

VITRUVIUS AND ETRUSCAN DESIGN

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It is all too tempting to use Vitruvius' *De architectura* to reconstruct the walls and columns of Etruscan temples now missing from the archaeological record. The Roman treatise contains a clear formula for the ground plan of a temple designed in accordance with the *tuscanicae dispositiones*, but that plan differs from those of many Etruscan cult buildings reconstructed on the basis of archaeological evidence. This article explores the resulting debate about what Vitruvius was actually describing and by extension his relevance for the study of Etruscan architecture. It shows that while Vitruvius should not be regarded as an authoritative source of information about Etruscan plans, this is less a consequence of his measurements than the way in which they are often interpreted. If the discrepancies between the literary and archaeological data are regarded not as errors but as signs of the intended function of the *tuscanicae dispositiones*, then it is possible to reconcile the divergent evidence for the arrangement of temple walls and columns in a manner consistent with modern architectural theory.

VITRUVIAN AMBIGUITY

Vitruvius, or at least the text attributed to him today following a long and convoluted manuscript tradition, provides detailed instructions on how to lay out a temple with proportions that conform to the *tuscanicae dispositiones*:

Locus, in quo aedis constituetur, cum habuerit in longitudine sex partes, una adempta reliquum quod erit, latitudini detur. Longitudo autem dividatur bipertito, et quae pars erit interior, cellarum spatiis designetur, quae erit proxima fronti, columnarum dispositione relinquatur. Item latitudo dividatur in partes x. Ex his ternae partes dextra ac sinistra cellis minoribus, sive ibi alae futurae sunt, dentur; reliquae quattuor mediae aedi attribuantur. Spatium, quod erit ante cellas in pronao, ita columnis designetur, ut angulares contra antas, parietum extremorum regione, conlocentur; duae mediae e regione parietum, qui inter antas et mediam aedem fuerint, ita distribuantur; et inter antas et columnas priores per medium isdem regionibus alterae disponantur.¹

‘Take the site where the temple is to be established; whatever its length, divide this into six parts. Take away one part; assign what remains to the width. Divide the length in two. The inner part will be assigned to the spaces of the cellas. The part next to the façade will be left for the arrangement of the columns. Also divide the width into ten parts. Of these, give over the three parts on the right and left of each one to the minor cellas, or to the wings if there will be wings instead; assign the four remaining parts to the center of the temple. The space that will be in front of the cellas in the front portico should be drawn up with columns in the following way: the corner columns should be placed opposite the antae of the outermost walls. The two center columns should be distributed so that they are opposite the walls between the center of the temple and the antae. Place a second set of columns exactly in the middle between the antae and the first range of columns (*De arch.* 4.7.1-2).’²

While the illustrations that originally accompanied the text are now lost (Rowland 2005: 22), these proportions can be turned into an architectural drawing (Fig. 1). The resultant plan is almost square, with three rooms placed behind a portico or columned porch, and rooms and a portico of roughly equal length. This is relatively straightforward. But what does this drawing actually represent?

Translations of the words *tuscanicae dispositiones* vary widely. The noun, *dispositiones*, has been taken to mean style, arrangement, design, rules, and architectural order, (Damgaard Andersen 1993a: 74; Edlund-Berry 1997: 77-78; Colonna 2006: 155; cf. Rowland 2005: 26), and thus may refer to a building’s broad appearance or a very particular combination of proportions and details. The adjective *tuscanicus* has been interpreted as Tuscan, Tuscan-like, Tuscanoid, Etruscan, and Etrusco-Italic, and also read as general synonym for anything old-fashioned or antiquated (Brown 1972: 343; Borrelli 1997; Vitruvius Pollio and Gros 1992: 177-178; Cornell 1995: 167; Rykwert 1996: 357; Gros 1997: 493-494; Edlund-Berry 1998: 18; Rowland and Howe 1999: 229); there is a possibility, however, that it may have been used simply for literary style or variety (Rowland 2005: 27-28). These possibilities give the two words an ambiguous chronological and geographical frame of reference: Vitruvius may have been describing a specific temple that remained visible in his day; a temple plan found in Etruria but not Latium; a temple known to him from other sources; a generic type of ‘old’ temple; or, turning from description to prescription, an idealised, abstract design based on the

amalgamation of many related, but different, buildings.³ Comparison with other proportional systems described in the *De architectura* does not provide a clear guide either. As Gros has noted, the *tuscanicae dispositiones* differ from Vitruvius' recommendations for Greek temple types by omitting references to the concepts of *species* and *symmetria* (Vitruvius Pollio and Gros 1992: 177). The subject and the purpose of the *tuscanicae dispositiones* are thus inherently problematic.

Vitruvius' first-hand knowledge of Etruscan temples is unlikely to have been extensive. Etrusco-Italic temples developed a distinctive architectural style during the sixth and early fifth centuries BC, when they began to be differentiated from other types of buildings through the adoption of idiosyncratic features such as podia and became the only structures to carry architectural terracottas. By the time that Vitruvius wrote his handbook in the late first century BC, the great Etruscan temples at Pyrgi, Veii, and Tarquinia had undergone up to five centuries of modifications or been destroyed. It is also unclear how many temples in Augustan Rome, Latium, and Etruria predating the third century BC had not been substantially remodelled or entirely rebuilt since their initial construction, but a conservative estimate would be few (Edlund-Berry 2013a: 700-701).

Interestingly, Vitruvius does not cite any specific temples as examples of Etruscan religious architecture or the *tuscanicae dispositiones*. His discussion of araeostyle colonnades contains the closest reference:

In araeostylis autem nec lapideis nec marmoreis epistyliis uti datur, sed inponendae de materia trabes perpetuae. Et ipsarum aedium species sunt varicae, barycephalae, humiles, latae, ornanturque signis fictilibus aut aereis inauratis earum fastigia tuscanico more, uti est ad Circum Maximum Cereris et Herculis Pompeiani, item Capitoli.

'It is not possible to make an araeostyle temple with epistyles in stone or marble; instead, above the columns wooden beams must be placed all round. The appearance of these temples is splayed, top heavy, low, and sprawling, while their roofs are decorated with terracotta ornaments or gilded bronze in Etruscan style, as in the temple of Ceres near the Circus Maximus, the temple of Hercules built by Pompey, and also the Capitoline Temple (*De arch.* 3.3.5).'

Here the adjective *tuscanicus* is applied to roof decor rather than the design of low and top-heavy buildings. The late republican features of the Temple of Ceres and the Temple of Hercules have not survived in a way that allows comparison with Vitruvius' formula. The temple on the Capitol, presumably the Temple of Jupiter Optimus Maximus, was originally built in the sixth century BC and was thus a prime example of an Etrusco-Italic cult building, but had burned down in 83 BC and been replaced by a building dedicated fourteen years later (Plut. *Sull.* 27.6; Tac. *Hist.* 3.72). Literary sources indicate that the new Capitoline temple was built on the same foundations as its predecessor but was higher and more extravagantly decorated (Dion. Hal. *Ant. Rom.* 4.61.4; Tac. *Hist.* 4.53; Plin. *HN* 33.18). Vitruvius may thus have been familiar with a replica or an echo of a lauded Etrusco-Italic temple instead of an original specimen.

Although it is impossible to recover Vitruvius' references for the *tuscanicae dispositiones* with certainty, it is possible to compare his formula with known remains of Etruscan temples and thereby assess the likelihood that he was describing consistent principles of Etruscan architecture. Excavations to date have identified at least forty shrines and temples in western central Italy that predate the third century BC, before the increasing influence of Rome arguably caused its architecture to displace earlier regional practices, and more examples continue to appear. Despite the fact that this is not a closed data set, our knowledge of these buildings has increased markedly in recent decades with studies of their formal development, their decoration, and their topography, to the point where there is now a substantial volume of primary evidence for Etrusco-Italic religious buildings to complement the secondary evidence from Vitruvius (for example, the syntheses by Colonna 1985b; Edlund 1987; Zifferero 1995; Winter 2009).

The Etrusco-Italic custom of building temples with significant quantities of perishable mud-bricks, wood, and soft stone, however, means that the archaeological record is necessarily partial; there are no remains comparable to the great stone temples of classical Greece or imperial Rome. While remains of foundations and terracotta roofs are relatively common, the arrangement of walls and columns often requires speculative reconstruction. Excavation reports from much of the nineteenth and twentieth centuries reveal a popular tendency to reconstruct temple plans on the basis of Vitruvius' formula, and archaeologists continue to reference Vitruvius as temple remains are presented, interpreted, and compared with his words. Vitruvius has thus become an ingrained part of the study of Etruscan architecture despite the ambiguous function of the *tuscanicae dispositiones*. Those interested in Etruscan

temple plans now have the choice of drawing information from Vitruvius, from published excavations, or from the more common and more complicated body of scholarship combining both. The following sections will accordingly review the information about Etruscan temple plans that can be derived from the archaeological record and compare it with Vitruvius' text to gauge the utility of each source. I will then argue that the discrepancies between them may help to clarify what Vitruvius was attempting to achieve when he set down his formula, and thereby suggest a useful way to interpret his words today.

THE ARCHAEOLOGICAL EVIDENCE

Plans of early Etruscan temples are often partly hypothetical. Published examples may represent one of many different reconstructions considered by the excavators, who commonly take great care to stress the contingent nature of their findings. The examples that follow demonstrate that determining what stood between foundations and partial roofs involves the close study of finds along with knowledge of architectural theory and practice, as well as judgements on how to balance the unique nature of many Etruscan sites with wider architectural norms.

The most substantial remains of many Etruscan temples were once elements of the substructure or foundations. From the sixth century BC, religious buildings were usually constructed atop podia that raised their walls and floors above ground level. Although it can be difficult now to distinguish a podium from the foundations that may have stood beneath one, both forms of substructure often appear to have been built in a similar style, with external walls of stone or stacked rocks and internal solid perpendicular supports of the same material infilled with earth or rubble. This building technique created an irregular grid of longitudinal and transverse walls that were frequently, but not always, interlocked, with multiple square or rectangular chambers.

The internal walls of these substructures do not always have a straightforward correlation with the plan of the building they supported. While many substructure walls are likely to have been load-bearing and thus placed according to the arrangement of walls and columns in the building above, the lower transverse walls in the rear portion of the substructure of Temple B at Pyrgi, for example, are thought to have been placed to counter the lateral thrust of the adjacent walls instead of directly supporting the superstructure and are thus not reflected in the reconstructed plan (Fig. 2) (Colonna 1970b: 276-278; cf. a similar proposal by Castagnoli

1968: 117-118 regarding the transverse walls in the rear lateral foundations of Temple A, and a recent re-evaluation of these walls in Temple B by Gentili 2013: 228-231). Similarly, the internal walls of the platform beneath the Ara della Regina temple at Tarquinia were initially part of a platform that extended beyond the walls of Temple I and II, and did not come to all lie beneath a building until two centuries after their construction; their inclusion in the original platform may have been intended to stabilise its mass (Bonghi Jovino 2010: 175-176; Bonghi Jovino and Bagnasco Gianni 2012: 22-26). Some of the intersecting longitudinal and transverse walls in the front part of the substructure of Temple A at Pyrgi are thought to have supported *antae* while others supported columns, although parts of each took no direct load. The solid parts of a substructure thus do not always provide a clear blueprint for the building that stood above.

At some sites, however, foundations were constructed and have been preserved in a manner that retains a fair outline of the temple they supported. The placement of the columns in the peristyle of the Temple of Tinia at Marzabotto, for example, can be reconstructed with relative certainty, as the bases of fourteen of its columns have survived through their incorporation into the basic structure of the podium during the initial phase of construction: the circles now visible on the surface of the foundations represent the top of up to four layers of supporting rocks (Fig. 3) (Sassatelli and Govi 2005: 23-25; Sassatelli 2009: 328). Column use and placement can also be indicated by fragments of stone shafts, bases, and capitals. At Pyrgi, remains of a peperino capital and small pieces of smooth tufo drums found near the west side of Temple A have been interpreted as signs that the building had a portico facing the sea (Colonna 1966: 275; Colonna 1970a: 43-44). The discovery of four cylindrical tufo blocks, each measuring approximately one metre in diameter, in the Belvedere sanctuary at Orvieto is thought to indicate that the Etruscan temple there had stone columns, and Giovanni Colonna has inferred the use of stone columns in the Portonaccio sanctuary at Veii from the presence of half of a smooth tufo column drum found beneath the Roman road and the discovery of fragments of a capital (Stefani 1953: 45-46, fig. 21 (*t* and *u*); Colonna 1998: 139; Colonna 2008: 61). Even small pieces can yield useful information, as the width of a column drum can be extrapolated from the outer curve of a fragment of sufficient size, as can an estimated taper, and possible column height can be calculated using Vitruvian proportions, albeit with the attendant risk of anachronisms (Colonna 1966: 274; MacIntosh Turfa and Steinmayer 1996: 12).

Symmetry may also be considered when reconstructing plans of temples with few indications of columns. For instance, if there is evidence that one side of a temple had six columns, then it is reasonable to propose that the other side would also have had six, based on the popular use of symmetrical plans and the practicalities of providing stable support for roof beams. The arrangement of the column bases at the Temple of Tinia at Marzabotto, however, indicates that an Etruscan temple could have a different number of columns at the front and back (Sassatelli and Govi 2005: 25; Sassatelli 2009: 326). Here the use of four columns at the front of the peristyle and five at the rear presumably achieved a balance between stability and an entrance with heightened visibility and prominence. Strict equivalency is thus a guideline rather than a hard and fast rule.

Additional allowances are made for plans with inexact right angles and alignments. At Orvieto, the Belvedere Temple is 16.3m wide at the front but 16.9m wide at the back, and its column bases, both extant and reconstructed, do not align squarely with the perimeter walls or the reconstructed dividing walls of the cella (Fig. 4) (Stopponi 1985: 81). Such inconsistency is not unusual in early Etrusco-Italic architecture. Many of the houses at Acquarossa had irregular trapezoidal plans or slightly curved walls (for examples, see Östenberg 1975: 73, 129, 223, 243), while the irregular perimeter walls of the courtyard of the Regia at Rome in multiple building phases (*Lexicon topographicum urbis Romae* iv: 189-92, s.v. "Regia," (R. T. Scott), with references) emphasise that buildings did not always have perfectly orthogonal plans.

With regard to internal walls, the position and form of blocks at a site may also indicate the presence of one or more temple cellas or *alae*. Excavations of the Portonaccio temple, for example, uncovered groups of blocks that appear to be the ruins or foundations of walls that divided the rear portion of the building into three parallel rooms, although they have since been moved to give visitors a clearer impression of a tripartite plan (Stefani 1953: 105-108; note the position of the blocks in Fig. 71 on p.105 compared to the 'restored' plan visible in Fig. 74 on p. 108). The reconstructed three-cellae plan of the Belvedere Temple at Orvieto is based upon the location of two stones in part of a shallow trench cut into the bedrock, a method used at the site to anchor the lowest stone courses of the foundations on a slope (Lake 1935: 98-99). Sometimes a tripartite plan is purely hypothetical: the internal walls of the temple in the Celle sanctuary at Civita Castellana, for example, are plausible but unverifiable (Colonna 1985a: 111, Fig. 5.2). These hypotheses are clearly marked as such in published plans of both sites.

Ground plans are further informed by reconstructions of roofs and basic engineering principles. Excavations of Etruscan temples frequently uncover terracotta tiles and roof decorations that provide evidence for the appearance of the superstructure and, by extension, the use of walls, columns, lintels, and beams necessary to support their weight. With an estimated weight of 60 kilograms per square meter for tiles and up to 85 kilograms per square meter for the underlying roof beams, the downward and outward pressure of tiled roofs required the presence of strong walls that would not bend outwards and timbers capable of spanning unsupported spaces without warping or breaking (Wikander 1993: 128-130; MacIntosh Turfa and Steinmayer 1996: 2; Damgaard Andersen 1998, i. 119-120; cf. Ulrich 2007: 134-136). The placement of walls and columns on a plan must consequently be configured with an adequate load-bearing capacity to give the roof and the building structural integrity.

The unknown extent to which Etruscan architects were familiar with trusses is a complicating factor. Trusses could have greatly increased potential intercolumniations and even removed the need for internal load-bearing columns or walls in some smaller buildings or porticoes (MacIntosh Turfa and Steinmayer 1996: 20-24 suggest that tie-beam trusses may have been in use by the sixth century BC, whereas Wikander 1988: 52 believes trusses were not required).⁴ This possibility means that reconstructed plans may also reflect the excavators' judgement on the likelihood that a trussed roof was used in place of a traditional post-and-lintel arrangement. Some plans effectively preclude the use of a particular roofing system. The tensile strength of timbers used in pre-Roman Italy, and thus their ability to span unsupported distances, is also difficult to measure without firm evidence of a plan that must have been successfully roofed. Although special carpentry joins may have enabled a number of shorter, thicker beams to span wider spaces than they would have been capable of on their own, this too assumes a certain level of woodworking and engineering competency that may have been rare in periods where builders had readier access to longer timbers. By way of example, the architrave of the façade of Temple A at Pyrgi could have been roofed with a single beam more than 20m long, but the difficulties of felling, shaping, and hoisting such an enormous length of wood have led one scholar to reconstruct the architrave with three joined beams with the greatest length of approximately 9.3m (Ulrich 2007: 128-129; cf. similar considerations informing reconstructions of the S. Omobono temple in Rome, by Ioppolo 1989: 34, and the material of the Archaic Temple of Jupiter Optimus Maximus, by Gjerstad 1960: 185). Sophisticated carpentry and design is by no means impossible or even unlikely in

ancient Etruria, but each element requires evaluation. Additional roofing details can sometimes be reconstructed from other evidence. Beam dimensions may be estimated from the heights of the covering terracotta revetment plaques, although not without controversy, and a massive column plaque, such as that from Temple A at Pyrgi (approximately 1.2 high x 1.4m wide), may be read as an indication of a particularly large ridgepole (MacIntosh Turfa and Steinmayer 1996: 13-16; Damgaard Andersen 1998, i: 122).⁵ In short, reconstructing a viable ground plan requires a number of judgements and calculations about factors that range from the load-bearing capacity of walls within foundations to timber supplies and the woodworking capabilities of ancient craftsmen.

Finally, reconstructions can draw on evidence from elsewhere. Comparanda are often cited and contribute to the impression of Etruscan architecture as a unified, coherent, and recognisable phenomenon distinct from its Hellenic or Near Eastern counterparts. Excavators of the Ara della Regina temples at Tarquinia have proposed that Temple I may have had supporting columns in the cella based on the analogous plan of an Archaic Greek temple at Locri-Marasà in Calabria (Bonghi Jovino and Bagnasco Gianni 2012: 26). Reconstructions of the Celle temple have drawn on partial comparisons with the Ara della Regina temples and the temple at Vulci (Colonna 1985a: 112), and the rooms at the back of Temple A at Pyrgi have been reconstructed in a manner similar to those thought to have been part of Temple C at Marzabotto, the Temple of the Dioscuri at Cori, and the temple at Segni (Colonna 1970a: 47). More generally, architectural styles and technical knowledge may be suggested by other types of archaeological evidence, for example votive models and the architectural details represented in funerary paintings at Tarquinia and the rock-hewn tombs at Cerveteri. Porticoes, internal rooms, king posts, protruding purlins, and wall plates have all been identified in such data (MacIntosh Turfa and Steinmayer 1996: 25-28; Damgaard Andersen 1998, i: 121-122). There are thus many sources of information for Etruscan architecture, and the key is manipulating them to fill the voids between foundations and tiles.

Admittedly, these guidelines do not always lead scholars to a clear answer. Enrico Stefani's excavations at the Portonaccio sanctuary at Veii during the mid-twentieth century illustrate the potential limits of archaeological evidence. His excavation report contains three reconstructions of the famous Temple. The first has no columns in the portico, the second is tetrastyle with another two columns *in antis*, and the third has a prostyle, double tetrastyle arrangement (Fig. 5). After stating that he had found no evidence of column foundations or bases, Stefani wrote that he would not hesitate to believe that the temple originally had a

double row of columns, with or without *antae*, because then it would precisely match Vitruvius' description (Stefani 1953: 107). Temple C at Marzabotto has also presented challenges. Like the Portonaccio temple, its remains lend themselves to a range of different reconstructions, and excavators have frequently had recourse to Vitruvius to support their plans (Vitali, Brizzolara et al. 2001: 43-45). Such situations gain an additional layer of complexity when only one reconstruction of a temple later appears in the comparative charts that are becoming increasingly common in studies of Etrusco-Italic architecture (Fig. 6) (for example, Cifani 2008, 291, Fig. 254; Mura Sommella 2009: 372, Fig. 26; Hopkins 2012: 127, Fig. 6.8). The hypotheses in some reconstructions, together with the chance that a plan was one of a range of possibilities proposed by the excavators, strongly cautions against the formation of broader arguments about ancient religion or society based upon the plans in these charts. One should accordingly always be mindful of the theories and methods informing any reconstruction.

IRRECONCILABLE DIFFERENCES?

Although plans reconstructed on the basis of archaeological evidence may reflect a number of inferences, it is clear that those of Etrusco-Italic temples do not match Vitruvius' formula either singularly or collectively. The sheer variety of temple plans in western central Italy is the first apparent incongruity. Reconstructions include peripteral and *peripteros sine postico* arrangements, columns that were prostyle or *in antis*, and plans with one or three cellas, sometimes behind a portico or with elongated proportions (Fig. 6). All those built in Etruria may be considered Etruscan temples. Such diversity does not contradict Vitruvius *per se*, merely the interpretation of his formula as a record of a widespread architectural norm. Recent translators and commentators have highlighted that Vitruvius was less of a rigid authoritarian than an advocate of variation and compromise (Rowland and Howe 1999: 15; Howe 2005), noting the propriety of a range of temple designs:

Haec autem genera propter usum sacrificiorum convertuntur. Non enim omnibus diis isdem rationibus aedes sunt faciundae, quod alius alia varietate sacrorum religionum habet effectus.

‘These types of temples are adapted for the purposes of sacrificial ritual. Temples should not be made according to the same principles for every god,

because each has its own particular procedure for sacred rituals (*De arch* 4.8.6).’

The *tuscanicae dispositiones* accordingly do not describe the one and only plan for Etrusco-Italic temples and, assuming Vitruvius had some knowledge of pre-Roman architecture, this is unlikely to have been the intention.

Dividing Etrusco-Italic temple plans that predate the fourth century BC into Etruscan and Latial groups also fails to identify a consistent Etruscan plan matching Vitruvius’ formula. While temples south of the Tiber appear to have made greater use of columns in peripteral and *peripteros sine postico* plans, possibly due to Greek influence from Campania and Magna Graecia, the construction of Temple A, a triple-cella temple with *antae* and portico, alongside Temple B, a single-cella peripteral temple, in the famous Etruscan sanctuary at Pyrgi suggests that different designs were embraced even at flagship Etruscan sites (Colonna 1970a). Small rooms have also been reconstructed behind the central or side cellas at Marzabotto (Temple C), Tarquinia (Ara dell Regina III), Pyrgi (Temple A), Caere (Vigna Parrocchiale), Rome (Capitoline Temple), though by no means in all Etruscan temples.

With regard to individual buildings, our current knowledge of Etrusco-Italic temples suggests that some temples may have been influential enough for Vitruvius to want to document and promulgate their design. The Archaic Temple of Jupiter Optimus Maximus on the Capitoline Hill in Rome is regarded by many scholars as a unique achievement in terms of its scale, building technology, and subsequent impact. As Edlund-Berry has noted, however, these reconstructed features are largely anomalous, which would question the value of an attempt by Vitruvius to extrapolate general rules from them (Edlund-Berry 2013a: 697). The placement of walls and columns in the original temple is also debated; the tendency for subsequent central Italic temples to have tetrastyle facades rather than the hexastyle design now favoured in reconstructions of the Archaic Capitoline Temple (Gjerstad 1960: 180-181; Cifani 2008: 104-106; Mura Sommella 2009; Hopkins 2012) further reduces the possibility that it established a definitive plan (Mura Sommella 2009: 343-344). Another contender is Temple III in the Ara della Regina sanctuary at Tarquinia. In the fourth century BC this building became the largest temple in Etruria. With a cella between *alae* and a portico with two rows of columns *in antis*, an elongated plan that was simplified but essentially reinforced with the construction of Temple IV, the temple approximates only some elements of Vitruvius’ text. A third possibility is the Portonaccio temple at Veii. This too is problematic.

As discussed above, the archaeological evidence did not allow Stefani to identify one probable plan, and the more recent discovery of a column fragment indicates the existence but not the number or placement of columns, making it impossible to state that Vitruvius was describing this temple. None of these temples can therefore be identified as a definitive source of inspiration.

Agnes Lake, Axel Boëthius, Ingrid Edlund-Berry, Helle Damgaard-Andersen, Gretchen Meyers, and Gregory Warden have already established that such discrepancies mean that Vitruvius cannot and should not be regarded as an accurate source about the plans of Etruscan cult buildings (Lake 1935; Boëthius and Ward-Perkins 1970: 30-31; Damgaard Andersen 1993a: 74; Edlund-Berry 1997: 78; Edlund-Berry 1998: 17-18; Meyers 2005: 67-68; Warden 2012: 88; Edlund-Berry 2013b: 562). These discrepancies can also be read as evidence of ignorance or misunderstanding on the part of Vitruvius, and consequently cited in support of either of the two longstanding interpretations of Vitruvius as a dilettante with little practical experience or, conversely, as an engineer with little theoretical sophistication (Rowland and Howe 1999: 15; cf. Vitruvius Pollio and Gros 1992: 178-179). It is possible, however, that this disjunction between text and reality accurately reflects Vitruvius' intentions as a competent architect. As the following section will show, these discrepancies may in fact be aids in clarifying the real function of the *tuscanicae dispositiones*.

TYPE AND TYPOLOGY

Despite the fact that Vitruvius does not appear to have recorded a formula followed by all Etruscan temple builders or one used in a specific temple, his proportional plan continues to be referenced in many discussions of Etruscan temples and cited in studies by scholars less immediately familiar with the remains of Etruscan and Etrusco-Italic cult buildings. This situation creates a need to find a way of interpreting Vitruvius' text that simultaneously acknowledges the degree to which he is embedded in the field and his limited relevance. The solution may lie in the fact that his formula can be reconciled with the archaeological evidence by the simple means of interpreting the *tuscanicae dispositiones* in light of modern architectural theory, as an architectural type.

Along with function and tectonics, type is one of the fundamental elements of the modern discipline of architecture, and as such it plays an important role in prescriptive, proscriptive, and critical architectural theory and treatises (Nesbitt 1996: 17-19, 44). A true architectural

type is defined as a diagrammatic, idealised, or generic representation of a general solution to an architectural problem. As an abstraction, it has been likened to an indistinct image or a sign, and to deep structure in language (Quatremère de Quincy 2000: 254 (originally 1825); Nesbitt 1996: 44).⁶ It has also been described as ‘the interior structure of a form or...a principle which contains the possibility of infinite formal variation and further structural modification’ (Argan 1996: 243). A type thus offers architects a theoretical template that requires adaption in order to produce a physical object that meets particular contextual needs. Where a model should be exactly reproduced, a type offers metaphorical inspiration.

It is relevant to note here that the word ‘type’ is used differently in some English translations of Vitruvius’ text, generally in a sense more consistent with common English usage than the abstract architectural theory. Rowland, for example, uses ‘type’ as a translation for Vitruvius’ Latin word *genus*, meaning a category of objects with shared characteristics, which is preferable to the Renaissance translation of *genus* as ‘order’ (Rowland 2005: 21, 32-33). I am not advocating an alternative translation, but an alternative interpretative context to bridge the gap between theory and practice: modern architectural theory, with its specific definition of ‘type,’ offers a legitimate and useful way to understand what the *tuscanicae dispositiones* may have actually described. Vitruvius’ formula does not precisely reflect any temple yet found. Recurring elements of the plans do, however, echo his specifications. The temples at S. Omobono in Rome, at SS. Stimate in Velletri, and in the Portonaccio sanctuary at Veii all have relatively square foundations and possible porticoes. Where there are indications of colonnades or internal walls, they often suggest a lateral division of the superstructure into three sections, evenly or unevenly spaced. If temples in pre-Roman central Italy are divided into those with ‘Greek’ peripteral and *peripteros sine postico* arrangements, and those with ‘mid-Italic’ plans with square or short oblong plans and columns restricted to the portico, then reconstructions of the latter do appear to be variations on a common theme. While this may partly stem from the use of comparanda and Vitruvius’ text in reconstructions, it is equally possible that Etruscan architects effectively adapted a type rather than followed a model.

The idea that Vitruvius intended the *tuscanicae dispositiones* to serve as a type also fits with growing recognition that the Roman architect positively encouraged flexibility and adaption of his precepts. Thomas Noble Howe has pointed out that not one of Vitruvius’ prescriptions for objects ranging from catapults to column capitals contains sufficient detail to render it fully, and that this incompleteness is deliberate as it makes allowances for a variety of

building sites and circumstances as well as an architect's own creativity (Howe 2005: 43; cf. Wilson Jones 2000: 38; Gros 2009: 65; Cuomo 2011: 328). Flexibility and adaptation are positively encouraged:

... tum etiam acuminis est proprium providere ad naturam loci aut usum aut speciem, adiectionibus temperaturas efficere, cum de symmetria sit detractum aut adiectum...

‘...it is the special skill of a gifted architect to provide for the nature of the site, or the building's appearance, or its function, and make adjustments by subtractions or additions... (*De arch* 6.2.1).’

And again:

Nec tamen in omnibus theatris symmetriae ad omnis rationes et effectus possunt respondere, sed oportet architectum animadvertere, quibus proportionibus necesse sit sequi symmetriam et quibus ad loci naturam aut magnitudinem operis temperari.

‘Now it is not possible to have the proportional systems for every theatre carried out according to every principle and to every effect. Instead, it is up to the architect to note in which dimensions it will be necessary to pursue symmetry and in which to make adjustments according to the nature of the site or the size of the project (*De arch*. 5.6.7).’

Interestingly, this vision of the architect who balances the abstract with the concrete may also give an insight into the intended audience. Vitruvius may have been writing for readers who already had sufficient technical knowledge, such as builders, or did not need it, for example patrons and financiers. In Book 1 he addresses himself to *non modo aedificantibus sed etiam omnibus sapientibus* ‘...not only those who intend to build, but all learned men (*De arch* 1.1.18).’ Such a broad readership would arguably derive more benefit from guidelines than rigid blueprints.

At the start of his treatise Vitruvius warns that architects who *ratiocinationibus et litteris solis confisi fuerunt, umbram non rem persecuti videntur* ‘... [have] placed their trust entirely in theory and in writings seem to have chased after a shadow, not something real (*De arch*. 1.1.2).’ To my mind it is logical to recall this when reading the *tuscanicae dispositiones*, and

consequently to understand them as a theory that should be balanced with our knowledge, however limited, of actual buildings. The proportions could be followed exactly or adapted according to circumstances and taste. As such they provide a useful rule of thumb, a distillation of the real, varied, and once-magnificent buildings of pre-Roman Italy, which can only truly be understood in combination with close study of the archaeological record. Excavations admittedly give rise to uncertainty, but enable us, like Roman architects, to exercise our personal and informed creativity. Vitruvius would arguably expect no less.

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ENDNOTES

BIBLIOGRAPHY

CAPTIONS

Figure 1. Plan representing the *tuscanicae dispositiones*.

Figure 2. Pyrgi, Temple B, c.510 BC. Diagram showing (A) remains of the substructure (after Colonna 1970: Fig.191; (B) load-bearing walls (after Colonna 1970: Fig. 195; (C) the reconstructed plan (after Colonna 2005, iv: 2337, Tav. I, all with permission).

Figure 3. Plan of the remains of the Temple of Tinia at Marzabotto, c.480-470 BC (from Sassatelli and Govi 2005: 14, Fig. 5, with permission).

Figure 4. Plan of the Belvedere Temple at Orvieto, early fifth century BC (after Stopponi 1985: 82, Fig. 4.7, with permission).

Figure 5. Hypothetical reconstructions of the Portonaccio Temple at Veii, c. 510 BC (from Stefani 1953: 106, Fig. 72, © 1953 Biblioteca Apostolica Vaticana).

Figure 6. Scale-renderings of thirteen preserved temples from central Italy, c. 510-450 BC

(design by J. N. Hopkins, with permission).

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¹ All Latin texts in this paper are taken from the Loeb edition of *Vitruvius: On Architecture*, translated by F. Granger (Harvard University Press, Cambridge, Mass. 1933).

² All English translations in this paper are taken from Rowland and Howe 1999 .

³ On Vitruvius' sources see Vitruvius *De arch.* 7 praef. 10-5 and Rowland 2005: 23-27.

⁴ On the possible use of trusses by Greek architects in the sixth century BC, see Hodge 1960: 38-44 and Klein 1998 .

⁵ Ulrich 2007: 133, agrees with Colonna's suggestion in 1970: 57 that multiple beams may have been fastened together to form the ridgepole.

⁶ Quatremère de Quincy's first defined the term in such a way in 1825: 'The word *type* presents less the image of a thing to copy or imitate completely, than the idea of an element which must itself serve as a rule for the model.' Quatremère de Quincy 2000: 254.