

The Construction of Pompeii's Sacred Buildings and their Role within the Local Building Industry

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The Temple of Isis is a small podium temple located in the theatre district of Pompeii.¹ It has rather narrow front stairs and two annexes on either side of the cella. The plaster is preserved in large parts of the walls' surface, but it is still visible that almost the whole temple is built from brick.² According to an inscription, the temple was rebuilt from the foundations up after the earthquake in 62 AD. This paper gives an insight into material estimations for this temple and illustrates with a few simple examples how a comparison with other sacred buildings can help us to understand their economic implications.³

Table 1 lists the main building materials used for the temple.⁴ Focusing on the sheer volume, the largest amount is 153 m³ of caementicium from the foundations as well as the cores of the podium and the walls. It consists of a mixture of rubble stones and some ceramic fragments bound by mortar. Due to the aggregate's irregularity in shape and size, the aggregate to mortar ratio cannot be measured, but only estimated e.g. with a ratio of 60 to 40%. Further, the aggregate can consist of a variety of stone types and the actual composition can also only be an estimation.⁵ A distinction has been made between the opus caementicium bodies of the foundations and the podium and the core of the cella's brick walls. The latter is of limited dimensions and thus, ceramic fragments are better suited to intertwine with the pointed bricks than the large rubble stones usually used as aggregates in Pompeii.

Although carved stone, respectively Nocera tuff in this case, was used selectively, as steps, stylobate and pedestal stones and for the pronaos columns, its total volume of nearly 11 m³ exceeds the overall volume of bricks. It seems that when (re-) building the temple, brick was the preferred building material over stone, as at least some of the stone parts were reused⁶ and decorative parts were made of brick instead of tuff.

How do these observations relate to Pompeii's sacred architecture? In total, there are nine sacred buildings in the excavated area within the city-walls of Pompeii. With a ground area of around 80 m², the temple of Isis is a rather small Pompeian temple and it is the only one having solely brick walls. The so-called temple of Vespasian – also of modest dimensions – has a brick cella, but large parts of the podium are of opus incertum. Further, in the Temple of Fortuna Augusta and the so-called Sacellum bricks are used as quoins for opus incertum walls as well as for niche and podium structures.

Therefore, different approaches to building materials and techniques might be visible here. On the one hand, the temple of Isis clearly favors brick materials over carved stone materials. Whereas other temples show a restricted use of bricks to locations, where their structural advantage can be exploited, i.e. corners and angles. Thus, bricks

Location	Bulk materials	Volume
Foundations and temple podium	Opus caementicium:	138 m ³
	• Sarno limestone	74 m ³ (90% of the aggregate)
	• Compact lava	4 m ³ (10% of the aggregate)
	• Nocera tuff	4 m ³ (10% of the aggregate)
	• Mortar	55 m ³ (40% of overall volume)
	Bricks	1 m ³ (1638 pieces)
	Carved stone (Nocera tuff)	7 m ³ (104 pieces)
Cella walls	Opus caementicium:	14 m ³
	• Ceramic fragments	6 m ³ (70% of the aggregate)
	• Sarno limestone	2 m ³ (20% of the aggregate)
	• Compact lava	1 m ³ (10% of the aggregate)
	• Mortar	5 m ³ (40% of overall volume)
		Bricks
	Carved stone (Nocera tuff)	4 m ³ (38 pieces)

Table 1: List of building materials and their volumes from the Temple of Isis in Pompeii.

adopt the role small ashlar blocks formerly inhabited⁷ and not the role as main material for constructing walls. One explanation for this might be the high level of flexibility that comes with rubble wall techniques. There are different types of stones common in Pompeii: gray and yellow tuff, volcanic scoria, so called Sarno-limestone, and compact lava.⁸ They could be used for foundations, cores, and walls in different compositions, coming directly from the quarry or from reused stone blocks. Opposed to this, there are several processes involved in producing bricks. Further, the production depended on several products, like clay, wood, water, and the production cycles were bound to seasons. This might – in some cases – outweigh the standardized building and structural freedom that characterize opus testaceum.

Based on these observations, material and labour calculations have the potential to further support theories that try to explain the processes and characteristics of a local building industry.⁹

Notes

¹ Blanc et al. 2000.

² The surrounding structures show a range of different building techniques, but they are generally not considered in this paper.

³ The considerations and figures are preliminary results of an ongoing PhD project.

⁴ The foundations and all inner parts (caementicium core of the podium and the walls) as well as those parts of the walls concealed by plaster are reconstructed. The roof structure including the entablature has been omitted.

⁵ In this case, the estimation is based on a small visible stretch of the foundations beneath the back wall of the podium and on observations made on other exposed wall cores in Pompeii.

⁶ The capitals of the pilasters were definitely reused, as they were built in broken and then plastered over. Other stone parts might also very well be reused.

⁷ Sacred buildings dating from the 2nd and 1st cent. BC (Temples of Jupiter, Apollo, and Asclepios) mostly have opus incertum walls enclosed by opus vittatum (mixtum).

⁸ Kastenmeier et al. 2012.

⁹ The method has first been applied to Roman buildings by DeLaine 1997.

References

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