Evaluating Gismondi's Representation of Portus, the Port of Imperial Rome

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Abstract

This paper introduces the Portus Project, an inter-disciplinary collaborative fieldwork project focussed on the ancient port of Rome. It demonstrates the use that is being made of a plaster model of the port produced by Italo Gismondi in 1937, initially as a means for focussing re-evaluations of the various illustrative and other data available relating to the port's topography, and then as a source for background and comparative digital geometric data within the project's work to remodel the entire site. The Portus Project employs three-dimensional computer graphics throughout the data gathering, analysis, modelling and representation phases and the paper considers the role that Gismondi's model is playing in the development and evaluation of such a process.

Key words: *PORTUS, GISMONDI, LASER SCANNING*

1. Introduction

The Portus Project encompasses a co-ordinated programme of fieldwork – excavation, site and regional survey – being undertaken at the site of Portus, the port of Imperial Rome. The project had its genesis in an extensive survey of the site and its eastern hinterland that began in 1998 (KEAY ET AL., 2005). Computation has been at the heart both of the initial survey and of the ongoing project. In addition to a range of data management and analytical components, the project's computational work focuses on digital three dimensional data collection strategies. It employs a range of laser scanning, photogrammetric, and conventional survey approaches, in addition to integrated volumetric geophysics (KEAY ET AL., 2008), and object recording via polynomial texture mapping (MALZBENDER ET AL., 2001). Within this the presentation of the reconstructed port landscape by Italo Gismondi in the form of a plaster model, hereafter the plastico, provided a precursor to our own work in 2005 to produce a simply rendered, popular series of views of the port complex (KEAY, 2006). Gismondi produced the plastico of the site of Portus for the Mostra Augustea of 1937 at Rome (VERDUCHI, 2007).

The plastico is now located in the Museo della Via Ostiense at the Porta Sant Paolo in Rome. The plastico developed Gismondi's ideas about the layout of the port, based upon Lanciani's 1867 reconstruction of the site, but taking into account Lugli's archaeological fieldwork in the 1930s (LUGLI & FILIBEK, 1935).

2. Gismondi's Plastico

Italo Gismondi was an architect with a career that extended between 1910 and 1954 and brought him into contact with a range of archaeological sites in Italy and North Africa. He began by working in the Ufficio degli Scavi di Ostia, before moving on to the Soprintendenza alle Antchità di Roma. Although his main expertise was as an architect, he also had an outstanding ability to analyze ancient buildings and represent them both in plan, elevation and plastico with great clarity. Little is known about his working practices in producing the plastico for the Mostra Augustea of 1937, except that he drew a number of sections, elevations and plans of standing buildings prior to the plan (1933) that was to accompany Lugli's archaeological synthesis on Portus (LUGLI & FILIBECK 1935). He based his work on an aggiornamento of Lanciani's vision of the port, and seems to have worked largely on his own, without much liaison with other archaeologists to produce what is in effect a fairly personal view of the port (VERDUCHI 2007: 248). However his great familiarity with standing buildings at Ostia and in Rome ensured that the plastico continues to offer a powerful insight into the site's topology, if not its 'original' form. The publication of major works since his plan and plastico were completed (TESTAGUZZA 1970; KEAY ET AL 2005) have demonstrated that they are now wrong in certain respects, particularly in terms of the polemical area of the Porto di Claudio. Nevertheless his model is still of great value in providing both an overall vision of the ancient port, and an example of the model building process from one of the form's greatest proponents.

Following the example of the Rome Reborn project (FRISCHER ET AL. 2008; GUIDI ET AL., 2005) the Portus Project has derived scan data from the Portus plastico in order to learn from, record and digitally augment it.

The work of the Rome Reborn project has demonstrated the considerable benefits that can be gained from detailed examination, recording and reapplication of Gismondi's painstaking efforts. At Portus therefore we have begun to examine his vision and understanding of the site as represented in his plan and plastico, and in particular the hypothesised process of the plastico's design and construction – certainly involving visits to extant remains and consultation of the then accepted canon of Portus planimetric and illustrative data. Such an analysis, although only recently begun, fits very closely within the wider context of the Portus Project's emphasis on computer

graphic modelling as an interpretative tool, in addition to a representative medium.

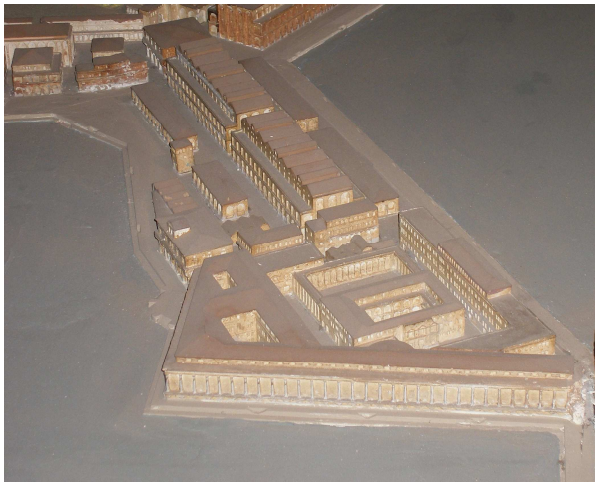

Figure 1. Photograph of the Gismondi plastico*: detail of excavation area and 'Imperial Palace'*

The Gismondi plastico has been made more accessible via the scanning process and made a locus for hypothesis building and debate, integrating diverse datasets both from our own fieldwork and from previous representations of the site. Furthermore, the creation of a virtual version of the plastico means that the original static interpretation of the site can be easily updated to incorporate new archaeological evidence, including the data from current excavations, building, topographic and building surveys, terrestrial and marine geophysics. It can then be associated with descriptive, contextual information.

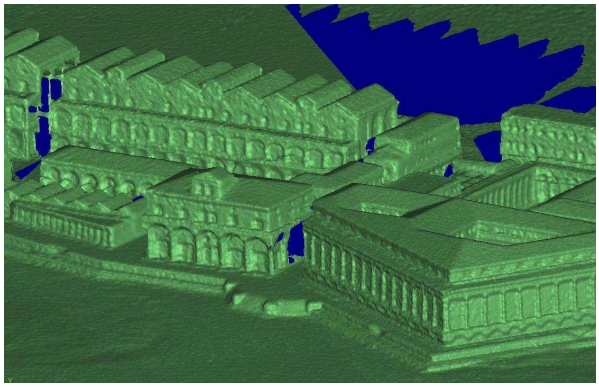

Figure 2. Raw dataset from scan of Gismondi plastico*: detail of excavation area and 'Imperial Palace'*

3. Representations of Portus

Portus is an enormous site, with its inner Trajanic basin alone large enough to encompass many Roman provincial towns. The ground plan, topography and dense vegetation make it impossible to obtain a clear understanding of the site from any single vantage point. It is perhaps for this reason, and also due to the interesting arrangement of maritime, mercantile and administrative components, that such a variety of modelled, painted and drawn representations have been produced of Portus.

Key views with which Gismondi is likely to have been familiar include the speculative, aerial reconstruction produced in 1554 by Pirro Ligorio, and the equally impressive Vatican colour renderings produced in the 1580s by Dante (see MALAFARINA, 2005). Subsequent reconstructions such as those produced in 1827 by Canina, and in 1842 by Garrez (GUILLEMAIN, 2002) continue this combination of the factual and speculative, creating emotive images that attempt to convey the site's huge expanse and significance. Alongside such artistic representations of landscapes lie a range of building-focussed plans and impressions, such as those by Gismondi himself, Testaguzza (1970), Keay et al. (2005) and Reddé and Golvin (2008).

4. Computer Graphics

Roman archaeology and computer graphics have had a long association. Whether on grounds of perceived regularity of form, monumentality, ubiquity of appreciation by diverse audiences, or a host of other influences, the Roman world is one more than any other that is represented through digital, frequently photorealistic CGI approaches. Increasingly their representative value has been enhanced through the use of computer graphics with an analytical context, with examples of direct relevance to the current paper including *Imaging Ancient Rome* (HASELBERGER & HUMPHREY, 2006), the Appia Antica Project (FORTE ET AL., 2005), work on the Colosseum (GAIANI ET AL., 2000) and at Herculaneum (HAPPA ET AL., 2009).

Such three-dimensional modelling is employed throughout the archaeological process at Portus. It forms the framework for the capture and management of born-digital field records, it underlies on and off-site discussions relating to the material excavated, it facilitates detailed analysis of potential original forms and their use in antiquity, and offers a mode for representing project findings to a wide audience. A familiarity with the Gismondi plastico has influenced each of these interconnected aspects. As a representative medium the model provides a starting point for digital overviews of the site. As a focus for debate it enables spatially-referenced interactions between participants, albeit at a distance from the modelled elements. As a constant, monolithic interpretation of the site it encourages variability in the corresponding CGI representations produced, whilst supporting the need for a sense of consistent purpose: the model, digital or plaster, is a means to convey information and as such cannot always achieve clarity alongside a self-consciously 'authenticated' record.

The area of the so-called 'Palazzo Imperiale' and the adjacent magazzini provides a case study for this relationship between digital approaches and the plastico. In particular the models of the Grandi Magazzini di Settimio Severo, which were the subject of an idealised reconstruction by Gismondi, have now been digitally reproduced following an extensive and laborious process. The creation of the virtual model was directed by a single project member, in order to maintain a consistent representative strategy. He drew extensively on Lugli in terms of plan, and the Gismondi plastico in terms of the overall volume,

and outer decoration. Taking this as the starting point the wider team began a critical reappraisal of the modelled exterior, incorporating specialist knowledge derived from other comparable structures (including RICKMAN, 1971 and Pers. Comm.), alternative illustrations, and an engineering-focussed assessment of the interior structure.

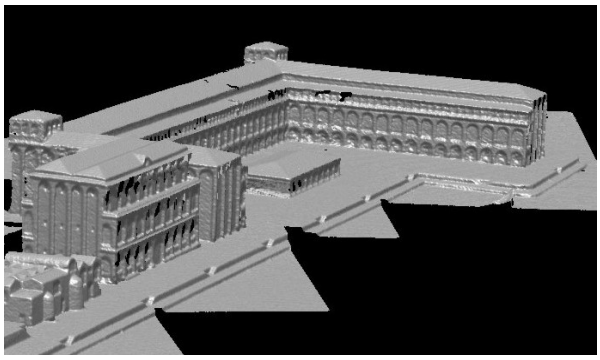

Figure 3. Raw dataset from scan of Gismondi plastico*: detail of magassini adjacent to the 'Imperial Palace'*

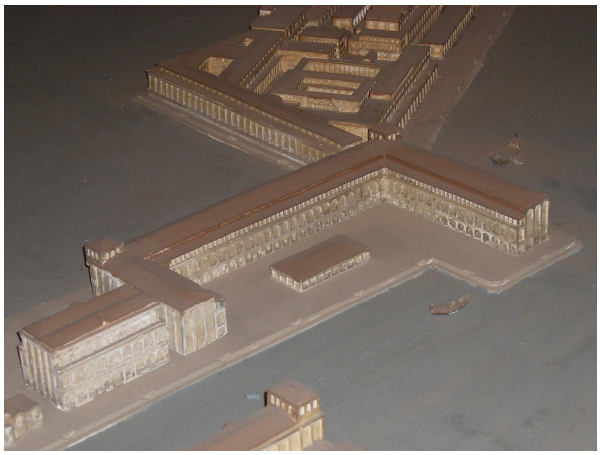

Figure 4. Photograph of the Gismondi plastico*: detail of magassini adjacent to the 'Imperial Palace'*

The creation of this digital model represented a significant step towards its expansion towards a detailed reconstruction of the entire site, paralleling that of the plastico and the work of Ligorio and others. This process has begun to bring in to focus what one might expect from an 'original' view of the port. We would however argue that the digital equivalent to Gismondi's art is similarly situated in a creative endeavour tied to the present. As such the plastico, the Dante murals and contemporary representations mark not a trajectory, with steadily improving success in retracing the lines of the port's past, but rather alternative styles equally at odds with an idea of a pristine, attainable 'Roman Portus'. As Dante and Gismondi conflate multiple phases in the site's development to single views, so digital modelling in its general application is a result of choice and amalgamation – in terms of time of day and year, weather, density of population, ascribed activity zones and so on. The myth of the digital reconstruction to our minds is that it provides infinite flexibility, whilst in practical use it is similarly reliant on a series of informed simplifications. This applies whether the process is one of procedural simulation – within which the functional components are predefined – or gradual, hands-on development.

Figure 5. Hypothetical reconstruction of the magassini adjacent to the 'Imperial Palace'

Considerable benefits of the digital modelling of Portus are already being seen. Furthermore, as the fieldwork continues, as the participants become ever more familiar with three-dimensional recording and representation, and when the whole complex of phased archaeology and architecture can be seen as an integrated whole, it is to be hoped that an even greater sense of the site and its surroundings through time can be realised. The computer offers the potential to remix the past in ways hitherto impossible – to re-phase at will, to ascribe contextual links on the basis of any criteria. Visualisation is necessarily at the core of this process and there can be little doubt that new understandings of the port will emerge directly as a consequence of the models produced.

Figure 6. Alternative hypothetical reconstruction of the magazzini adjacent to the 'Imperial Palace'

5. Conclusions

Models of every form have much to offer to the understanding of Portus. Whether the Roman world is presented in plaster or wood, paint or graphite, the experience that has been built up through generations of equating a simulation with some indistinct reality is continuously brought to bear.

The consumption of models of all forms is clearly intertwined. Thus, the plastico and the digital model equally encourage both human-scale and reading-perspective (POLLARD & GILLINGS, 1998) engagements with the site, and both equally emphasise both the specifics of certain buildings and the site as a whole. The Gismondi plastico, much as any computer graphic simulation, is a consequence of subjective representative and archaeological decisions. We believe that further comparison with earlier representations will indicate a development of what might be termed a Portus archetype – a sense of what the port was, and how it functioned topologically. The ongoing computer graphic modelling work draws upon the same inspirations, whilst offering the new possibilities and pitfalls of visual fidelity, detail, attempted transparency, and the potential for multiple versions of this extraordinary place.

Acknowledgements

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