

## **The Great Theatre at Pompeii and a Pompeian Fresco**

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As part of an ongoing programme of research the 3D Visualisation Centre at the University of Warwick has been using 3D computer modelling to evaluate and extend our understanding of the relationship between Pompeian frescos and actual Roman theatre practice.

The Centre's work includes studies of several frescos depicting possible stage structures, taken from buildings in Pompeii and nearby Oplontis (modern-day Torre Anunziata):

- the House of Apollo
- the House of the Ara Maxima
- the House of the Cryptoporticus
- the House of Marcus Lucretius Fronto
- the House of Obellius Firmus
- the House of Pinarius Cerialis
- the House of Siricus
- the House of the Vettii
- the Villa at Oplontis

the National Archaeological Museum at Naples:

- a depiction of Medea and the Peliades

and sites on the Palatine in Rome:

- the House of Augustus
- the House of Livia

Researchers in the team are currently preparing detailed analyses individual and collections of paintings for publication. This article describes one particular study: testing the hypothesis that there is a correlation between a fresco in the Terme del Sarno and the stage of the Great Theatre at Pompeii.

The fresco in the so-called Terme del Sarno depicts a number of nude human figures who appear to be celebrating victories in athletic contests. However, the structure in which they are displayed strongly resembles a Roman theatrical stage of the period, and does not obviously correspond to any other known type of structure.



**Plate 1** The Terme del Sarno Fresco

Human figures stand behind opened or partially opened doors on a *podium* connected by steps to a stage, which is elevated above ground level by an articulated *pulpitum* painted to resemble white marble.



**Plate 2** Detail of *pulpitum*



**Plate 3** Detail of *podium* with steps, supporting extensive architectural structures

The *podium* provides the base for a busy combination of aedicules, hemicycles and projections painted in the red-orange-gold spectrum, defined and punctuated by a small forest of slender columns. The walls and doors rising from the *podium* rather surprisingly reach only to elbow height of the athletes, while above and beyond them, picked out in shades of blue, lies an elegant and delicately detailed array of receding architectural vistas. Theatrical masks commonly appear as a decorative element in Roman wall paintings, but the unusually large scale of the masks placed upon half-walls at either extent of this fresco—about twice the size that any of the depicted human figures could wear—suggest that they may in addition be designed to amplify the theatrical associations of the setting.





**Plate 4** Detail of fresco showing mask

The hypothesis that part of the structure of the scene depicted in the fresco seems closely to match parts of the extant physical remains of the Great Theatre at Pompeii was first put forward by Von Cube in 1906 (see also Bieber, 1961: 232).



**Plate 5** The Great Theatre, Pompeii

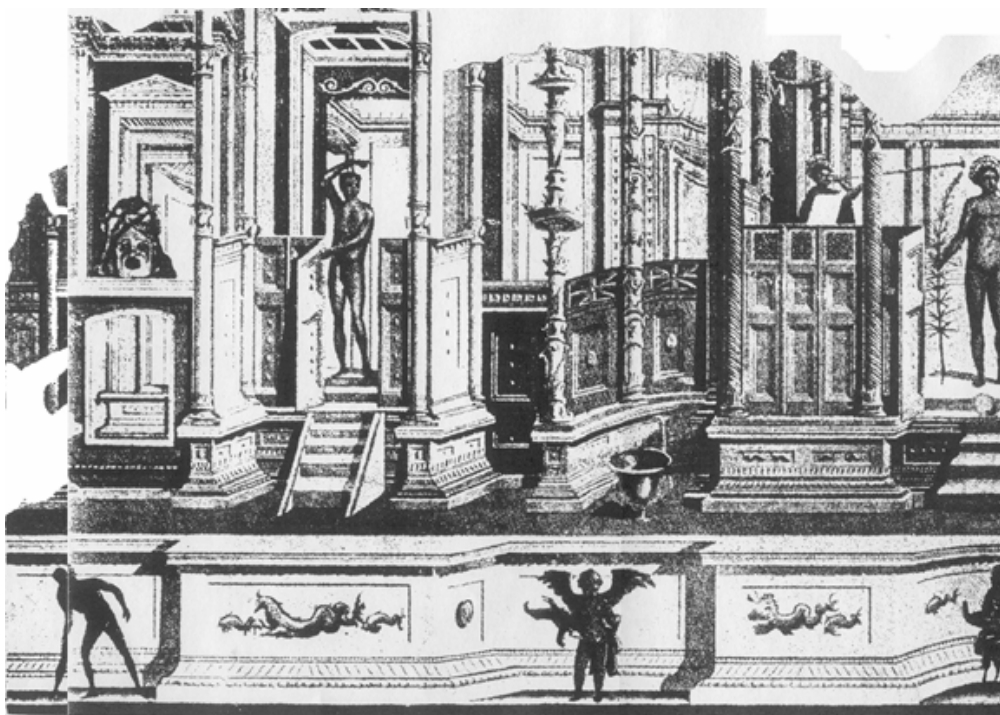
This article gives a non-technical overview of the problem and our responses to it, rather than providing a detailed breakdown of the extensive, complex calculations involved. Its purpose is to establish for a readership interested in ancient drama in performance that modern 3D visualisation techniques have an important part to play in the assessment of existing, as well as the advancement of new, research hypotheses in this area.

### ***Summary of the Reconstruction Process***

All reconstruction processes require two initial reference items:

- (a) a plan or plans upon which to base the reconstruction
- (b) a starting point to give a fixed point of reference for scale.

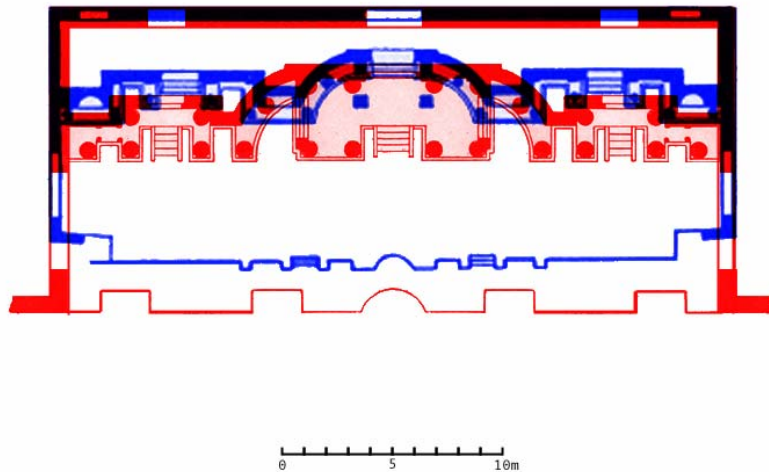
Using these two items, it is possible to extend the two-dimensional perspectival depiction into three dimensions, and to interpolate this new three-dimensional structure into the physical space of the actual theatre.



**Plate 6** Drawing of fresco, from von Cube, op cit. plate 4

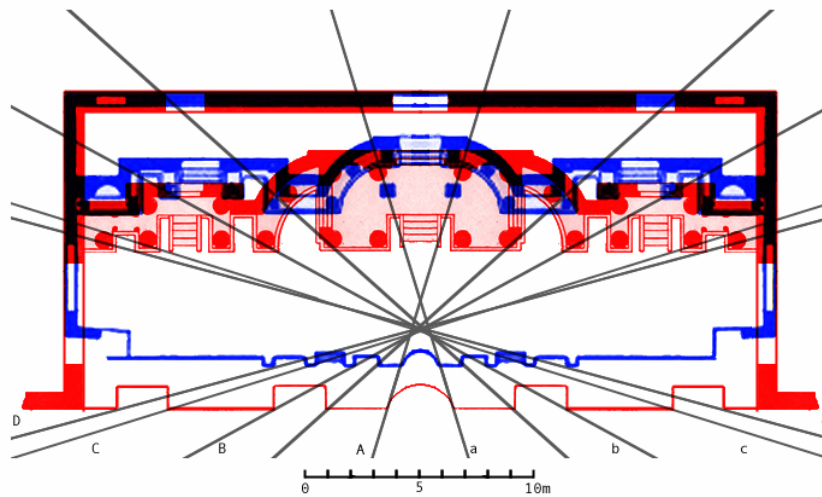
Human representations within frescos cannot be assumed to be to scale; they vary in size apparently relative to their importance within the scene. If they are intended to depict statues, the question of scale is equally impossible to gauge. Therefore an alternative point of reference to human figures must be found.

Figure 1, below, shows a plan of the Great Theatre at Pompeii (Maiuri 1951, reproduced in Bieber 1961, fig. 608) overlaid with Von Cube's hypothetical, schematic plan of the structure depicted in the Terme del Sarno fresco (red).



**Fig. 1** Overlaid plans of the Great Theatre at Pompei (blue), and the structure depicted in the Terme del Sarno fresco (red)

When the *pulpitum* of the actual theatre is lined up with the *pulpitum* depicted in the fresco plan, the relationship between the two structures' perspectival lines can be traced, as in Figure 2 below.



**Fig. 2** Perspectival lines correlating the Great Theatre at Pompei (blue) with the structure depicted in the Terme del Sarno fresco (red)

Unlike the actual theatre, in the fresco the articulated section of the *pulpitum* and the *frons scaenae* are same width. I therefore propose a viewing position which, in the actual theatre, would achieve this effect as the perspective implied by the fresco. This gives a point of reference for depth and scale. Taking this element as the 0 point on the horizontal axis, it is possible to start calculations.

Working from the 'front' of the depiction backwards a number of observations and comparisons between the fresco and the theatre can be made.

Using Vitruvian formulae, the height of the fresco's *pulpitum* should be approximately 1.147m. Placing the fresco's *pulpitum* into the corrected perspective gives it a height of 1.3m, within only 15cms of the Vitruvian 'ideal'. (The fresco painter's perspectival adjustments, if uncorrected, would have implied a *pulpitum* of twice this height: 2.6m.)



The fresco's stage appears to have a platform in the middle of the curved niche which roughly equates to the two stand-alone podia/column bases in front of the central opening in the actual theatre's *frons scaenae*. On the criterion of Vitruvius, these columns (and the others depicted) appear either to be either non-structural elements, or to have been aesthetically altered in their proportions for the sake of the fresco. (There is no evidence in Vitruvius to suggest that the proportions of wooden architecture normally differed from those of masonry.)

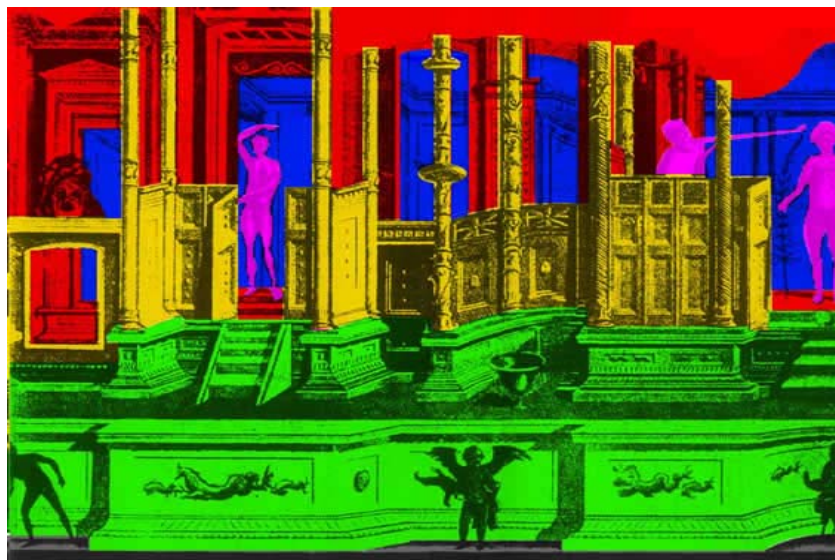
The purpose of doorways in a *frons scaenae* is to allow an actor movement between the fore-stage and rear-stage areas and to conceal back stage movements. Similarly, non-doorway panels allow actors to move about the rear of the stage unseen. Adjusted, both doors and panels in the fresco are sufficiently high to hide the stooped actor, or to reveal the head and shoulders of an actor if required - a device often associated with ornamental masks on frescos of this nature, and indeed visible on the extremes of this fresco.

### ***Real vs. Fantastical***

The next task is to attempt to establish where the rear wall of the stage would fall if the fresco depiction were to match the real stage. The rear stage wall in the fresco seems to show a number of piercings. Except for the central and two flanking doorways, these are not represented as physical entities on either of the plans. Contrasting the fresco with other frescos, it is noted that the colours are somewhat muted against the vibrancy of the physical structures, suggesting that this is a receding view or that it is somewhat 'unreal' (e.g. aerial perspective or painted panels).

The positioning of scenic elements appears to become more perspectively warped the further vertically or horizontally removed they are from the centre of the structure, as if the image were painted on a convex surface, bulging towards the viewer in the centre. The columns themselves do not lean, but the decorations behind them do, indicating that the columns have been very deliberately 'corrected' by the Roman artists to produce a perspectively coherent framework through which a perspectively distorted world can be glimpsed. The effect becomes more pronounced the further into the scene one looks.

The viewer of the fresco is therefore presented with varying degrees of reality that recede into the depiction and away from the viewer. If we were to map these 'zones' of reality onto the fresco by colour coding, they could be presented as follows:



**Fig. 3** Identified 'zones of reality'

**Green Zone:** This area of the fresco has very close correlation to both the physical remains of the Great Theatre and to Vitruvius' formulae for theatre construction.

**Yellow Zone:** This area appears to be exaggerated in the vertical axis if the elements are to follow Vitruvian ideals and human scaling.

**Red Zone:** While the elements in each of the red sections (demarcated by the yellow columns) are in proportion to each other, all of the red sections together do not constitute a proportionally or structurally unified area.

**Blue Zone:** These areas show elements, or panel-paintings of depicting elements, that extend beyond the rear wall of the stage building.

**Purple Zone:** Human depictions.

This manipulation of scale, which will have been more immediately apparent to a Roman viewer familiar with the scale of the real-world correlatives of the painted elements, signals the painting's refusal to be bound by the laws of mimetic representation. Rather than paint what the eye sees, the artist displays what the mind's eye imagines, foregrounding what is most important, not necessarily what is most visible. It is worth noting in this regard that the human figures are the only elements which are not integrated in perspective or scale with any other zone within the composition.

The recession of these zones ever further into the fantastical is analogous to the levels of reality and fantasy encountered upon actual scaenarum frontes during theatrical performances: behind the *frons scaenae* are the most wild, fantastical materials out of which myths come bodied forth into the reality of the audience.

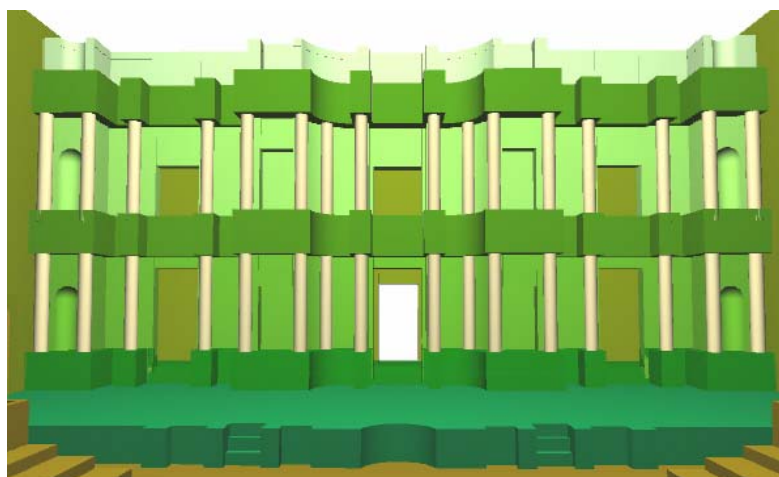
### ***Perspectival Analysis of Red Zone***

The Red Zone is made up of a number of compartments distributed across the width of the painting, separated by Yellow Zone columns. Each of the two well-preserved Red Zone compartments is perspectively consistent within itself, but not with its neighbour, nor with the perspective of other Zones.

Perspectival inconsistency between compartments allows the painter incrementally to squash and stretch the non-rectangular subject matter into the rectangular 'frame' provided by the wall, while concealing the distortions from the viewer, thereby giving the impression of a 'realistic' structure, by ensuring that each local section is perspectively consistent. In each case, the perspective leads the viewer deeper into the composition, before the view is blocked by architectural elements in the next Zone.

### ***Comparing the Reconstructions***

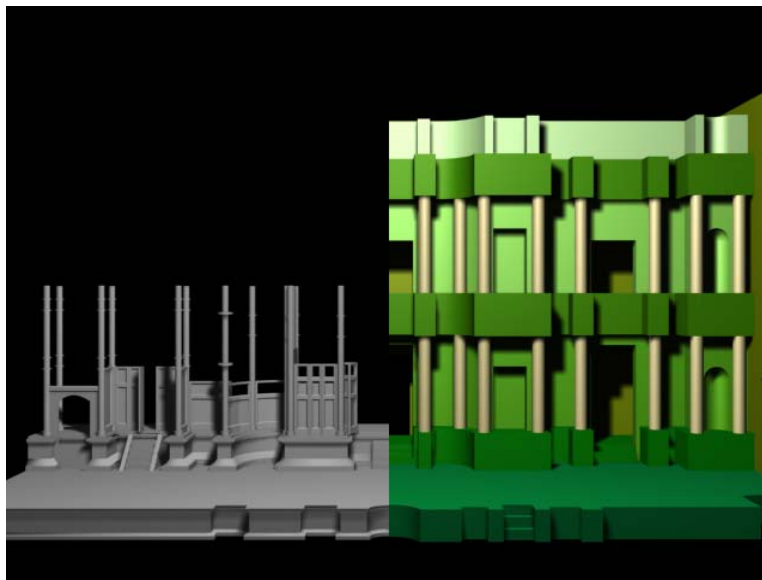
The following images compare our visualisation of the structure depicted in the fresco at the Terme del Sarno with a 3D reconstruction of the *frons scaenae* of the Great Theatre at Pompeii based on the archaeological evidence and the formulae given by Vitruvius in *De Architectura*. (Note, the colours used in the *frons scaenae* visualisation are purely schematic, enabling the different components of the structure more clearly to be distinguished than a photo-realistic model would allow.)



**Fig. 4** Schematic visualisation of the *frons scaenae* of the Great Theatre at Pompeii

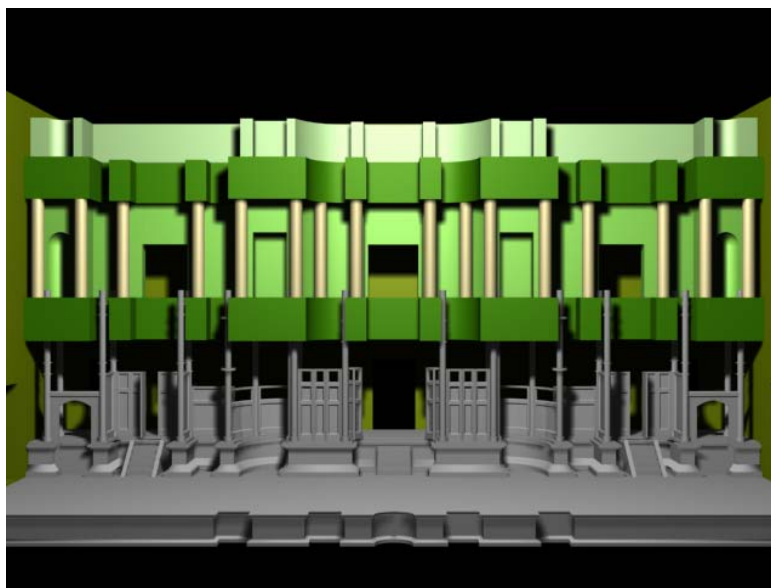
If both of the structures are placed side by side, as shown in Figure 5, it is possible to identify the commonalities between them.



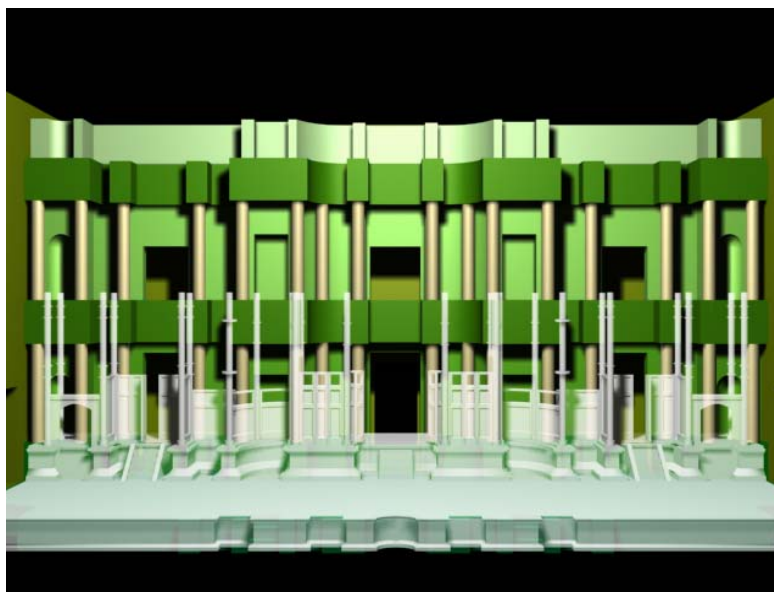


**Fig. 5** Combined fresco visualisation (left) and reconstruction of the *frons scaenae* of the Great Theatre (right)

While clearly not a perfect match, it is clear that there are marked similarities between both structures, and when the lower part of the theatre is removed and the fresco structure inserted (as shown in Figure 6) the result is not aesthetically incoherent. The most noticeable difference is the position of the fresco columns which are not only too tall as has been noted, but also do not align directly with the upper tier of the stage itself.



**Fig. 6** Combined visualisation of fresco (below) and *frons scaenae* of the Great Theatre (above)



**Fig. 7** Visualisation of fresco overlaid upon *frons scaenae* of the Great Theatre

## **Conclusion**

This investigation of possible correlations between the Terme del Sarno fresco and the stage of the Great Theatre at Pompeii contributes to our understanding of some of the complex perspectival distortions that Roman artists used when evoking architectural, and specifically theatrical, structures. While it can not be conclusively said that the structure depicted at the Terme del Sarno depicts the *frons scaenae* of the Great Theatre, it is fair to say that there are several elements in the fresco that bear a strong resemblance to the architecture of this particular Theatre, which, for Roman viewers, may have suggested a direct relationship between the two. It may be that, in doing so, the fresco drew upon common aesthetic principles according to which theatres were being built in the first century A.D. For the fresco's viewers the Great Theatre at Pompeii would have provided the most immediate and natural point of reference for a 'theatrical' composition, which appears to invite the Roman viewer to associate victors in athletic contests with the heroic mythological figures that appeared on the stage in the great public theatres.

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