

LAURENTINE SHORE PROJECT VICUS AUGUSTANUS & ROME'S MARITIME FAÇADE

1.0.0. PROJECT CONTEXT

The **study area** is located some 7 kms south of the Tibermouth at Ostia, the port of Rome, within the modern Castelfusano, Castelporziano and Capocotta estates. For a brief period in the early 20th century all three estates formed a Royal hunting lodge, but Castelfusano now belongs to the Comune di Roma (and large areas are being built over), whereas Castelporziano and Capocotta are now integrated into a single entity, managed by the Office of the President of Italy (Segretariato Generale della Presidenza della Repubblica).

Castelporziano and **Capocotta** between them cover some 5,900 ha (14,500 acres), extending from almost 8 kms of the modern seashore in a large tract of countryside, which reaches up to 12 kms inland (see **Map**, fig. A). In the inland reaches are farmlands and pastures (breeding Maremma cattle and horses), the castle of Castelporziano (dating from the 10th century), and the presidential villa; the rest is covered by forests of various kinds from commercial pine plantations to mixed woodlands (the native Mediterranean *macchia*) of shrubs and tree-shrubs (erica, phylleria, ilex or holm oak, lentiscus, myrtle, juniper, broom, various cypresses, arbutus or strawberry-trees, laurel) together with deciduous woods, mostly quercus of one kind or another (beech, common oak, turkey oak, holm oak, cork, bay oak), with elm, white poplar, ash, hornbeam and other birches. Hunting was banned in 1978 and the forests abound with wildlife: boar, fallow deer, roe deer 'Italicus', and red deer, hares, wild rabbits, badgers, pine and beech martens, porcupines, polecats, weasels, and foxes. Birdlife includes wood-pigeons, stock-doves, turtledoves, woodcocks, hoopoes, quail, snipe, as well as ducks and waders (for whom new lakes have been made along the coastal zone).

SEGRETARIATO GENERALE DELLA PRESIDENZA DELLA REPUBBLICA

TENUTA DI CASTELPORZIANO

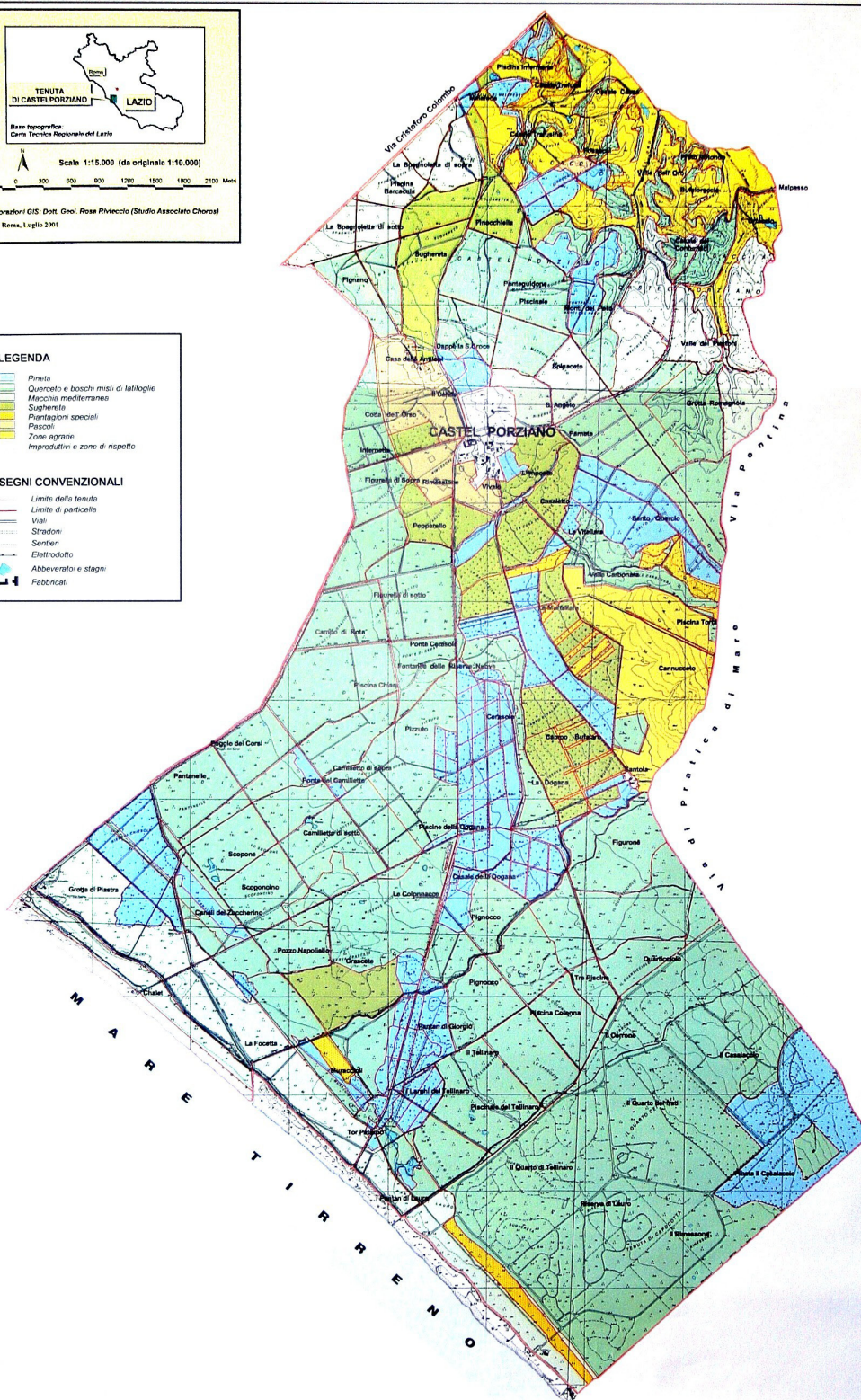
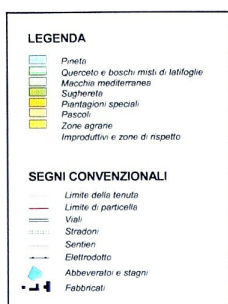
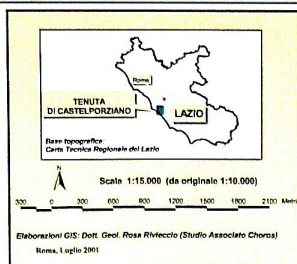


Fig. A. Castelporziano and Capocotta. Modern estate map (R. Riviaccio, Studio Choros, Rome 2001)

History of archaeological research before 1983.

Excavations in the area are recorded on various occasions, generally looking for the most famous Roman villa on the Laurentine shore, that of Pliny the Younger, which he described in great detail in a letter of about AD 100 (Pliny, *Letters* II,17).

In **1630**, or thereabouts, in Castelporziano, at the locality known as Tor Paterno, site of a huge Imperial seaside villa, a large Roman bath building was planned and a view of its ruins drawn for Cardinal Francesco Barberini (with a second copy for Cassiano dal Pozzo), thinking it was a villa, and probably that of Pliny: see I. Campbell, *The Paper Museum of Cassiano dal Pozzo. A.IX Ancient Roman Topography and Architecture vol. 3* (London 2004), pp. 669-72, nos 248-9.

In **1713**, in Castelfusano, Marcello Sacchetti excavated at the locality called La Palombara, site of a large Roman villa believed at the time (and by many still today) to be that of Pliny the Younger.

In **1777-80** a later owner of Castelfusano Prince Sigismondo Chigi got permission from his neighbour the Baron del Nero of Castelporziano, to excavate at Tor Paterno, finding lots of sculpture and valuable marbles, including two imperial portrait busts now in the Royal Ontario Museum, Toronto.

In **1783** Pope Pius VI ordered more excavations at Tor Paterno, finding quantities of marble.

Between **1802** and **1819** more excavations were made at La Palombara in Castelfusano by Sigismondo Chigi's son Agostino, with unknown results. Many other sites were probably ransacked for marble and statuary in the same period. The topographer Antonio Nibby explored all three estates in the 1820s and noted piles of marble lined up along the shore, ready to be taken off by boat.

In **1865** Pietro Rosa, Superintendent of excavations in the province of Rome, announced to Rome's Institute of Archaeological Correspondence that the Duke of Grazioli, who had purchased Castelporziano in 1823, had discovered the *Vicus Augustanus* – a small town known about from various inscriptions found at Ostia - in his grounds. More excavations there followed after 1872 (when Grazioli sold Castelporziano to the new Kingdom of Italy), continuing at least until 1911.

In the years **1900-1913** Queen Elena of Montenegro, wife of Victor Emmanuel III and a skilled amateur photographer, explored several other sites.

In March **1901** and April-May **1903** the famous Roman archaeologist and topographer Rodolfo Lanciani () with the young Thomas Ashby (to be director of the British School at Rome from 1905-28) walked the length and breadth of Castelporziano and Castelfusano (the latter leased by the Royal family from the Chigi in 1889). In **1903** Lanciani published an article on the history and topography of the ager Laurens, with a map of the road system and the first attempt to reconstruct the villas on the Laurentine shore (*Monumenti antichi* XIII, 1903, pls. XII-XIII fig 3).

In **1906**, after the House of Savoy had bought the Capocotta estate from the Borghese family, a villa site just within its north-west boundary was excavated and named the 'Villa of the Discobolos' for marble statue found in its garden. Lanciani's account of the dig, which appeared in the *Monumenti antichi* of that same year, was the first – and remains the only – Laurentine villa to have been published in any detail.

In **1911** Lanciani sent a brief description of a second villa excavated in Capocotta to the London magazine *The Athenaeum* (no. 4374, p.249)

In **1913** another communication from Lanciani to *The Athenaeum* announced that Queen Elena had excavated a 'beautifully preserved establishment for the raising of pigs, each pen being a model of cleanliness and rational arrangement' and also a majore cemetery of the 8th-7th century BC.

More sites must have been explored in Castelporziano and Capocotta during the 1920s and 1930s, when a medieval farmhouse (used as Royal kennels) which had occupied the ruins of the bath building at Tor Paterno was also removed, but the written record is silent.

In **1933** the Castelfusano estate and its 17th century villa was bought by the local government of Rome from the Chigi family and part of the grounds became a public park.

In **1934** Antonio Maria Colini cleared and reconstructed the course of the *via Severiana*, the ancient coast road from Ostia to Terracina, as it ran through the park, and in **1935-6** re-opened the excavations of the 'Villa of Pliny' at La Palombara.

In **1939** a small early Christian basilical tomb was excavated between the villa and the road and work also began on a second villa site, the 'Villa del Confine', so-called because its mounds straddle the boundary between Castefusano and Castelporziano.

In **1953-4** A.M. Colini, Espedito Tempesta and Lucos Cozza did further work on both the Castelfusano villa sites, but nothing was published at the time and the park became a notorious venue for drug-dealing and prostitution, its archaeological sites subject to vandalism.

Upon the abolition of the monarchy in 1946 Castelporziano had been re-posessed by the State and became a presidential reserve instead. Archaeology was not high on the estate management's agenda for the next three decades, with one notable exception. In **1968-69** Gabriella Simonazzi Masarich, who had family connections with the President's Office, undertook a study of the Vicus Augustanus in Castelporziano for her undergraduate dissertation at the University of Rome, making a general site plan and a catalogue of the epigraphic sources, published in the *Monumenti antichi* (vol. XLVIII) in **1973**.

Capocotta was retained by the Savoia family in the post-war period and was about to be sold off for speculative building development in the 1970s until a campaign mounted by Italia Nostra succeeded in securing its purchase by the Italian State, to be annexed to Castelporziano in 1985.

In **1983**, Dr Giovanni Emiliani, newly appointed director of Castelporziano, contacted Dr Valnea Santamaria Scrinari of the local archaeological superintendency at Ostia (Soprintendenza archeologica di Ostia). Dr Emiliani was drawing up a comprehensive development plan for the estate and its resources, archaeological as well as natural. Several of its important archaeological sites had been excavated in the 18th, 19th and early 20th centuries, as noted above, but all had languished in obscurity since the 1930s, increasingly overgrown by natural and man-made forests, and in some cases were at serious risk from the forces of vegetation. The Ostia superintendent Dr Scrinari brought together a consortium of individuals and institutions to undertake a general archaeological survey of the estate, combined with more detailed study and conservation of four specific sites, which were entrusted to particular teams.

The Castelporziano Survey (CPS)

Field survey in the Castelporziano estate is no easy matter. The density of the forest canopy renders aerial and satellite photography of little use, while the ground level forest (the *sottobosco*) can be equally thick and impenetrable, obstructing visibility and access on foot. The need to avoid disturbing the resident wildlife during their breeding seasons and periods of drought, and to protect the internal security of the estate as a presidential residence at all times, impose yet further restrictions on movement on the ground, and survey from the air.

In **1983-5** a number of sites in the interior and upland areas adjacent to the Castle and the President's villa were plotted, but they were mostly those already known to the estate staff, who could lead the surveyors directly to them, and little further work has been possible in those areas since then. By default, fieldwork has concentrated on the seaward reaches, where concerns about security are less pressing, the forest cover relatively lighter, and the archaeology more self-evident.

During **1986-1990** some 27 'sites' were mapped within a two kilometre-deep strip along the length of the modern coastline inside Castelporziano, and in **1989** Dr Anna Maria Ramieri also made a fresh start on the 'Villa of Pliny' in Castefusano. The basic results were published as a 'carta archeologica' in 1998.



More sites have been found in the same zones since and others will undoubtedly be found in the future. The string of Roman sites continues into Capocotta, but apart from the Villa of the Discobolos, which was mapped in **1999**, they await detailed survey and investigation.

Although the comprehensive archaeological survey of the interior of Castelporziano has yet to be achieved, and cannot be actively planned for at the moment, it remains an essential objective for the longer term.

The coastal zone

Most of the concentrations of Roman building material and upstanding walls identified in the 1986-90 survey of the littoral zone cluster along a single line, which coincides more or less with a modern road, Via del Telefono. The gaps between the sites are defined simply by the lack of visible material on the surface. This may only mean that buried structures have not been disturbed by excavations in the past, and some distinct sites may in fact be much larger than they appear and/or connected with others.

A second line of sites, of an earlier age, may be distinguished further inland, at much longer intervals, consisting of small, low mounds covered with shell, some charcoal, and early Iron Age pottery (9th-8th century BC), but no building material. There is one site of the kind in Castelfusano (the adjacent estate to the north-west), one in Castelporziano (near the Chalet crossroads) and perhaps another at Tor Paterno; the next is at Pratica di Mare (ancient *Lavinium*).

With the exception of the Vicus (see below), all the various nuclei in the first zone are currently understood to represent maritime villas – élite residences built directly on the ancient seafront. Each has a different character: in size, shape, orientation, building materials, complexity of layout, decoration, number of phases and length of occupation. Each can be expected to have had its own individual history as well as being part of a larger pattern of development.

Public archaeology

From its beginning the project had also a second agenda, to prepare some of the archaeology for presentation to the public, to whom the estate was intending to be more open than in the past and had begun to organize visits for schools and special interest groups.

Three major sets of ruins were singled out to be placed on a new 'archaeological' trail, all located in the seaward area of the estate, where the ancient coastline runs about 450-200 metres further inland relative to the modern one:

1. **Tor Paterno:** a medieval coastal fort ('Tor' = Tower), which defended a landing place or harbour, now vanished (the shoreline has long since receded, the tower was shelled as target practice by Nelson and the British fleet in 1809). What survives today are the ruins of a Roman bath house, with a 17th-century church in the middle, surrounded by many other remains, some exposed by excavations, some still deeply buried. The site is a huge maritime villa, probably that called Laurentum, owned and developed by the emperors of Rome from Augustus to Commodus. Subsequently passing into Church hands, in the 8th century it may have become the centre of a papal estate also known as Laurentum. The remains are indicated in some detail (at a scale of 1:20000) on Pietro Rosa's archaeological map of Latium c. 1860, and in

unpublished notes by Rodolfo Lanciani and Thomas Ashby, but in 1983 were otherwise unknown.

2. **Aqueduct** : the remains of an ancient Roman aqueduct leading towards Tor Paterno, visible from about 1.5 kms inland, where it first emerges above ground as a linear mound (a concrete vault), then rising on a series of arcades of increasing height, mostly collapsed or collapsing. It was last studied in the late 17th century by Raffaele Fabretti.

3. **'Vicus Augustanus'**: the largest site after Tor Paterno, with the most to see in the form of standing walls, exposed by excavations from 1865 to ca. 1913. It is not a villa, but a small town, and the findspot of one of the largest figurative black-and-white mosaics from Italy, which was lifted in 1910 and taken to the National Roman Museum in Rome, and has now been returned to the estate. No detailed records of the old excavations have yet been found (if indeed they were kept) and in 1983 the site was known only from the brief description and plan published by Gabriella Simonazzi Masarich in *Monumenti antichi dell'Accademia dei Lincei* XVII (1973).

Archaeological work at each of the sites was assigned to separate teams, Tor Paterno to Dr Giuseppina Lauro (local inspector from the Ostia Superintendency), the Aqueduct to the late Dr Vanni Mannucci (architect at the Ostia Superintendency), the Vicus Augustanus to Amanda Claridge, assistant director of the British School at Rome. A fourth site, the Villa Magna, close to the Vicus, was entrusted to Eugenia Salza Prina Ricotti for particular study in pursuit of proof of her hypothesis that it is the site of the Laurentine villa of Pliny the Younger.

The first archaeological interventions on the three main sites were directed at substantial upstanding structures which could be consolidated and conserved by building firms contracted by the Ostia Superintendency, taking advantage of special funds available from the EEC. In 1983-88 a short section of the aqueduct, much of the bath building at Tor Paterno, and parts of the largest bath-building at the Vicus Augustanus were reinforced and reconstructed.

Funds for such interventions were limited, however, and their long-term effectiveness in the local conditions started to be questioned as the forest took hold on all three sites again. It became apparent that regular pruning and weeding etc. was going to be required anyway to keep the vegetation at bay, and that such maintenance might be sufficient in itself to avoid serious damage. At the same time, it was decided that visitors would have to be accompanied in coaches and the only component of the archaeological trail which could in practice be accessed, safely maintained and visited was the complex at Tor Paterno.

4. **Archaeological Museum**

A museum in which to display a selection of archaeological finds from the estate was an integral part of the plans for public access. Initially it was going to be located at Tor Paterno, in the de-commissioned church of S. Filippo, which was renovated for the purpose, but the idea was abandoned for various reasons. Instead, a block located within the castle was refurbished so that it could accommodate a museum on the ground floor, together with a conservation laboratory, archive space and administrative offices. Inaugurated in 2001, seven galleries present the history of

archaeology in the estate, including a late bronze age tomb from Decima and various finds transferred from the storerooms of the National Roman Museum, followed by a range of paintings, sculpture, architectural elements, terracottas, coins and small objects discovered during the current project at the Vicus and the villas along the Laurentine shore. Installed nearby in the Castle gardens is the great black-and-white mosaic, which was lifted from the Vicus and taken to the National Roman Museum in Rome in 1910 but was returned to Castelporziano in 2002.

Managing the archaeology of the estate

In 1992 the President's Office set up a new consultancy to advise on and monitor the cultural heritage and artistic patrimony of the Quirinal palace in Rome and other properties, including the castle and churches at Castelporziano, and the archaeological remains within the estate. Dr Giuseppina Lauro was seconded from the Ostia Archaeological Superintendency to the new office with special responsibility for archaeology at Castelporziano.

Each year, within the framework of larger 5-year plans, the particular programme of fieldwork that is to be followed is submitted for the approval of the Superintendency and the President's Office, taking both local estate priorities and the wider interests of academic research into consideration.

When Amanda Claridge left the British School at Rome in 1994, the Castelporziano collaboration was allowed to go with her, first to Oxford and then to Royal Holloway. The project remained affiliated to British School at Rome, which continued to lend assistance, both financially and in kind. Funds for specific elements of the project were provided by grants from the Roman Society, the Craven Fund, British Academy.

Archive and Reporting

The project archives all belong to the Soprintendenza archeologica di Ostia, but by special dispensation are currently housed locally on the Castelporziano estate. Most of the loose finds are stored in an annexe at Tor Paterno; the written/graphic/photographic records are kept in the Castle, in the offices of the new Museum.

Copyright and publication rights on all archaeological findings rest with the Italian state. Since its inception, the Castelporziano project has had its own journal, *Castelporziano*, published by the Italian Ministry of Culture, the Superintendency of Ostia and the President's Office, where it can report at intervals on work and results. Three issues have appeared (*I*: 1985, *II*:1988, *III*:1998), the fourth was ready for press in 2000 but its publication is still pending. In the interim, by kind concession, some of the articles have been made available online.

VICUS AUGUSTANUS (CPI)

Against the background of the larger project, the recording and analysis of the Vicus has had its own particular history, the progress and personnel of which are documented in the year-by-year journal, team photos and sequence of site maps appended here. The following notes explain the general methodology employed and the nature of the records which form the digitized site archive.

Phase 1: survey and excavations (1984-1998)

Fieldwork at the Vicus during Phase 1 was of three types: building surveys (in plan and elevation), surface and geophysical surveys, and test excavations, sometimes operating concurrently in a given season or at different times, depending on objectives, available manpower and other resources.

Building surveys: all structures visible on the surface, as left exposed by previous excavations, were recorded in plan and elevation. The density of vegetation (even after low level clearance) made it virtually impossible to use optical instruments except for very short distances, so a grid was laid out with ranging poles and tapes, and marked with wooden stakes in the ground, using the modern road (Via del Telefono) which transects the site, as a baseline, with three offsets at 50, 90 and 120 m (the intervals determined by the density of trees). Planning thereafter was by measuring tapes and triangulation.

In practice two general site plans were made, the first as rapidly as possible, to verify Masarich's plan of 1973, and see if anything could be added to it for the general archaeological survey. The second, in the light of the first, aimed to record and analyse the buildings in much more detail.

1:100 Site Plan, executed during 1984-1986, comprises four sheets. The letter codes A-K, designating particular areas of the site, were assigned during this phase. Building A, the first to be examined and the largest structure on the site, has only been planned at 1:100.

1:50 Site Plan, mainly executed during 1987-1994, in association with extensive cleaning of walls and a series of small sondages or *saggi* to find floor levels and clarify other significant features of the buildings (thresholds etc.) obscured by topsoil accumulated since the original excavations.

Drawn as twelve sheets of various shapes and sizes, the 1:50 plans were traced and inked by Rob Birbeck in 1992, in two overlaying sets, one set containing the detail of walls and the position of the sondages, the second set with the walls blank, showing the detail of floors and other features exposed by the sondages.

1:50 Sections and elevations. Work began on these in 1984-6, in tandem with the 1:100 site plan, but only a few parts of the site (mainly building A and zone F) were open enough for the purpose, and much of the potentially most significant data (floor levels, thresholds etc) could not be included. The difficulties were one of the reasons for doing a new site plan at 1:50, with more clearance and tests, as described above, and the majority of the 1:50 sections and elevations were produced during that second operation. Inked versions were made of all, except those from the 1994 campaign.

Orthogonal and axonometric reconstructions. On the basis of the building survey, to which she was also a contributor, Sheila Gibson (1920-2002) made a series of detailed individual reconstructions of buildings A, C and F, and of the whole site, in orthogonal monochrome and watercoloured axonometric views.

Surface surveys were generally directed at determining the maximum extent of the vicus, its relationship to the ancient coast road which runs behind (Via Severiana) and to the ancient shoreline in front, and its boundaries to either side, all of which were doubtful in 1984 (and are not entirely resolved even now). The course of the road was traceable in the vicinity by a slight dip and a scatter of its basalt paving stones. The position of the coastline was apparently marked by a high dune ridge, visible in air photographs as a line of higher trees, beyond which there is no sign of building debris. The limits of the site towards the road and to either side, along the shore, are

especially difficult to detect on the surface, since the scatter of building debris is continuous.

Geophysical surveys were tried on various occasions from 1985 to 1996, of different kinds, with different equipment by different specialists. The surface conditions are challenging, and provided some potentially useful experiments from the technical point of view, but no method proved particularly successful and the sub-surface archaeology remained obscure.

Excavations were carried out on a limited scale, to answer specific questions which could not be answered by other means. The first, Trench S in 1985-7, fixed the exact position of the Via Severiana and its relationship to the built-up area of the Vicus, sampling the depth of its associated archaeological deposits. Trench L, in 1987 examined the composition of the dune on the seaward side of the site, and established that Roman buildings continued beneath it, though reduced to their foundations. Trench M, in 1989, and other small soundings in 1990, provided a date for the medieval re-occupation on the site. Trenches P, R, and T investigated street levels and the network of drains at the centre of the town, their depth and chronology. Trench P also provided samples of sand from stratified levels beneath the vicus for Dr Helen Rendell, then of the University of Sussex, who was experimenting with the luminescence dating of sand, and its application in the study of dune formation. Trench SA, in 1996-8, collected a second stratified assemblage of material from midden deposits beyond the Via Severiana. Trench X in 1995-8 excavated a complete sequence of street levels nearer the centre of the site, with special attention to the uppermost levels, which represent the final phase of Roman occupation (and are generally missing in the areas exposed by older excavations).

No fieldwork took place in 1999 or 2000, which were devoted to finds' study and the preparation of reports for Castelporziano IV. In 2001 a short season rectified the omission of the two temples H1 and H2 from the 1:50 survey.

Phase 2 (2002-5) Villas of the Laurentine Shore

In 2000 Amanda Claridge joined the Classics Department at Royal Holloway University of London and, in collaboration with her colleague Dr Jari Pakkanen and consultation with Dr Giuseppina Lauro, a new five-year plan was drawn up. With the help of student trainees, some additional work on the Vicus would be combined with the enhancement of the larger mapping project, more or less in abeyance since 1992. The first Castelporziano Survey in 1986-90 had attempted only the most basic level of information for each site (size, shape, orientation, building materials); much could now be added and corrected. In the next stage analysis would be taken to a higher level, employing the methodology applied at the Vicus, within the framework of new Total Station contour surveys, mapping the configuration of the ground as well as the visible archaeological remains, organising the data in a geographical information system (GIS).

Since 2003 several years of drought, combined with an increase in the numbers of deer and boar, have greatly reduced the low level vegetation. Visibility and mobility among the ruins along the Roman coastline have become relatively easier than was the case in the 1980s and 90s.

Castelporziano Survey enhancement: Zone west of Vicus

The first area tackled was the zone between the Vicus and the boundary of the modern estate with the adjacent park of Castelfusano, a distance of some 400 metres, in which the 1986-1990 survey had distinguished three sites (**B1-B2-B3**). In the course of 2002-4, Total Station, gridded surface and geophysical surveys were carried out, together with some test trenches, which identified site **B2** as a long double portico connecting the buildings of site **B3** with those of site **B1**. High-density Total Station survey in particular, though labour-intensive, produced some remarkable results when visualised in a three-dimensional digital elevation model (DEM), created in ArcView.

Vicus

As often happens, the excavation of Trench X across street B in 1995-8, while answering some questions, had raised others. One was what had caused the site to be abandoned, seemingly quite abruptly, c. AD 430, after a period of intense activity? The latest level of occupation in the buildings on the seaward side of the street had been buried under a thick deposit of clean, windblown sand – presumably from the beach. Had the coastline changed? Another (perhaps related) puzzle was the precise form and function of the adjacent Building Y, a rectangular structure whose outer walls were partially visible on the surface. We could tell that it was constructed during the final phase of occupation on the site, but not what its internal layout and purpose were.

In 2002-2005, trenches YG, YH and YGE examined the internal stratigraphy of building Y to levels beneath its foundations, together with the deposits outside it to either side.

Geomorphology

Helen Rendell, who had worked on the dating of sands at the Vicus in the 1980s, visited again in 2002 to advise on the geomorphological issues raised by Trench X, and identified the high ridge that extends into the site a few metres away from trench X as a parabolic dune. In 2003 she returned, to sample the sand deposits associated with the long portico B2, and it became increasingly clear that, with the aid of the new methodology for topographical modelling under Castelporziano's particular conditions, there was enormous scope for more advanced geomorphological research regarding the nature of the Roman shoreline and its environment.

In 2003-4 Amanda Claridge and Helen Rendell made a successful bid for a research grant from the AHRC so as to be able to combine further archaeological fieldwork and analysis of existing data with new geomorphological and palaeoenvironmental sampling and analysis.

Phase 3 (2005-10) Rome's Maritime Façade

The research funded by the AHRC grant (18211) 'Rome's Maritime Façade: Archaeology and Geomorphology at Castelporziano' had the following aims and objectives:

- definition of a broad chronological framework for the advance of the Tyrrhenian coast south of the Tiber from c. 10,000 BC to AD 2000
- analysis of the palaeoenvironmental changes associated with that advance

- investigation of the relationships between the geomorphology and the pattern of human settlement in the coastal zone during the Roman period (100 BC-AD500)
- creation of a GIS database for current and future archaeological and palaeoenvironmental research in the area to integrate different categories of data and provide an understanding of the spatial development of the area through time.

Dr **Peter Rose**, who completed his doctorate at Reading University early in 2006, was appointed to a post-doctoral Research Assistantship and started in March 2006, working on the topographical survey for the DEM, setting up the project GIS, creating the project website, as well as digitizing the older project archives. When Peter resigned to take up a post at Kings College London, he was replaced from January to September 2009 by Dr **James Andrews**, also from Reading, who saw the project through to completion in February 2010.

Two PhD studentships supervised by Prof. Rendell at Loughborough University were awarded to **Andrew Bicket** and **Fiona Brown**, who began work in September 2006, Bicket on the chronology of the coastal dune system and sea level change, Brown on the environmental evidence. They both successfully completed their research and submitted their doctorates within the period of the grant.

Fieldwork

For the duration of this third phase fieldwork was primarily directed towards the AHRC-funded research objectives.

Geomorphological coring and botanical sampling was undertaken in three transects, one at the Vicus and in the zone west of the Vicus, one at Tor Paterno and the third at a point midway between, in association with three sites identified in the 1992 archaeological survey. The latter sites (**D1**, **D5**, **D6**) are the earliest as yet identified in the coastal zone. **D1** is a group of low sandy mounds covered with Late Bronze Age/early Iron Age pottery, on the seaward side of a series of inland lagoons. **D5** and **D6** are large rectangular depressions containing seasonal lakes, with traces of walling and other debris outcropping on the surface, dating from the late 2nd or 1st century BC. Both appear to have been coastal fish tanks associated with a coastal villa. The cores from the lake bottoms and modern wells in the hinterland of these sites produced especially detailed and closely dateable sequences of data. In 2007-9 the topographical survey and DEM was extended to include both sites and some of the surrounding area (though unfortunately it was not possible to reach inland as far as **D1**). Test trenches and geophysical survey in 2007-8 investigated the archaeological evidence for the function of both sites and the chronology of their use.

In 2006-7 Test trenches and geophysical surveys (magnetometry) were also made in an effort to define the seaward extent of the buildings represented by sites **B1-B3** and the chronology of the dune formations which cover them. One trench also tested the precision of the DEM modelling and the dating of the inland extent of the larger enclosure of which **B2** formed part.

In 2009 a site at Tor Paterno (F2), where a massive concrete wall on the edge of the villa platform is visibly eroded by powerful wave action, was also cleaned, studied and recorded in detail.

In the course of 2005-9 the topographic model was enlarged to the south-east of the Vicus, to fill in more of the detail of its relationship to the neighbouring 'sites'; geophysical survey has also filled in some of the internal detail of the unexcavated parts of the Vicus itself, and small test excavations have sharpened the shape and chronology of its forum. Where the Vicus ends and the adjacent sites begin is still not easy to determine (and the boundaries may have changed over time), but may be resolved with relatively little difficulty in the future, with the aid of geophysical survey

Future work.

It is planned to extend topographical survey and DEM to cover the whole length of the coastline within Castelporziano and Capocotta, so that it can become an effective tool for the protection of the archaeological landscape. Additional surface and geophysical survey is also desirable to define the nature and extent of the imperial villa at Tor Paterno and the two fish farms.

Bibliography and further reading

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