discourse transformed in a narrative in order to be less boring to the reader:

For thus the mind will be able to receive them more conveniently.[67]

To this end, the author intervenes intermittently in the first person, transforming the objective discourse into a narrative: he participates in a direct manner, with his opinions, advice, and, more importantly, meaningful anecdotal contributions.[68] Anecdotes - short moralizing stories and legends – are also inserted in the discourse of the books; their function there is either to legitimate various practices or to reinforce certain assertions, or simply to play a mnemonic role. It can be argued that this narrative insertion in the prefaces and the anecdotal moments within the architectural discourse introduces a third layer of systematization in the treatise, that belongs exclusively to the logic of the narrative. This layer

is worthy of separate investigation and thus will not be dealt with in this study. Suffice it to say that its presence in the treatise, though disturbing at first sight, has an important functional role and introduces another logical layer to the already complicated and ambiguous Vitruvian systematization.

The systematization of Vitruvius' treatise is not that of a philosophical approach to architecture. Although the author makes heroic attempts to make use of his erudition, he remains an architect and an architect only. There are no general, abstract concepts that structure his treatise. Rather, it is the necessities of architectural design/making, which subordinate the forms. The order of the treatise results from the overlapping of three logical layers, all of which are pragmatically oriented. The first follows the rationale of an operational theory of building design/making and determines the continuity of the discourse throughout the treatise. The second has a strong instrumental character. It functions as an index of the pragmatic issues (various types of building works). It controls the division into books, and later into chapters. Used by generations of copyists/translators/editors, it was emphasized excessively, driving to despair generations of readers and exegetes. The third, the literary layer, has a specific functional character. It relies on the technique of the narrative and functions intermittently, interrupting the first two layers, though totally independent of them: it legitimizes and reinforces them, offers them accessibility. Of the three layers of logic, the third is the least innocent. It possesses a hidden militant character in respect of the implicit aim of the treatise, the condition/status of the architect.

In conclusion, the three systematizing formulae function concomitantly throughout the treatise, with no tuning related to the content brought into focus, which leads to confusion. For instance, as has been already shown, in Book I – the book of principles - where the conceptual content is of a larger degree of generality and abstraction, the pragmatic logic of the index is highly parasitic and disturbing. The more specialized and technical the content becomes and the more the general principles fade, the easier the tuning of the systematization and of the issues presented. Hence, the observation that only the technical parts of the treatise are systematically presented,[69] though indisputable in its evidence, is not actually true. However, in general, the systematization of the pragmatic matters is more readily accessible than are the abstract, conceptual issues.

This re-reading is not intended to overestimate the Vitruvian systematization (Vitruvian in the sense that it is not the work of the copyists,

as De l'Orme suggests).[70] It is complicated and heavy, it breeds confusion, and probably overwhelms its author, at least some of the time. None of the three logical schemes is really suited for theorizing architecture as a form of aesthetically intended mental creativity, as we understand it today. From this point of view, the result can appear quite disappointing. But this is not what Vitruvius must have set out to achieve.

What is more interesting from our point of view is that, since Vitruvius does possess a certain logic of the discourse and as things are not collected randomly in the treatise, the concepts he carved out for the future theory of architecture gain in strength. Moreover, the way he introduces the concepts in the treatise (context, moment, order) may give them additional meaning: the order of their emergence may reflect a hierarchy, and their use in certain contexts may enrich them.

PARTIAL CONCLUSIONS

> *Sed tamen his voluminibus editis, ut spero, etiam posteris ero notus.*[71]

This re-reading is carried out from the unilateral perspective of the logic of the Vitruvian writing. In order to investigate the place the Vitruvian legacy comes to occupy in architectural thinking in general and in its aesthetics in particular, we require a more complete image of the treatise. Therefore, a second re-reading is necessary, this time from the perspective of the concepts that Vitruvius created for posterity. This paper is of insufficient length to allow for this new re-reading. Nonetheless, at this point, it is permitted to give some hints concerning the influence of *De architectura* on future architectural thinking.

From a strictly theoretical point of view, Vitruvius' treatise is a very far-reaching writing: it refers only to the building design/making, and its focus is normative and pragmatic. Yet, from its limited perspective, it has an undeniable inner coherence, even if it is not very obvious. However, it was not understood in this way, though this was probably the real intention of the author. Generally, its understanding and interpretation oscillated between two extremes, which biased the message of its author.

On the one hand, there is the reading in the sense of a limited pragmatism. Most important in this sense is the strictly practical information on how to design or build various types of buildings and their

constituent parts. This aim was so important that the rest of the treatise, and its coherence, mattered no longer. The division into chapters and their titles is irrefutable proof thereof. Nonetheless, the treatise is more than a source of practical information.

On the other hand, Vitruvius was read under the sign of an ideality that is similarly improper to his treatise. As has been pointed out, the impact of the debate between philosophers, philologists and architects on the character of an already erudite architecture, quoting Plato, places the Vitruvian studies on the same level as the platonic studies, and "transforms the relative value of the Vitruvian text – as witness – in an absolute value".[72] For the moment, we can spotlight two aspects of this paradigmatic value that the Vitruvian treatise acquires.

It is undisputable that Vitruvius created an architectural language/ terminology, probably without precedent. This linguistic task was part of a general endeavor to adapt Latin to abstract thinking, partly through giving normal, concrete words more sophisticated abstract meanings, partly through Latinizing Greek words used in philosophy, rhetoric, etc. The abstract terminology that Vitruvius used in his treatise to characterize architecture acquires the same paradigmatic value. The explanation, clarification, and enrichment of the six concepts become the theoretical core of architectural aesthetics and, through it, of architectural theory in general. On the other hand, the three conditions to which Vitruvius subjects the architectural object, *firmitas, utilitas, soliditas,* undergo a more spectacular development. They become structuring rules of architectural discourse, treated separately, and thus breaking the internal unity of the object as well as that of architectural thinking.

The extent to which *De architectura* was responsible for this and what part was played by a biased reading of the treatise are questions still to be answered. At any rate, the ingenious mind of Alberti, the true genitor of both the theory of architecture as an autonomous creative activity, and of the modern architect, points to the limits of the Vitruvian treatise and to its obsolescence. However, posterity had it another way: the prestige of the antiquity turned out to be stronger than Albertian intuition. We still pay tribute to Vitruvius.

NOTES

1 STEINER, George, SPIRE, Antoine, quoting Kierkegaard in *Barbarie de l'ignorance,* Editions L'Aube, 2000, p. 56.

2 PLEŞU, Andrei, *Rigorile ideii naţionale şi legimitatea universalului,* in *Secolul XX* 240-41-42/1981.

3 ECO, Umberto, *Cum se face o teză de licenţă,* Pontica, 2000, p. 14; (original Italian edition: *Come si fa una tesi di laurea,* Bompiani, 1997).

4 In what concerns this larger aesthetic perspective, I adopted Eco's approach in *Arta şi frumosul în estetica medievală*, accepting as aesthetic any discourse (with a certain systematic attempt, and using certain philosophic concepts) on phenomena regarding beauty and other connected aesthetic categories, the art of architecture, the creation and the appreciation of aesthetic value in architecture, taste, its judgement and the critique of its judgement. See ECO, Umberto, *Arta şi frumosul în estetica medievală*, Meridiane, 1999, pp.6-7 (original italian edition: *Arte e bellezza nell'estetica medievale,* Bompiani editore, 1997).

5 ADORNO, Theodor, *Aesthetic Theory*, Gretel Adorno & Rolf Tiedermann, Editors, in Theory and History of Literature, Volume 88, UNIVERSITY OF MINNESOTA PRESS, Minneapolis, 1997.

6 SCRUTON, Roger, *The Aesthetics of Architecture*, Princeton University Press, 1979, p. 18.

7 DACOSTA KAUFMANN, Thomas, "Visual Culture Questionnaire", in *OCTOBER*, 77/1996, p. 48.

8 LANVIN, Silvia, "Visual Culture Questionnaire", in *OCTOBER*, 77/1996, pp. 50-51.

9 KOESTLER, Arthur, *Lunaticii. Evoluţia concepţiei despre univers de la Pitagora la Newton*, Humanitas, 1995; (original English edition: *The Sleepwalkers,* 1959).

10 KOESTLER, *op.cit.* pp. 12-15 sqq.

11 From LAUGIER, Marc-Antoine, *Essais et Observations sur l'architecture*, Pierre Mardaga éditeur, 1979, introduction by Geert Bekaert, p. III.

12 KRUFT, Hanno-Walter, *A History of Architectural Theory from Vitruvius to the Present*, Princeton Architectural Press, 1994, p. 22; also GRANGER, Frank, *Introduction,* p. xiii, in VITRUVIUS, *On Architecture*, translated by Frank Granger, Loeb Classical Library, Harvard University Press, Cambridge, Massachusetts, London, England, 1998.

13 GRANGER, Frank, *Introduction,* p. xxv, in VITRUVIUS, *op. cit.*

14 GROS, Pierre, *Les architectes grecs, hellénistiques et romains* in CALLEBAT, Louis, *Histoire de l'architecte*, Flammarion, Paris, 1998, p. 34 sqq.

15 COSTA, Traian, *Vitruviu, omul şi opera,* in VITRUVIU, *Despre arhitectură,* translated by G.M. Cantacuzino, Traian Costa, Grigore Ionescu, Ed. Academiei RPR, 1964, pp. 10-11.

16 VITRUVIUS, *On Architecture, ed. cit.*, I, P., 3, pp. 4-5.
17 COSTA, Traian, *op. cit.,* p. 9.
18 GROS, P, o*p. cit.,* p. 36.
19 CANTACUZINO, George Matei, *Introducere în opera lui Vitruviu*, Ed. Meridiane, 198, p. 40. See also RYKWERT, J., in ALBERTI, L.B., *On the Art of Building,* MIT Press, 1997, p. IX.
20 CHOAY, Françoise, *La règle et le modèle,* Editions du Seuil, Flammarion, 1980.
21 KRUFT, Hanno-Walter, *op. cit.,* p.15
22 Later writings, as the compendium of Cetius Faventius *De divertis fabricis architectonicae*, or *De re rustica* of Palladius (Rutilius Taurus Aemilianus) are simple compilations of Vitruvius. Cf. KRUFT, H-W, o*p. cit.*, p. 30.
23 On Vitruvius during the Middle Age, see Kruft, H-W, *op.cit.*, pp. 30-40; ECO, Umberto, *Arta și frumosul în estetica medievală*, Meridiane, 1999.
24 PAYNE, Alina A., *The Architectural Treatise in the Italian Renaissance,* Cambridge University Press, 1999, pp. 52-53.
25 Idem.
26 CHOAY, Françoise, *op. cit,* p. 222.
27 Cf. ALBERTI, L.B., *De Re Aedificatoria,* [*On the Art of Building in Ten Books*], translated by Joseph Rykwert, Neil Leach, and Robert Tavernor, Cambridge, Massachusetts; London, England, The MIT Press, 1996, VI, 1, p. 154.
28 VITRUVIUS, *ed. cit.,* I.1.1, pp. 6-7.
29 Idem.
30 The confusing aspect of the treatise has been noticed by many authors of treatises and translators: see for example ALBERTI, or Phillibert DE L'ORME.
31 COSTA, T., *op. cit.*
32 COSTA, T., *op. cit.*
33 Regarding the frequent use of the treatise at the beginning of the Renaissance, see KRUFT, *op. cit.* p. 39.
34 VITRUVIUS, *ed. cit.,* II, P, 5, pp. 4-5.
35 VITRUVIUS, *ed. cit.,* II, P, 5, pp. 4-5.
36 VITRUVIUS, *ed. cit.,* III, P., 4, pp. 156-157.
37 VITRUVIUS, *ed. cit.,* IV, P, 2, pp. 200-201.
38 VITRUVIUS, *ed. cit.,* IV, P, 2, pp. 200-201.
39 VITRUVIUS, *ed. cit.,* V, P, 5, pp. 254-255.
40 VITRUVIUS, *ed. cit.,* VI, P, 7, vol.2; pp. 8-9.
41 VITRUVIUS, *ed. cit.,* VII, P, 18, vol.2; pp.78-79.
42 VITRUVIUS, *ed. cit.,* VIII, P., 4, vol.2; pp.136-137.
43 VITRUVIUS, *ed. cit.,* IX, P, 18, vol.2; pp. 210-211.
44 VITRUVIUS, *ed. cit.,* X, P, 4; pp. 272-273.
45 VITRUVIUS, *ed. cit.,* I, 3, 1, pp. 32-33.
46 VITRUVIUS, *ed. cit.* VIII, P, 4, vol. 2, pp. 136-137.
47 VITRUVIUS, *ed. cit.,* II, P, 5, pp.76-77: "*Now since in the first book I have written on the services of architecture, and the definitions of the craft, also*

about ramparts and the allotments of sites within the ramparts, there should follow the arranging of temples and public buildings and also private ones, in order to explain of what proportions and symmetries they ought to be. Yet I thought I ought to put nothing before, until I had first considered the supplies of building material, from the assemblage of which buildings are completed..."

48   VITRUVIUS, *ed. cit.* III, P, 4, pp. 156-157.

49   See also, PAYNE, Alina, *op. cit.*

50   GRANGER,F., *Introduction,* pp.xxi-xxv, in Vitruvius, *ed. cit.*

51   VITRVVIIS Pollioniis *De architectura Libri Decem. Cum notis, castigationibus & observationibus Gulielmi Filandri integris; Danielis Barbari excerptis, & Clavdii Salmasii passim insertis. Praemituntur Elementa architecturae collecta ab illustri Viro Henrico Wottono Esquite Anglo...,* Ioanne de Laet, Antwerp, 1649.

52   Granger translates *ratiocinatio* with *technology*, which does not translate the real meaning; we will translate it with *theory*.

53   Granger's translations are: *Order, Arrangement, Proportion, Symmetry, Decor and Distribution.* In particular, *Order* for *ordinatio* and *Proportion* for *eurythmia* introduce confusion in the understanding of Vitruvius's text. We will therefore use the Latin expressions.

54   The Latin word is *opportunitatis,* translated in different ways, although, as results from the rest of the text, it refers to what we call public buildings.

55   The main idea is not a critique of Vitruvius, but a re-reading of the treatise as closely as possible to the initial meaning it gave to the issues being studied, in his specific historical context.

56   The first to mention the term is Herodotus, for Eupalinos of Megara, the architect of the aqueduct of Samos, cf. CALLEBAT, Louis, *op. cit.*

57   TATARKIEWICZ, Wladislaw, *Istoria esteticii,* vol.1, Ed. Meridiane, 1978, and *Istoria celor șase noțiuni,* Ed. Meridiane, 1981.

58   ROWE, Collin, *The Mathematics of the Ideal Villa and Other Essays,* MIT press, 1976, pp.59-88.

59   There is a certain ambiguity here, their application being however demonstrated especially for buildings; but this is not a very important issue.

60   VITRUVIUS, *ed. cit.,* V, P, 8, pp. 252-255.

61   VITRUVIUS, *ed. cit.,* V, P, pp. 254-255: *ita enim expedita erunt ad intellegendum. Eorumque ordinationes institui, uti non sint quaerentibus separatim colligenda, sed e corpore uno et in singulis voluminibus generum haberent explicationes.*

62   VITRUVIUS, *ed. cit.,* II, 1, 8-9, pp. 84-87.

63   VITRUVIUS, *ed. cit.,* II, P, 6, pp. 76-77. This last sentence will have a long career in the theory of architecture. To my knowledge, the last to use it was Gromort; see GROMORT, Georges, *Essai sur la théorie de l'architecture,* Ch.Massin éditeur, 1996.

64   In all three editions Book II has the same number of chapters, with the same titles.
65   Especially in the first two chapters, then sporadically in the others.
66   COSTA, T., *op cit.*, p.10.
67   VITRUVIUS, *ed. cit.*; V, P, 2, pp. 252-253.
68   Such insertions are to be found in later authors of treatises, for instance FILARETE, in his *Tratatto di architectura*. This becomes a literary technique whose acme is reached in Francesco Collona's *Hypnerotomachia Poliphili.*
69   KUFT, H-W, *op. cit.*
70   DE L'ORME, Phillibert, *Premier tome de l'architecture,* Paris, 1567
71   VITRUVIUS, *ed. cit.*,VI, P, 5, pp .6-7: "Thus little celebrity has come my way. Yet, by publishing these volumes, my name will reach, I hope, to after times."
72   CHOAY, Françoise, *op. cit.*, pp. 221-222. See also WITTKOWER, Rudolph, *Architectural Principles in the Age of Humanism,* W.W.Norton & Company, 1971, and PAYNE, Alina, *op. cit.*