

TECTONICS OF THE HUMAN BODY AND ARCHITECTURAL EMBODIMENTS

MARIA KARVOUNI

Virginia Polytechnic Institute and State University

This essay is an inquiry on the relationship between tectonics and the human body. It has been triggered by the realization that in the greek language, in which the term “tectonics” originated, the (earliest) word for the human body is *demas*, a derivative of the verb *demo*: to build. My study is an investigation of the nature of this relationship as it unfolds in the ancient texts and is manifested in building; indirectly it is a reminder of a powerful relationship and analogy that has become oblivious in our modern times, namely the connection between tectonics and corporeality. If Plato is right and knowledge is a process of remembering, “reminding” ourselves of what tectonics used to be once, may help us clarify what it is in the present. In the Greek language there are two etymological families that provide the vocabulary for building: the family constructed from the root *Tek** and the one based on the root *dem**. Accordingly, there are two verbs that describe the act of building: *tektaino* and *demo*.¹ Both verbs are used by Homer and each one of them belongs to a group of technical terms most of which can be found unchanged or slightly modified in the Greek language from Mycenaean times to the present. The former belongs to the group that *tektion* and later *architekton* (architect) and of course *architektonike* (architecture) come from. The latter is the core word in the family of terms like *domos* (house), *doma* (room or terrace), *dome* (structure), *oikodomo* (build a house or simply build) and *oikodomike* (the art of building—architecture).

Tectonics (and its ancestor *tektionike*) is of course the base upon which architecture is built literally, metaphorically as well as historically. Before it was called *archi tektionike* (architecture) the art of building was called *tektionike* (tectonics). Tectonics is therefore literally at the root of architecture. Therefore, the nature and understanding of tectonics influences directly the nature and understanding of archi-tectonics (architecture) in any period of time. *Architektonike* is the addition of *archi* to tectonics. Plato, for example, uses the word *architecton* (chief tecton, architect) but never architecture. An architect was the master of an art which could equally be called *tektionike* or *oikodomike*. In the ancient greek world, these two building terms were often used interchangeably.

I would like to argue that *tektaino* and *demo* both describe “construction” but they stress different aspects of making. In *tektaino* the emphasis is on the “how” in *demo* the emphasis is on the “what.” Yet both allude to notions that imply a parallel between body and building. In *tektaino* the art of building is understood as a genesis, while in *demo* the outcome is perceived as a body. A discussion on the technical aspects of both *tektaino* and *demo* is necessary in order to support my argument. I will start with the former.

It is often the opinion that a *tektion* was a carpenter, a joiner working in wood. Yet evidence shows that this was not always the case. It was definitely not the case in Homeric times. I believe it is correct to say that although a wood-joiner was probably always a *tektion*, a *tektion* was not always a worker in wood. *Tekton* comes from the Indo-European root *teks** signifying in its more general sense “to work with an axe, to fashion”.² Because of that, it is usually assumed that a *tektion* was a carpenter. But the Greek equivalent of an axe, the *pelekys*, was a tool known from prehistorical times and used for working both in stone and in wood.³ Therefore, it seems more accurate to define a *tektion* as an artisan who had to use strong tools in order to fashion hard materials. Many ancient references, I believe, confirm such a view. The ancient lexicographers point out that a stone worker was also a *tektion*.⁴ Students of Greek building terminology also consider *tektion* an artisan working in hard materials, mainly wood and stone.⁵ An inscription at Eleusis calls *tektones* the artisans that fit the plinths.⁶ In an excerpt from Basillia B in which the building of David’s palace is described, workers in both wood and stone are called *tektions*: “*Tektiones xylon* (wood-tektions) and *tektiones lithon* (stone-tektions) were sent to build (*okodomisan*) David’s house (*oikon*).”⁷ And in Homer, *tektiones* are both the ship-builders and the house-builders.⁸ It should, therefore, be made clear that, even though later and especially in Hellenistic times a *tektion* was perceived as a wood-worker and mainly as a roof-maker, this was not the original meaning of the word.⁹

Summarizing the above, one may say that a *tektion* was originally an artisan who, *pelekys* in hand, was shaping hard materials. He had to proceed in his work by cutting and joining. Therefore, it was more his way of working rather than the material used, that defined his métier. *Tekton*’s mode of working requires a tool (the axe) in contrast to working with bare hands like in molding for example; (*platto*: to mould is related to *palame*: palm, hand). Unlike the continuity of molding, tectonics is defined by discontinuity, by cutting first—thus by the necessity of the axe—and then joining. Tectonics deals with the arrangement of “distinct units” which are first shaped by the *tektion*’s tool and then placed and joined together by him as well. This, I believe, explains why a mason-who places and joins stones together- and a ship-builder who fits planks together are both called *tektiones* in ancient Greece.

This kind of seemingly antithetical dual activity (dividing and connecting) is what defines the core of tectonics. This “tectonic pair” seems to be the same with the primordial pair that operates in any creation- genesis. It is found in cosmogonic accounts, in mathematical accounts, in philosophical speculations, as well as in the discussion and definition of art in general.

As if the process of “coming into being” is understood by the Greek mind as reflected in, or similar to, the “tectonic process.” One can notice, for example, that the basic pair of tectonic operation is reflected in the two cosmogonic forces that prevail in most myths of creation: dividing-separating and joining-bringing together.¹⁰ It can also be found as the basic pair of mathematical operations: dividing (*diairesis*) and adding (*prosthesis*).¹¹ One has to be reminded here that in prescientific Greece, numbers had ontological presence and numerical operations were understood as expressing plurality and becoming. The same two forces, separating and connecting, portrayed as Strife and Love, are found in Empedokles’ philosophy operating in the whole universe.

On the other hand, the tectonic pair (of cutting-joining) is found at the basis of every art. The philosophers suggest that at the base of every art one finds the tectonic operation of cutting-shaping and connecting-composing. In the ontological world of ancient Greece it is the most corporeal of the arts that serves as a prototype for understanding the “workings” of art. And the primary operation of “cutting-shaping” pieces and “building” them into a coherent whole is understood as the basis of any artistic endeavor.

Tectonic process, therefore, underlines both artistic creation as well as the greek understanding of creation in general. It provides a parallel between natural and artificial making.

In tectonics thinking is imbedded in making. This explains why *tektaino*, from its early beginning (Homer) means both “to devise” as well as “to construct.” The art of tecton (tectonics) requires both to plan (in the mind) and to realize (with material). A tecton both conceives and brings into life. As a matter of fact *tektaino* is believed to be connected etymologically with *tikto* (to give birth), which also presupposes conception. Indeed, in some early expressions, the word *tecton* is of female genre, it is a she. (Aeschylus; Euripides). There are also cases in which the word *tecton* is used to indicate a father. (like in *tecton phyles*: father of the race; Aeschylus.) It seems that in the ancient world people perceived parallels between tectonics (artificial making) and *tikto* (natural making), as well as between *tektons* (builders, constructors, authors) and *tekountes* (natural parents).

If in *tektaino* the art of making is considered a genesis, in *demo* the outcome of this making is understood as a body. But before we analyze this side of the term, a few technical aspects should be mentioned. It can again be argued, I believe, that in *demo* the emphasis is also on the way of making rather than on the material used. It stresses building by layers and (in most of the cases) building from the ground up.¹² Furthermore, *tektaino* and *demo* are not mutually exclusive but rather complimentary; they can even be used interchangeably at times. In Homer a *tektion* both *tektainei* and *demei*. He builds ships, houses, halls, walls, courtyards etc.¹³ The Homeric poems are not the first texts in which the two terms are found. In tablets of the deciphered syllabic linear B script, dating from Mycenaean times (around 1300-1200 B.C.), the following names have been found: TE KO TO NO (*tektion*): builder; NA VO-DO MO (*naudomos*): builder of ships; TO KO -DOMO (*teichodomos*): builder of walls.¹⁴ There are some interesting observations to be made: from this early age, *tektion* qualifies a person working in a specific way and it stands by itself. *-Domo*, on the other hand, exists only in composite form and it indicates a way of making that is inseparable from the object of this making. In the different *-domo*

composites, in one single word the maker, the way of making and the final product are all included. *-Domo* points towards conclusion, towards the fulfillment of the act of building, specifying the completed outcome.

It can be argued, I believe, that while *tektion* stresses the “how” in making, *-domo* emphasizes the “what.” This point can be further supported by observing the different composites that the two terms generate: *Tektion* defines an artisan without any need for further qualification. It is rarely found in composite form, however a well known exception is *archi-tektion* (chief builder). In the few cases that it is used in a composite form it always indicates the material the *tektion* is working with e.g. *siderotektion* (iron-tektion), *chryso-tektion* (gold-tektion), *laotektion* or *lithotektion* (stone-tektion).¹⁵ Therefore, a *tektion* can be found linked with the material he is using but never with the final product of his effort. Its composites offer further qualification to the manner of his making: “how and with what material.” This is apparent even in the metaphorical *phreno-tektion*: someone that constructs with his *phrenes* (mind).¹⁶ Once again it is the “material” that is emphasized.

In contrast, *-domos* (as a person that builds) appears only in composite form, like *oikodomos* (house-builder), *teikhodomos* (wall-builder), *naodomos* (temple-builder), *pyrgodomos* (tower-builder); the reference is to the built artifact and the emphasis on the completion of the work. And the builder cannot be referred to, independently of his built product. It is this the notion prevailing is that the builder must have in his mind from the start the goal of his making, the image (however vague) of the wall, the house or the temple he is going to build. In the act of making the future product is already envisioned and the whole entity is expressed in the language by a single word. This word connects the builder, the way of making and the built-artifact.

The emphasis of building-*demo* to completion, suggested by its composite forms, can be strengthened by an additional and, one may say, unexpected realization: Among the many derivatives of *demo* (*domos*, *doma*, *dome* and others),¹⁷ all of which relate to construction, one also finds *demas*, the earliest known greek word for the human body. This “coexistence” is of double significance. On the one hand, the realization that a linguistic bond once existed between body and building, may also suggest other types of connections between the two. On the other hand, one may wonder at the significance of realizing that it is not only that the human (and animal) body is connected to, referred to, or understood as an artifact, but even more importantly that it is the art of building that provides the first term which captures the human body as a totality. Why, one may wonder, is the living body expressed by a derivative of the verb “to build” and in particular the one (*demo*) that suggests completeness and totality? This last question is extremely important especially since scholars have doubted the perception of the human body as a unity in early Greek thought.¹⁸ But I will like to argue that the existence of the Homeric *demas*, the human body as a built artifact, argues for the exact opposite. I intend to show that the very fact that the human body is called *demas*, which is a derivative of *demo* (the building term that implies completion and unity), demonstrates that the body was understood as a unified construct. But first a brief discussion about *demas* is necessary.

The word appears mainly in Homer, rarely in the lyric and tragic poets and it fades away in later years replaced by

soma.¹⁹ *Demas* expresses the physical composite that is recognizable as a distinct individual. Poseidon in Iliad “takes on the likeness of Calchas, in bodily form,” (*eisamanos kalchasi demas*) (Iliad 13.45). And when Athena disguises herself as Mentor, when she draws near Telemachos “in the likeness of Mentor in *demas* and in voice”, she does not simply look like Mentor, she assumes his body, she embodies him. (Odyssey, 2, 268). This is the type of likeness that the adverbial *demas* denotes: “in the build of something else, in a similar 'bodily structure.’”²⁰ It is probably an analogy and a metaphor in the original sense, (*meta-pherō*: carry over) when to “be like something else” implied to “be able to stand in its place,” to “fit in its form and assume its substance,” thus to embody it. It is of great significance, I believe, that it is *demas*—the body, a derivative of *demo*—to build, that expresses this type of analogy.

The ancient lexicographers also render *demas* as the human body²¹ and offer the following etymological explanations: “*Demas*: the body; from *deō*: *desmeuo* (to bind, tie, fasten, fetter) because the soul is tied to the body; because the body is the bonds and the fetters of the soul; or from *demo*: *oikodomo* (to build, to build houses) since the body is the structure built around the soul and the place of its dwelling.”²² The affinities between *demas*—body, *demo*—build and, *deō*—tie, point I believe, towards an interesting notion: When something is composed of parts, in order for these parts to stay together and to compose a unit, a totality, they need something to bind them together. In the living human body, it is the soul that does the binding say the scholiasts; in a work of art it is achieved with *harmonia* (actual fastening);²³ or, with “proportions” which, according to the ancients, are the invisible bonds (*desmoi*) that hold units together, these being artifacts, the human body and even the whole world. *Demas* provides, I believe, the best confirmation of the understanding of the human body as a “unity in multiplicity.” The very nature of this word (which comes from a verb (*demo*) that implies construction realized by fitting and tying), provides the most vivid image of the body as a structural composition, completed by proper adjustments and secured and unified by the “binding” of its elements.

The technical Greek vocabulary indicates an ability of the Greek mind to oscillate between the concrete and the abstract. It also shows a tendency to pair (and compare) artificial making with natural making (root *tek*) and built—artifact with living body (root *dem*). As if the one could help explain and illuminate the other. These connections and associations are not only suggested by the etymology but they can also be encountered in many of the ancient texts. They are found in both Homer and Plato. One has simply to listen to their imagery.

Homer conceives of the human body in its parts and in its totality (body, soul and mind were not yet distinct categories²⁴) as a well constructed artifact. “I have my eyes, ears and both my feet and a *noos* (mind) well constructed (*teucho*) in my chest,” he says.²⁵ Organs, body-members and even the *noos* (mind-spirit-soul) are fabrications which depend on good “craftsmanship.” The individual is a larger structure in which parts have to “fit well together” (*ararisko*). *Phrenes* (mind-feelings) is something that can be built (*tektainetai*); a prudent person is one “well fitted” in his *phrenes* (*phresin ariros*).²⁶ *Phrenes*, resemble the work of a *tektion* in which good construction depends on the way the pieces are put together; (*ararisko*: to fit well; *harmonia*: means of fastening, harmony are of the same root *ar**). Homer uses the same epithet, *isos*, for a properly built boat as well as for

a virtuous human being; both are *isoī*, “well balanced in construction.”²⁷

The limbs (*melea*) can be “unloosed” (*lyo*), like *harmonia*—the actual fastening in a construction—can be unloosed, like a wall can be “unloosed.” In building phraseology, the expression “to unbind a wall” (*lyo to teikhos*) means to deconstruct a wall.²⁸ To build a wall (*demo*) was understood as involving a kind of *desis* (or *syndesis*: fastening). “A similar notion is reflected in the way Homer refers to the body. It is not only a well crafted artifact but it is also a well bounded compound held together by some powerful “fastening” element. The precariousness of the human condition is well reflected in this powerful image. Once the “string” is let loose the cohesion and coherence of the whole are destroyed.

Homer does not tell us what are the means of “fastening” which are involved in the “construction” of the human body; i.e., how it becomes a *demas*, a well bounded and built whole. But he give us some clues as to when this unified construction disintegrates: When there is no life in it, the *demas* becomes a *soma* (a corpse). And since *phrenes* (mind-soul) in Homer is, among other things, the seat of life or life itself,²⁹ it may very well be that it is *phrenes* that providing the “live bonds” that keep the body alive, that make it a *demas*. The human body as *demas* implies both a sense of “building” and of “fastening.” The sense of “Building,” stresses its artful construction; the sense of “fastening” implies its unity and its being alive.

Listening to Homer one becomes aware of an ability in him to hold together the concrete and the abstract notion of a word as well as an aptitude to keep the natural and the artificial in a reciprocal relationship. In the Homeric world, the living body is thought of as an artifact and at the same time an artifact can embody a living thing. *Harmonia* is the means of fastening the planks of a boat (concrete) yet also an agreement between human beings, an invisible bond that keeps them together (abstract). *Tektones* can build houses but they can also construct thoughts. This makes easier to accept that “to build” (*Tektaino*) and “to beget” (*tikto*), in the greek language, may possibly be two transformations based on the same root “*Tek*.”³⁰ Homer initiates (or records) a relationship that was gradually transformed into the body-building analogy of architectural theories. Before it can be found in architectural records, the analogy is articulated by Plato. In *Timaeos*, Plato gives an account of how the world came into being. He portrays God as a *Tekton* and his artifact, the universe, as a living being modeled out of the human body. As in Homer, Plato’s imagery is revealing: The *poesis* (making) of the world is a construction. God is called a *Demiourgos*, an artisan He is also referred to as *tektainomenos* (acting like a *tektion*). He works by using as a model the living body, his work is therefore a *mimesis*, like any other art-work. (It is absolutely necessary, Plato says, that the world is the image of something and that it should be built according to a model (*paradeigma*)). This divine artificer proportions his materials and uses *symmetries* (proportions) like any other good artisan.³¹

The amount of technical terms and especially building terms used in describing this *poesis* is amazing. God *tektainei* (builds-joins), *armozei* (fits) and *oikodomei* (builds houses or simply builds).³² The “building up of *Phrenes*” that we found in Homer, has an equivalent in the “building up of the soul” in the body in Plato (*psyche synetektaineto*). As in Homer, the eyes were “constructed” (*synetektaineto*); and within the head organs (eyes, ears, etc.) were “fastened” (*enedesan*). God had “build”

(*etektinato*) the whole universe perfect (*teleon*), giving to it its appropriate shape (*schema*). He had “joined together and constructed the heaven.” Everything was “structured” (*to pan synetektaineto*). Everything was made with skill and knowledge, thus with art (*ek technes*). The gods “build” the human body around the soul, “working with lathe and chisel around it” (*peritorneusan*). After they finished the mortal body they “build (*pros-okodomoun*)” inside it a mortal soul.³³ Finally, a three-parted soul “was housed” (*katokistai*) inside every mortal. And the building imagery goes on and on...

In Plato, as in Homer, the members of the living being-*kosmos* are “fitted together” (*armotousin*). Different elements and body parts are joined and built up (*tektaino-oikodomo*) like parts of a house. Any living being, either the whole universe or the individual human being, is made perfect and complete with the use of *analogiai* (proportions) which, amazingly enough, Plato calls *desmoi* (means of fastening- bonds). These numerical *analogiai*, these “bonds” are the ones that guarantee harmony (*harmonia*) in the universe, in the soul, in music as well as in any artifact. I believe it is extraordinary to realise that the notion of *harmonia* as a means of binding, a notion that is found in Homer and in technical terminology, is still present in Plato. The means of fastening, concrete and tangible in Homer are transformed here into mathematical proportions. And yet for Plato too, their binding power is equally strong. Harmony is one of those wonderful words that, in the Greek mind, could assume simultaneously a tectonic, a musical and an abstract (mathematical) character. And yet harmony is also what keeps the human body together and guarantees its good “tuning” and “fitting.”³⁴

According to Plato, for the *poesis* (making) of both the universe and the individual human being, the model was one and the same, the materials were the same and the “construction” followed the rules of making a well adjusted house. This well adjusted house-body, Homer has called *demas*. Plato’s Timaios is a commentary and a development of this basic notion, in which the house-body relationship is expanded to incorporate the whole universe. Body-house-universe are all made up by similar rules. Each one of them has been set in order (*dia-kosmethē*) by division and arrangement.³⁵ Each one of them is a *kosmos*, an order and an embellishment...It is quite evident that when Plato attempts an understanding of the making and working of the Kosmos, he resorts to the art of building to provide him with analogies and mediating tools. The human body provides the model for kosmos, the body (of the universe and of the individual being) is “fashioned like a house” and the tectonics process serves as a paradigm that explains life in its making...

Homeric and Platonic images present the body and its functions “as if” it were an artifact. Art seems to mediate and explain life. Homer’s and Plato’s use of technical terms most probably reflects the notions of the artisans of their times; In both, the body- building analogy is to be understood as a metaphor in the original sense of the term; (*metaphero*: to carry over). In that sense “to be like something” means to be able to take its place, to embody it. Hence within this frame of mind, “the body is like a building” means “the body is a building.” And the art of tectonics is the art of embodiments.

Homer first and Plato later, present us with the notion of a reciprocal relationship between body and building. This notion has been adopted by many architectural thinkers, it has been elaborated upon and transformed into the much celebrated

body-building metaphor. Vitruvius is the first architect that we know who elaborates on it: “The planning of the temples depends upon *symmetria*...For without *symmetria* and proportions no temple can have a regular plan: that is, it must have an exact proportion worked out after the fashion of the members of a finely shaped human body.”³⁶ Furthermore, Vitruvius says, the paradigm for the making of a column was the human body. Always according to Vitruvius, the doric column displays the proportions and the attributes of the male figure and character, the Ionic of the female, and so on. Hence, we can add, the column is a metaphor for the human body in a very ontological sense: it *metapherei* (transfers) the proportions and traits of the human body and thus it embodies them in stone.

Alberti joins Vitruvius in emphasizing the alliance between building and the living body:

Just as the head, foot, and indeed any member must correspond to each other and to all the rest of the body in an animal, so in building, and especially in temple, the parts of the whole body must be composed that they all correspond one to another, and any one, taken individually, may provide the dimensions of all the rest. Alberti also refers to a wall as a living being with bones, ligaments and muscles.³⁷

The Christian Byzantine authors describe the different parts of the church as corresponding to different parts of the human body: “The entire church is an image of the Universe, of the visible world and of man; within it, the chancel represents man’s soul, the altar his spirit, the naos his body. The Bishop’s Entrance into the church symbolizes Christ coming into the flesh, his Entrance into the Bema Christ’s Ascension to Heaven...”³⁸ For Michelangelo “there is no question but that architectural members reflect the members of Man and that those who do not know the human body cannot be good architects.”³⁹ And for Rodin a Man is “a walking Cathedral.”

This metaphorical way of thinking and doing architecture is still strong in some societies as S. Blier has shown for the case of Batammaliba architecture. (Africa). In their architecture one can still observe how buildings and their parts can be ontological metaphors, and thus embodiments, of the forces of life, of the male and the female bodies and of their attributes.⁴⁰

In the ancient Greek world, R. Padel has shown, the Greek theater (the building) could embody notions of the inner and outer self, of male and female attributes.⁴¹ In a similar fashion, I believe that the Greek temple with its surrounding columns, independent yet relating to one another, standing equal yet never exactly the same and all together supporting a common goal, embodies the Greek notion of citizenship. In its extrovert character with its emphasis on the outside one can feel the importance of the outer, thus public life. The *symmetria* of the temple (and in Greek *symmetria* means proportional equality balance and equilibrium) reflects the *isonomia* (equality in law) of its citizens. And yet, *symmetria* what guaranteed the well being of the body, its health. Hence, through *symmetria* and its embodiment in the temple, the human body, the civic body and the building seem to reflect and illuminate each other.

In the Greek world the ability to withhold both the concrete and the abstract coloring of a word, is reflected in the tectonic ability to also embody both the concrete and the abstract. The possibility of capturing in building this ambivalent connection, created the possibility of explaining life with the help of the artifacts; life itself could be viewed as an artifact. It made also possible to perceive and enjoy artifacts as embodi-

ments of the conditions of life.

This notion of architecture as embodiment is out of favor in our times. We tend to talk about architecture in terms of “concepts” and “ideas” and to place a disproportional emphasis on the visual. We seem to favor the abstract, the cerebral and the visual at the expense of the concrete, the corporeal and the tactile. And yet those two, as the ancients could tell us, do not need to be at odds. And it is within the power of architecture to bring them together and celebrate their unity. What I am missing most in modern buildings, says Botta, is the “erotic dimension.” The dimension, we may add, that could make a building “feel” like a body; a building that will ask our fullest and synchronous sensual and mental attention like a “living being.” The subject is touched upon sporadically by other architects. F. Gehry, for example, is an architect whose work evokes body-building analogies. In Gehry, it is the dynamic body and its interactions that comes into play.” A building—and the parts of a building—” he says, “should have that energy of bodies, forms together that have an effect on each other.” Referring to his Center in Paris, Gehry points out that the building is “like a ballet dancer, a ballerina lifting her skirt, inviting people to come inside...” In some other point he refers to his building as having a “body language.” One may of course say that this is just a metaphorical way of speaking. But I believe is much more than that. The sculptural body-units of Gehry’s buildings and their dynamic interaction emanate the vitality of living beings. This outcome is not achieved by making buildings look like human beings—that would be absurd—, but by “embodying” human attributes and traits in a “tectonic” way.

In a more fundamental level, the architect who argued for the need to re-cover the lost relationship between tectonics and the human body was Le Corbusier. His Modulor is the most profound modern attempt to recapture and re-establish a bond between building and body. Le Corbusier’s ideas have not yet been fully understood neither have they been fully explored. Their power lies not so much in his specific solution but in the strength of his argument. Le Corbusier argued that architecture could developed an “architectural scale” whic could do for architecture what the musiac scale does for music. Le Corbusier tried to find the “qualitative relationships” of architectural measurements that could be the equivalent of “qualitative” musical proportions. His effort was to establish proportions and measurements that could be “architecturally meaningful.” And he believed that it was the human body and its relationships that could provide the clues in such an undertaking. And yet, by “incorporating” the proportion of the human body in building measurement, one transfers the relationships of the human body in construction. This is a fundamental way of embodying ourselves and our understanding of ourselves in our making. Architecture then becomes the art of embodiment through tectonics, the art that can “built” the abstract together with the concrete.

NOTES

1. There are other verbs like *teucho* (make, fabricate, construct) or *poieo* (make) but their use is much broader. *Tektaino* and *demo* seem to have been used exclusively in building operations. See Liddell and Scott’s *Lexicon*; Orlandos’ *Lexicon*; Chantraine’s *Dictionnaire*; *Lexicon of Homeric Dialect*; Hesychius; *Etymol. Magnum*.
2. Chantraine: *Dictionnaire Etym.*, p. 1100; Benveniste: “le probleme”, pp. 140, 141; Lund: *the History of words pertaining to Crafts*, p.5
3. Since the verb *pelekaō* (working with a *pelekys*) was used in both stone and

- wood work; see *peleako*, *pelekema*, *pelekisis*, *pelekites* etc. Orlandos: *Lexicon*, p. 202; for Greek tools on wood see Orlandos: *Ylika V*. 1 pp. 39; for tools on stone *Ylika V.2* pp. 116-121; also *Lexicon*
4. Hesychios, Soudias, Polydeukis, Apollodoros of Karystos and others; e.g. Hesch: *tektion: pas technites* (every artisan); Soudias: *tektion: laoxoos ke o ton xylon eidemon* (the stone carver and the wood-expert).
 5. Although there are a few exceptions like *tektion keraxoos*: (*tektion*: worker in horn, Homer: *Iliad*, D, 110; *tektion halkou*: *tektion* working in bronze, CIG III add. 4158; For a detailed discussion on references to *tektion* and its different notions as presented by ancient texts, see Orlandos: *Ylika V.2*, pp. 36-38. Also Lund’s, op. cit. pp.4-8
 6. IG II 2,2 (1) 167772 185
 7. Bassileia B, e.11. see also Orlandos, *Ylika V.1*, p.36
 8. Polydeukis, On.1.12.7,117. see also Orlandos’ *lexicon*, p.247
 9. For the Hellenistic view of a *tektion* see Orlandos, op. cit., p.37
 10. In most cosmogonic accounts there is first an undifferentiated whole. At some point this divides and splits into two. The two (opposing) forces or parts created then they come together and by their union other things are brought into existence. Separation and union define and describe creation.
 11. There are four mathematical operation: addition, subtraction, multiplication and division; but multiplication is a form of addition; they can therefore be grouped together as one mode of operation. The same can be said for subtracting and dividing.
 12. *Demo* was also used in road construction (Herodotos) or the construction of a level plot e.g. a vineyard (Homer); Benveniste, op. cit., p. 17
 13. Homer, *Iliad*, Z 315/316; *Iliad*, E, 59. For a detailed reference to all instances that Homer uses the two words see *Lexicon of the Homeric Dialect*.
 14. Chadwick and Baubach: *The Mycenaean Greek Vocabulary*; see also Chantraine and Benveniste. The meaning of the last one “e te do mo” has not been deciphered because the meaning of “ete” is unknown; Benveniste thinks possible that “ete” refers to a type of edifice that still needs to be identified; for a discussion see Benveniste, op. cit., p. 19. ft. 1.
 15. Orlandos’ *Lexicon* and *Ylika*; Chantraine *Dictionnaire*,
 16. Chantraine, op. cit., *phreno-tektion* (Ar.), p. 1100
 17. Chantraine’s *Dictionnaire*; Benveniste’s *Homophonies*; *Lexicon of Homeric Dialect*; for all technical terms that derive from *demo* see Orlandos’ *Lexicon*.
 18. Snell, for example, was convinced that the notion of the human body as a whole does not exist in Homer. It is never the human body, he says, but a part or some parts of it that participate in action or suffer the consequences of another, and the same can be said for feelings or thoughts. The Homeric body is fragmented, he concludes.
 19. Chantraine’s *Diction*. p.261; Benveniste’s *homophonies*, p. 18, ft. 3; also *Lexicon of Homeric Dialect*.
 20. In advbl. acc. with genit., *demias*: in the build of, after the similitude of, like; (as “like” has developed fr. orig. Teutonic *liko-, body, form). *Lexicon of Homeric Dialect*.
 21. Hesychius 600, 7; *Etymol. Magnum*, 255, 36-43
 22. *Etymologicon Magnum*, 255, 36-41; 737, 36, 37 and 39
 23. In Homer, *harmonia* is a means of fastening the planks of a boat. *Lexicon of Homeric Dialect*.
 24. For a wonderful discussion on this subject see Padel’s *In and Out of the Mind*.
 25. *Odyssey* 20.365-367
 26. *Odyssey* 10.553-554. For the impossibility of translating *phrenes* with one single word see Padel, op. cit., esp. pp. 20-24. “*Phrenes* contain emotion, practical ideas, and knowledge”. *Phrenes* are containers: they fill with *menos* (anger) or *thymos* (passion)...They are the holding center. folding the hart, holding the liver... “You are struck, you know, understand, tremble, feel, or ponder in that responsive, compact, containing center”, p. 21....”But sometimes *phrenes* are an active initiating force...people feel intense love and grief in *phrenes*. *Phrenes* are actively, decisively emotional and imaginative.” p.22
 27. For this use of *isos* which literally mean “equal” see Vlastos’ “Equality and Justice in Early Greek Philosophies.”
 28. *Iliad*, 16.805. Also See *lyo* in Orlandos’ *Lexicon*, p.173
 29. Liddell and Scott, op. cit., *phrenes* as opposed to *psyche* (the departed soul).
 30. See Kophiniotis *Lexicon*; he connects *tektion* to *tikto* (beget).
 31. God, the *Demiourgos*, is referred to as *tektainomenos*: acting as a *Tekton*. See also Tim. 28C; 28, 41A, 41C etc. Also 29B-D. And 39E; 47E; 67C; 69A-C; 87C etc.

32. The following is not a complete list but just a few references: *tektaino*: 28C, 33B, 39B, 68E, 69, 70E and others. *armotto* or *synarmotto*, 32B, 35B, 36E, 56C, 69B and many others; *oikodomo* or *dioikodomo*: 69E, 70, 70B and many others.
33. Ibid. 29E; 45B and 45C; 33B; 32C; 30B; 69B-70.
34. Plato talks about the human body as being held in tension and tune like a musical instrument (in *Meno*).
35. *Timaios*, 69E, 70, 70B etc.
36. Vitruvius, Book 3, ch. 1
37. Alberti, *On the Art of Building in Ten Books*, book 7. ch.5. For the wall as a living being see book 3.
38. R. Krautheimer: *Early Christian and Byzantine Architecture*, part five. This particular interpretation is according to Maximus the Confessor (early 630 BC).
39. Michelangelo, in a letter of about 1560. *Milanesi Le lettere di Michelangelo Buonaroti*, Florence, 1875, p.554. Mentioned by Wittkower in "Architectural Principles in the Age of Humanism", part four, ft.2.
40. S. Blier: *The Anatomy of Architecture; Ontology and Metaphor in Baroque Architecture*.
41. R. Padell's "Making the Space Speak" in *Nothing to do with Dionysos*.