

**REPORT ON THE MISSION TO THE ARCHAEOLOGICAL AREAS OF POMPEI,
HERCULANEUM AND TORRE ANNUNZIATA (C829)**

**ITALY
2 – 4 DECEMBER 2010
10 – 13 JANUARY 2011**

TABLE OF CONTENTS

EXECUTIVE SUMMARY AND LIST OF RECOMMENDATIONS	3.1 Management effectiveness
	3.2 Nature and extent of threats to the property
	3.3 Other issues and developments
	3.4 Positive or negative developments in the conservation of the property since the last report to the World Heritage Committee
	3.5 Information on any specific threat or damage to or loss of Outstanding Universal Value, integrity and/ or authenticity for which the property was inscribed
1 BACKGROUND TO THE MISSION	4 ASSESSMENT OF THE STATE OF CONSERVATION OF THE PROPERTY
1.1 Inscription history	5 CONCLUSIONS AND RECOMMENDATIONS
1.2 Inscription criteria and World Heritage values	6 ANNEXES
1.3 Integrity/authenticity issues raised in the ICOMOS evaluation report at time of inscription	1 Terms of reference for the Mission
1.4 Examination of the State of Conservation by the World Heritage Committee and its Bureau	2 Itinerary and programme
1.5 Justification of the mission	3 Composition of Mission
2 NATIONAL POLICY FOR THE PRESERVATION AND MANAGEMENT OF THE WORLD HERITAGE PROPERTY	4 List and contact details of people met
2.1 Protected Area/ national legislation	5 Structures visited during the Mission
2.2 Institutional framework	6 Administrative information
2.3 Management structure and system	7 References
2.4 Response to the recognition of values under international treaties and programmes	8 Plates I to XXX
3 IDENTIFICATION AND ASSESSMENT OF ISSUES / THREATS	

ACKNOWLEDGEMENTS

The members of the mission express their gratitude to the Ambassador of Italy to UNESCO, the representatives of the Ministry for Culture, particularly Manuel Roberto Guido and Leila Nista, the *Soprintendenze* and the Herculaneum Conservation Project for their support, which considerably facilitated the work of the mission. Special thanks go to Jeanette Papadopoulos and Teresa Cinquantaquattro, successively Soperintendente, and to Antonio Varone, Maria Paola Guidobaldi, and Lorenzo Fergola, respectively the directors of excavation at Pompei, Herculaneum and Oplontis, and their staff for looking after us and accompanying us during site visits and answering endless questions so frankly. We are also very grateful to Jane Thompson and the other staff of the Herculaneum Conservation Project for their help and support.

We also thank warmly all those others listed in Annex 4 who took the trouble to meet us and explain their views.

EXECUTIVE SUMMARY AND LIST OF RECOMMENDATIONS

The joint ICOMOS/UNESCO mission to the World Heritage property of Pompei, Herculaneum was invited by the Italian government following the collapse of the Schola Armaturarum on the night of 5-6 November 2010. Because of adverse weather conditions, the mission took place in two parts. The ICOMOS experts visited from 1 to 5 December, and the UNESCO expert was on site from 10 to 13 January. The mission visited all three parts of the World Heritage property and examined the overall state of conservation as well as the specific collapse. This report has been produced jointly by the mission members.

The mission found that the Schola Armaturarum had collapsed following the heaviest rainfall in 80 years. The building is adjacent to an unexcavated portion of the site which encouraged waterlogging. It had been weakened by bombing in World War II and had then been given a heavy and inappropriate reinforced concrete roof. The mission did not consider that the collapse of the Schola, in itself, has had a significant impact on the Outstanding Universal Value (OUV) of the property but agreed that further deterioration across the property could lead to significant damage to attributes that sustain the Outstanding Universal Value, authenticity and integrity in a few years.

Overall, the mission found that much of the property was in a good state of repair. They were concerned however by the poor state of maintenance of parts of the enormous site of Pompei and by the number of houses and other structures and requiring major conservation work at both Pompei and Herculaneum. They were also concerned by the gradual deterioration of wall paintings, mosaic floors and other decorative features. While some decay is inevitable in an exposed ruin, the mission considered that conditions were being exacerbated by excessive moisture and lack of routine maintenance. They were also concerned by the amount of plant growth, particularly ivy, in some places at Pompei, though elsewhere this is being vigorously tackled. Some of these structures are at risk and need urgent intervention. Generally, the backlog of maintenance at Pompei needs to be tackled urgently. Equally, drainage needs to be improved so that rain and ground water are readily and rapidly removed to prevent the damage being caused by waterlogging of the ground and by rising and penetrating damp in standing structures.

The mission considered that visitor management was an issue both in terms of potential erosion and in terms of increasing their enjoyment and education. They recognised that advances had been made both in terms of interpretation, arrangements for access and through the increasing number of houses which had been restored to permit access. However, these advances are to some extent negated by the lack of custodians which means that large parts of both Pompei and Herculaneum are not accessible to visitors on a regular basis. The mission considered that the development of a public use plan as part of the overall management system for the property could help the development of a more integrated approach to visitor management.

The mission fully recognises the skill and devotion of the staff of the Superintendency to their site. However, there are insufficient skilled professional staff to manage what needs to be done and they are entirely dependent on contractors for carrying out the necessary work. The mission believes that this has been exacerbated by diverting scarce resources to non-urgent projects such as the restoration of the theatre at Pompei. It is also probable that staff have been distracted by institutional instability over the last three years or so.

The mission was also concerned that there is no clear definition of the Outstanding Universal Value for the property to provide a base-line for effective management and conservation. There

are also no measures for monitoring the condition of the property. Apart from Herculaneum there appeared to be an inadequate information base since the Geographic Information System (GIS) for Pompei contains no data from later than 2002. Pompei does have a Management Plan but it did not seem to be used as an effective tool for planning and driving management decision-making at the site. There is a need for a clearer focus on these issues and on focusing all efforts on key priorities.

At Herculaneum the joint project between the Superintendency and the Herculaneum Conservation Project (HCP) has done much to eliminate the maintenance backlog there. With the life of the project drawing to a close, it is essential that the good practices developed there are closely studied by the Superintendency and adopted as far as possible across the property.

The mission concluded that the Outstanding Universal Value of the property had not yet been significantly compromised. However there are a considerable number of buildings at risk and a major backlog of conservation. If these are not tackled rapidly and urgently, there could be a significant risk to Outstanding Universal Value in the next few years. The mission also considers that more may need to be done to protect the visual setting of the property, particularly the vital visual links to Mount Vesuvius. The mission considers therefore that a further mission should visit the property within the next two years and that the World Heritage Committee should examine the state of conservation of the property again in 2013 to assess whether its condition has improved or worsened.

The Mission has made a number of recommendations which fall into four groups:

- A. Immediate measures to improve conservation and maintenance
- B. Measures to maintain and enhance the skills base and provide necessary information
- C. Measures to improve the management of site and understanding of OUV
- D. Follow-up action by UNESCO

A. Immediate measures to improve conservation and maintenance

Recommendation 1: The mission recommends that priority in work programmes should be given to dealing with the maintenance backlog at the property, the restoration of those buildings identified as being at risk by the mission together with any others identified in the condition survey carried out by the Superintendency.

Recommendation 2: The creation of effective drainage systems, particularly at Pompei, should be carried out as soon as possible to remove one of the basic causes of decay. As well as dealing with ground drainage, as far as possible rain should be prevented from entering roofed structures.

B. Measures to maintain and enhance the skills base and provide necessary information

Recommendation 3: The mission recommends that all contractors should be assessed for their ability to carry out skilled conservation work before they are allowed to tender for conservation work in the World Heritage property.

Recommendation 4: The Superintendency and Ministry of Culture should determine how many technical staff are required to carry out an effective programme to eradicate the current backlog of conservation and maintenance and should take steps to provide those resources as soon as possible.

Recommendation 5: The mission recommends the Superintendency and the Ministry of Culture to provide sufficient custody staff at Pompei, as a matter of urgency, to enable more of the property to be opened to the public in order to spread the visitor load and improve visitors' understanding of the site. This should be an essential element of the public use plan proposed in Recommendation 12.

Recommendation 6: The GIS for Pompei should be updated with all relevant information and kept up-to-date so that it can be used as a basic tool for the conservation and management of the site.

Recommendation 7: The Superintendency should plan with the HCP for the takeover in due course of the Herculaneum GIS and be resourced for its future maintenance and use as a basic tool for the conservation and management of the site.

Recommendation 8: The Superintendency with, if possible, support from the HCP should develop common standards for GIS in use within the Vesuvian group of monuments to enable easy exchange of data and regular updating as a basis for improved information management.

C. Measures to improve management of site and understanding of OUV

Recommendation 9: The Italian Government is recommended to submit a full Statement of Outstanding Universal Value by 1 February 2012 for consideration and adoption by the World Heritage Committee as the basis for the future management of the property in accordance with Decision 34 COM 10B.3 of the World Heritage Committee.

Recommendation 10: The Superintendency should develop and implement a set of simple monitoring measures for the condition and use of the site and should have these in place by 1 February 2012 and submit them for review by ICOMOS and the World Heritage Centre.

Recommendation 11: The Ministry of Culture is recommended to maintain institutional stability within the Special Superintendency in order to allow it to focus on managing and conserving the site as its main priority.

Recommendation 12: The Superintendency should review the Management Plan with other stakeholders and the Ministry of Culture to identify ways in which it can be used more effectively as a tool for the effective conservation and management of the property. The Management Plan should include public use and risk management plans. The Italian Government should report on progress on this by 1 February 2013.

Recommendation 13: The Superintendency, the Packard Humanities Institute and the British School at Rome, as the partners in the Herculaneum Conservation Project agreed and are implementing a phased programme over the next few years for withdrawal by the Project which enables the Superintendency to continue to implement the approaches developed, particularly in the area of programmed maintenance. The Ministry and the Superintendency must guarantee their commitment to this programme. Ideally, the private partners should follow the phased handover for conservation works with some form of light support for a number of years to favour the commitment to the improved management and conservation approaches by the public authority at Herculaneum (but perhaps also at the other sites in its care), particularly in a period when the management system for these sites might be subject to change.

Recommendation 14: It is recommended that measures for the effective protection of the visual setting of the property, particularly the visual links with Mount Vesuvius, should be reviewed and strengthened as necessary, possibly by the extension of the buffer zones.

D. Follow-up action by UNESCO

Recommendation 15: It is recommended that the World Heritage Committee should invite the State Party to submit a State of Conservation report for consideration at its 37th session in 2013, reporting on progress on the Recommendations made by the mission and the general state of conservation of the World Heritage property. It is further recommended that the State Party should be invited to request a joint ICOMOS/ UNESCO mission during 2012 in order to assist with this process.

1 BACKGROUND TO THE MISSION

1.1 Inscription history

Nomination dossiers were submitted by the Italian Government for Pompeii and Herculaneum in May 1996 and for Torre Annunziata (often known as the Oplontis Villa) in June 1997. The nominations were evaluated by ICOMOS in 1997 and the property was inscribed on the World Heritage List by the World Heritage Committee at its 21st session (Naples, 1997).

1.2 Inscription criteria and World Heritage values

The State Party justified the property's Outstanding Universal Value as follows:

Pompeii is the only Roman city to be preserved in such an exceptional way. Pompeii shows the visitor a full picture of a Roman town from the first century B.C. until the first century A.D., in all of its aspects: urban, architectural, decorative, etc.

Herculaneum was constructed on a promontory overlooking the Gulf of Naples. In the city, which has an orthogonal plan, 7 insulae have been excavated. They are rich in houses decorated with highly refined wall paintings and marble pavements, such as the House of the Stags, the House of the Mosaic Atrium, The House of the Bicentenary and the House of the Wooden Partition. Several public buildings have also been discovered, such as the Central Baths, the Suburban Baths, the College of the Priests of Augustus, the Palaestra and the Theatre. The presence, in numerous houses, of furniture in carbonised wood due to the effects of the eruption is characteristic of Herculaneum.

The Villa of Poppea is preserved in an exceptional way and is one of the best examples of a residential Roman villa. The Villa of Cassius Tertius is one of the best examples of a Roman villa rustica.

ICOMOS advised that:

Owing to their having been suddenly and swiftly overwhelmed by debris from the eruption of Vesuvius in AD 79, the ruins of the two towns of Pompeii and Herculaneum are unparalleled anywhere in the world for their completeness and extent. They provide a vivid and comprehensive picture of Roman life at one precise moment in time.

Recommendation: That this property be inscribed on the World Heritage List on the basis of criteria iii, iv, and v.

The impressive remains of the towns of Pompeii and Herculaneum and their associated villas, buried by the eruption of Vesuvius in AD 79, provide a complete and vivid picture of society and daily life at a specific moment in the past that is without parallel anywhere in the world.

The World Heritage Committee inscribed the property on the World Heritage List under criteria iii, iv and v, considering that the impressive remains of the towns of Pompeii and Herculaneum and their associated villas, buried by the eruption of Vesuvius in AD 79, provide a complete and vivid picture of society and daily life at a specific moment in the past that is without parallel anywhere in the world.

The property does not have a full Statement of Outstanding Universal Value as now required by the World Heritage Committee.

1.3 Integrity/authenticity issues raised in the IUCN/ICOMOS evaluation report at time of inscription

ICOMOS considered in 1997 that despite the nature and quality of earlier restoration work, the authenticity of both properties was very high. This view applied to both the individual components and to the ancient urban fabric.

ICOMOS noted that there was at that time no management plan *sensu stricto*, although conservation and restoration activities were programmed. An application had been made to the Ministry for Cultural and Environmental Heritage for funding for an exhaustive survey of conservation requirements, to form the basis for an active management plan. ICOMOS hoped that the funding required for the preparation of a management plan would be made available with the minimum delay.

In its decision, the Committee asked Italy to submit a progress report, in time for the Bureau meeting in June 1998, on the management measures taken at Pompei, with particular reference to experience gained through planned partnerships between the State and private enterprises, as well as information concerning the protection of the environment surrounding the area.

1.4 Examination of the State of Conservation by the World Heritage Committee and its Bureau

There has been no previous State of Conservation Report for the property. It was noted at the 22nd (1998) and 24th (2000) sessions of the World Heritage Committee that the information requested in 1997 on management measures had not been received by the World Heritage Centre although on both occasions the Italian delegate said that it had been dispatched.

The property was the subject of a Periodic Report by the State Party in 2006. The State Party reported that the Statement of Significance supplied in 1996 adequately defined the Outstanding Universal Value of the property. They considered the boundary of the property and the buffer zones to be adequate. With regard to authenticity and integrity, the World Heritage site values had been maintained. Further excavations at both Pompei and Herculaneum had improved the conditions of integrity of the archaeological properties, also raising the monuments' level of authenticity. The present state of conservation was judged to be good. There was no formal monitoring programme but work was in hand to identify monitoring indicators. (*State of Conservation of World Heritage Properties in Europe*, Section II (2006)).

1.5 Justification of the mission

The justification of this mission was decided following the collapse, in the night of 5 to 6 November, of a house in Pompei, the Schola Armaturarum in the Via dell'Abbondanza, in region III, insula 3, n°6 (each building mentioned will be located in the same order, in a classification which covers the whole of the *intra muros* zone). (map)

Press reports referring to the building as the “House of the Gladiators” are incorrect, as its title, according to the inventory of the Pompei Superintendency, is the “Schola Armaturarum”. It has been argued that it may have been the headquarters of a military training association, intended – as in other Roman cities – to prepare young people from families of high social status for the military profession. The function of the premises was in any case mainly to store training equipment – such as breastplates, shields, swords and helmets – as clearly shown in the frescoes which decorate the facade architraves. It may have been a storehouse for gladiators’ weapons.

The mission was asked to assess the impact of the collapse on the Outstanding Universal Value of the property, as well as to assess the overall state of conservation of the property, identify potential threats and possible measures to avoid the repetition of such incidents. The mission was also asked to review the management arrangements and the situation with regard to the Management Plan. The full terms of reference, itinerary, programme and composition of mission team are provided in Annexes I, II and III.

The joint ICOMOS – UNESCO mission was carried out in two stages because bad weather prevented the UNESCO expert reaching Naples on the planned dates. As a result the ICOMOS members of the mission visited the property from 1 to 5 December 2010 while the UNESCO expert visited from 10 to 13 January. The mission team had meetings with stakeholders, reviewed existing documents, and visited all three parts of the property. The ICOMOS visit concentrated mainly on the actual physical state of the property while the UNESCO expert focused more on the way in which work was planned and carried out at the property.

2 NATIONAL POLICY FOR THE PRESERVATION AND MANAGEMENT OF THE WORLD HERITAGE PROPERTY

2.1 National legislation

All three parts of the property belong to the State. As part of the cultural and archaeological heritage, the property is under the state protection regulations (Legislative Decree 2 January 2004, no.42 Cultural Heritage and Landscape Code). The property has also benefitted from the provisions of Legislative Decree no.77 of 2006 which provided funding for the development of management plans for World Heritage properties in Italy.

2.2 Institutional framework

From 1998 the property was managed by the Archaeological Superintendency of Pompei. This had, as does its successor, “scientific, organisational, administrative and financial autonomy”. In April 2008 this was succeeded by the Special Superintendency for the Archaeological Heritage of Naples and Pompei which, in addition to the Vesuvian monuments (Pompei, Herculaneum, Torre Annunziata, Stabiae and Boscoreale), is also responsible for the National Archaeological Museum of Naples and all archaeological sites in the Province of Naples including the Islands of Capri and Ischia.

Overall, the Superintendency has around 900 staff for its whole sphere of activities, of whom over half deal with Pompei. The Technical Office at Pompei, with 6 staff, covers the Vesuvian

monuments. There is a Conservation Office, with 10 staff, headed by an archaeologist, which deals with the conservation of wall paintings, plaster and mosaics at Pompei. Herculaneum and Stabiae have their own Conservation Offices. Each of Pompei, Herculaneum and Torre Annunziata is managed by an Archaeological Director who reports to the Superintendent. There is a records office at Boscoreale covering the Vesuvian monuments.

The staffing structure is very rigid in that all staff are employed by the state and their jobs are secure until retirement age. It is therefore not possible to re-structure the existing staff to meet gaps in technical skills or shortages of custodians. The mission was informed that it is virtually impossible to recruit new staff under current Ministry guidelines. This has been the case for some years. This means that the overall staff numbers of the Superintendency have been in decline for a number of years with no possibility of filling vacancies as they occur or of creating new posts where they are needed.

The Ministry of Culture in Rome meets staff costs. All ticket revenue from the sites within the Superintendency is retained and spent on their conservation and improvement. The Superintendent redistributes the income from the various sites in accordance with the necessity of carrying out works. There was some feeling that Pompei had lost out since the merger in 2008 in that its revenue had been used to subsidise necessary work elsewhere. It was pointed out, however, that 23 out of the 40 projects programmed for 2011 were at Pompei.

The institutional framework has not been stable. In July 2008, only three months after the reorganisation of the Superintendency, the World Heritage property was declared to be in a state of emergency and placed under the control of a special Missioner. The state of emergency was lifted only on 31 July 2010 when control was returned to the Superintendency. Since then there have been three successive Superintendents.

The mission learnt that a Mission has been established in Rome to review the management of the Vesuvian monuments. One possible outcome could be the creation of a special foundation to take responsibility for these sites. The potential advantages of such a foundation would be more autonomous management of the property and the possibility of attracting private funding. Any such change would however be very disruptive to the ongoing management and conservation of the sites. It could only be justified if there were substantial benefits as a result. The Superintendency already has considerable autonomy so benefits in this direction are likely to be limited. It is also unclear whether any significant new funding would become available. The mission considers that institutional instability is likely to have been one of the factors affecting the management of the property in recent years.

2.3 Management structure and system

Basic management structure

The basic structure is set out in Section 2.2 above. The three sites are managed directly by the Superintendency. The buffer zones and surrounding areas come under the jurisdiction of the various local authorities and the mission was informed that there was regular liaison between them and the site management.

Responsibilities for conservation work

At the site level, the relevant Archaeological Director is responsible for the management of each of the three parts of the World Heritage property though the approval of the Superintendent is required for any significant activities. The Superintendent is also responsible for the allocation of funding for projects and the overall maintenance budget. Technical services are provided by the Technical Office based at Pompei which serves all the Vesuvian monuments. Each member of its staff has responsibility for a part of Pompei itself as well as for outlying sites including Herculaneum and Torre Annunziata.

Day to day supervision of the site is in the hands of the site custodians. At Pompei, for example, at any one time 23 staff are on duty on the site. In addition to supervision of visitors, custodians check each day the state of the fabric in their area and report any problems. The technical office staff inspect their sector of the site on a regular basis.

Despite the large number of staff, only a very few maintenance staff are directly employed by the Superintendency (see Appendix 6). They are solely concerned with day-to-day minor matters and not with maintenance of the fabric. All such work is carried out by contractors. This means that response to emergencies cannot be as immediate as if maintenance staff were always present. At Pompei, individual term contracts have recently been set up to cover a series of routine maintenance activities, for example the replacement of lintels. This means that work can be specified and instructed more rapidly and carried out for a previously agreed price. Apart from potential delays in getting work started, use of contractors can raise issues over the quality of execution and this needs to be carefully and rigorously monitored. It is important that potential contractors are carefully assessed for their capability to carry out specialised conservation work preferably before they are allowed to tender for work and certainly before they are appointed.

The mission was informed that major projects, whether for conservation or presentation, are funded from the revenue earned by sites within the overall Superintendency, as is maintenance. It is sometimes possible to get funding from external sources, such as European funds. The Superintendent chooses which projects should go ahead on the basis of priority and urgency. Work is specified and supervised by members of the Technical Office staff in consultation with the Archaeological Directors. This process was effectively suspended during the State of Emergency (July 2008 – July 2010) when the Special Missioner decided what should be done and could also access other funding sources.

The Management Plan

The lack of a management plan was the subject of comment at the time of the site's inscription in 1997. A number of planning documents have been prepared over the subsequent period. Between 1998 and 2002 the Piano del Pompei was prepared with support from the World Monuments Fund. This is essentially a Geographical Information System (GIS) which recorded the site at Pompei in terms of survey and the condition of the structures. It forms the basis for the GIS maintained by the Superintendency at Boscoreale but has not been updated with more recent records.

A feasibility study for a management plan was carried out in 2002. A Management Plan *Il Piano di Gestione del Sito UNESCO "Aree archeologiche di Pompei, Ercolano e Torre Annunziata"* was completed in 2008 and was formally approved by the Superintendency and the three municipalities in which the different parts of the World Heritage property are located. A Supplement to the Management Plan *Integrazioni e aggiornamento del Piano di Gestione UNESCO* was created in 2010. As described, this essentially updated the Plan with actions taken since 2008. This has not yet been formally approved. The site staff were not able to show

clearly that the Management Plan was actually used by them as a management tool or as the basis for developing agreed actions with other stakeholders. Work was carried out on the basis of needs identified in the Management Plan and it was used by the Superintendent to help develop the annual work programme from the bidding lists provided by the individual sites in her responsibility. It was also claimed to be useful assistance in obtaining funds from external sources since including projects in the Management Plan can get them fast-tracked. Maintenance was covered only in general terms in the plan.

International Partnerships

The site of Pompei, in particular, is used by many Italian and international academic institutions for research into many different aspects of the site, including conservation work. There is now very little new research excavation apart from the Insula of the Chaste Lovers in Pompei.

The additional resources and new insights brought by external partners are very valuable. It is however essential that their work is fully integrated into the management of the property and that it is carried out within the general standards set by the site managers. There are two aspects to this. Firstly, some research work, for example excavation, can create added burdens for conservation work and future maintenance. All archaeological excavation is inevitably destructive and needs to be carefully defined to avoid adverse impact on the Outstanding Universal Value of the property.

It is to be welcomed that much of the international work at Pompei is now focusing on investigation and conservation of what has already been exposed. Even here, though, it is important that the work is carefully controlled. The experimental roof at Casa di Centenario (see Pl. XII, 3), for example, is inappropriate and jarring compared to the general approaches to roofing delicate structures. (See also 3.2)

The Herculaneum Conservation Project (HCP)

The management system at Herculaneum is different because of the existence there of a public/private initiative. The HCP was launched in 2001 for the conservation and enhancement of the archaeological site of Herculaneum. The project was set up by David W. Packard of the Packard Humanities Institute, together with Pietro Giovanni Guzzo of the Superintendency, to take the measures necessary to provide a response to the serious condition of the site after decades of neglect. Andrew Wallace-Hadrill, Director of the British School at Rome, was invited to direct the project, with the guidance of a Scientific Committee of international distinction, with the aim of reversing the phenomenon of spiralling decay that was afflicting the archaeological structures and find long-term strategies that could ensure the survival of this ancient city.

Thanks to donations by the Packard Humanities Institute to reimburse the cost of conservation works carried out within the Superintendency's works programme and through the creation of a small team of conservation specialists that advised the heritage authority, the tide gradually began to turn. In the summer of 2004 a third partner, the British School at Rome joined HCP and signed a sponsorship agreement with the Superintendency that allowed the private partners to provide operational support to the heritage authority. Now able to mission site-works directly and avoid the delays of the procedurally heavy public-works administrative route, the impact of the injection of external philanthropic support was optimised. A larger project team was established made up of both independent specialists and contractors appointed by the private arm of the collaboration and the public officials working for the Superintendency.

The overall aim of the project is to support the Superintendency to safeguard and conserve, to enhance, and to advance the knowledge, understanding and public appreciation of the ancient site of Herculaneum and its artefacts. In 2006 the main objectives were agreed as follows:

- to slow down the rate of decay across the entire site so that it can be maintained in future on a sustainable basis;
- to test and implement long-term conservation strategies that are appropriate for Herculaneum and potentially applicable to other, similar sites;
- to provide a basis of documentation of Herculaneum so as to facilitate its future management;
- to acquire new archaeological knowledge about Herculaneum derived as an integral element of the activities devoted to its preservation;
- to conserve, document, publish and improve access to the artefacts found in excavations at Herculaneum;
- to promote greater knowledge of and discussion about Herculaneum among the scientific community, the local population and the general public.

(see www.herculaneum.org)

The Project has been an undoubted success in improving the state of conservation of Herculaneum and in establishing new methods of conservation and maintenance as well as of improving understanding of the site. In addition to works and research on site, the Project has also established a full GIS for Herculaneum which is fully up to date. Cooperation between the partners undoubtedly works well. It is however dependent on the continued generosity of the Packard Humanities Institute and will in the next few years complete its work, after which the systems and practices it has established will have to be maintained by the Superintendency if they are to continue.

The Project brings to Herculaneum both additional resources and additional professional expertise (it currently employs 12 – 15 consultants of whom 6 are virtually full-time). The withdrawal of these resources as the Project scales down its involvement in rolling conservation programmes will need careful management. It is expected that the Project will cease in 2012 although possibly with some subsequent funding, for example, for the GIS. Other one-off projects for conservation, enhancement or research may continue. The Superintendency will need to plan carefully with the Project how to take on as much as possible of what it does without the same level of resources. It will be particularly important as far as possible to adapt from the methods of working used by the HCP. These have demonstrated that it is possible to bring in professional experts as consultants and achieve an excellent standard of work. It has also been demonstrated that by the careful selection and supervision of contractors it is possible to achieve excellent standards of work and rapid responses to problems.

2.4 Response to the recognition of values under international treaties and programmes

The World Heritage Convention is the only international convention affecting this World Heritage property. The property has also benefitted from funding from the European Union.

3 IDENTIFICATION AND ASSESSMENT OF ISSUES / THREATS

3.1 Management effectiveness

Managing archaeological sites on the scale of these three is always challenging. The mission was impressed by the commitment and professional expertise of the staff at all three sites. The general condition of much of the property is good. Elsewhere there are undoubted problems over the standard of conservation and maintenance. Even at Herculaneum, where the general standard of maintenance has been much improved following the involvement of the Herculaneum Conservation Project, there are still six houses on the main site in need of urgent conservation as well as the buildings exposed during the excavation of the Villa of the Papyri. The next section outlines problems seen by the mission at Pompei as well as Herculaneum.

The management structure has been described above. There are a number of issues which limit its effectiveness. Among these is the lack of institutional stability (see 2.2. above) as frequent changes in structure and senior personnel are bound to detract from effectiveness. Perhaps the most important issue, however, is the lack of resources, both human and financial. While Pompei may have around 470 staff, it is very short of the professional staff needed for its management and conservation. It is also lacking in on-site staff that could carry out day-to-day maintenance of the fabric. This is unfortunate since rapid response to problems can often solve them quickly and cheaply whereas delays can mean that the eventual solution is more expensive and involves much more intervention in historic fabric. The shortage of professional staff in particular is a major drawback. There would be little point increasing the funding available to the site without increasing the number of professional staff needed to plan and carry out work.

Similarly, the fact that no more than 23 custodians can be deployed on site inevitably limits the efforts being made to improve visitor access and understanding and to spread the load around the site. This shortage undermines the strategy being pursued by the Superintendency to restore more houses so that they can be open to visitors on a regular basis and to some extent renders these efforts ineffective.

The mission was also concerned that resources were not being focused on key conservation priorities such as dealing with the maintenance backlog. The restoration of the Theatre, for example, could probably have been delayed and the resources used for it could have been used elsewhere to deal with more fundamental issues such as creation of an effective drainage system or general conservation of some of the buildings in a poor state of repair. Unnecessary diversion of scarce resources, both financial and of skilled professionals and expertise, is a major concern when there are major backlogs of conservation and maintenance.

This suggests that the management system is not currently wholly effective in identifying priorities and carrying them out. This could well be done through an effective Management Plan but the Plan is not used effectively to set priorities. We were also concerned that the information systems on which effective management should be based were not up to date. The GIS at Boscoreale looks impressive but contains no data later than 2002 which means that it cannot be used as an effective management tool. The result of this is that condition surveys are being carried out independently of the GIS and with little chance of integration within it. This is another area which requires extra resources in order to make a positive contribution to the management of the site.

The mission noted that the Italian law on personal liability can hinder recovery after a disaster and could possibly inhibit individuals in developing and implementing new initiatives. Liability for a failure such as the collapse of the Schola Armaturarum rests entirely with the individuals responsible for its safety. There appears to be no concept of legal corporate liability by which some or all of the liability for a disaster might rest with the Ministry or the Superintendency as institutions. In the case of the Schola, this meant that the law courts sealed off the collapsed building within a few days of the collapse, after which no one was allowed access to examine the structure or to begin recovery work and emergency conservation. This still applied during the second part of the mission in January so that ten weeks after the disaster no remedial work had taken place. Since there are likely to be surviving wall-paintings under the collapse, this delay is likely to have resulted in further damage to important archaeology.

3.2 Nature and extent of threats to the property, taking into consideration the cultural values for which the property was inscribed and specific issues outlined by the World Heritage Committee

The World Heritage Committee has not outlined any specific issues. The mission was sent because of the sudden collapse of the Schola Armaturarum. As is normal, the mission considered all aspects of the conservation of the property and other matters concerned with its management and sustaining its Outstanding Universal Value, defined in 1997 as providing a complete and vivid picture of society and daily life at a specific moment in the past that is without parallel anywhere in the world. This section deals primarily with the physical state of conservation of the property, with separate sections on Pompei, Herculaneum and Oplontis.

Pompei

Major causes of deterioration and collapse of the Schola

Morphology

The first analysis carried out by the Missionmission was to propose – in the light of local eye-witness accounts and interpretations of the structure's morphology and situation – an explanation for its complete collapse despite the fact that it had undergone a full restoration. The situation of the monument in the urban topography is identical to that of many other houses which mark the limit of the excavations, and which are thus backed up against higher land, the result of the thick layer of ash and lapilli deposited by the eruption in 79 AD. During the last week of October and the start of November 2010, abundant and continuous rainfall waterlogged the land of the three largest unexcavated sectors of regions IV and V in the north, III and IX in the centre, and I in the south of the city. At the edges of each of these zones, an identical situation arose for the houses forming the limit; some of them had benefited from a later trench which prevented earth pressure, such as the Casa di C. Julius Polybius (IX, 13, 1-3), while the others were placed in a precarious situation because their rear walls were forced to act as a dam (pl. IV, 3). It has been demonstrated in fact that the large quantity of rainwater which waterlogged the ground gave it a plasticity, and in some cases a fluidity, which considerably increased the pressure exercised on the ancient masonry. The stresses generated, combined with the poor state of repair or the mediocre quality of the restoration works, resulted in the collapse of the *Schola*, together with other damage of an identical nature referred to in the observations made by the MissionMission (pl. II, 2).

History of restorations and vicissitudes

The Schola Armaturarum, which was excavated in 1915-1916, during the vast programme of digs by Vittorio Spinazzola, had its masonry completely restored and protected by a roof. In September 1943, with the Germans occupying Pompei, the Allies bombarded the city on several occasions, and the ancient site was not spared (after the end of hostilities, 170 projectile impacts were recorded). The roof and west wall of the Schola Armaturarum were destroyed. The restoration of the fabric of Pompei took several years, in view of the scale of the damage, and the restoration of the Schola was completed in 1947. In order to ensure the long-term protection of this monument, and the other seriously damaged houses, the option unfortunately adopted was the use of reinforced concrete for the lintels and roof beams (pl. II, 1). The Schola suffered seriously from this technical choice for at least two reasons. The first was linked to the circumstances in which the restoration of the site was carried out, as the country was emerging from a war which had economically destroyed it, and depleted its technical resources. It is certain that the materials were not of excellent quality and were not used with the skill which should have been required for heritage as exceptional as Pompei. It should be added that, as the Schola was not a house, it was not divided internally with transverse walls, partitions or floor plans. Its morphology was that of a large empty cube, one of whose faces was open to the street. After the war, the cube had been covered by a reinforced concrete slab (to replace the light sloping roof previously installed), while the facade opening was covered by a heavy beam, also made of reinforced concrete, which itself supported a masonry wall.

While there is little hope of recovering the trophy decoration of the left hand pilaster on the facade, of which much had already disappeared, it seems that there are still paintings on the ancient walls (pl. II, 3). The photographs taken in 2009 show the fading of the decoration (pl. III, 2, 3) and substantial restoration work will be necessary, after clearing and rebuilding the structure, to give what remains a presentable appearance.

It should be added that as the mass of masonry of the Schola collapsed, it fell into the alleyway to the east, which leads to the Casa di Ifigenia (III, 4, b), and triggered the collapse of the shop occupying the corner of insula 4.

Dangers resulting from 1980 earthquake

In addition to the sources of damage already mentioned, there was a particularly dramatic event whose effects were felt by Pompei on 24 November 1980, when a violent earthquake affected Campania and the Basilicate. Although Pompei was not located at the epicentre, it suffered substantial collapses, breaches and listing, which damaged many buildings. Admittedly, the most substantial damage was repaired with the greatest of care, and the necessary resources were provided by the Italian government, with the financial assistance of the Council of Europe. But looking beyond the most visible destruction, which was repaired, there is no doubt that the earthquake gave rise to countless almost imperceptible cracks and internal stresses in both ancient masonry and hastily and poorly restored walls, as the quakes caused the stones to vibrate inside the structural concrete. The stones set into motion crushed a high proportion of the binding mortar, preventing it from carrying out its adhesive function, and causing potential vulnerability in the masonry affected. It is therefore understandable that the earth pressure surrounding or backing up against buildings at the edge of the excavations, and the weakening of the foundation ground if the foundations do not go right down to the rock, together with infiltration of rain water into the heart of the structures, ends up in the collapse of many walls, particularly when – as in the case of the Schola – they are dangerously overloaded by an inappropriate roof.

The fact that, within a matter of days, numerous collapses were observed, suggests that this is the culmination of a process of weakening which began in the distant past when the buildings were first exposed, leading (in the absence of appropriate remedies) to an increase in weakness which follows

a slow asymptotic curve, reaching a critical level when violent climatic circumstances suddenly accelerate the process.

The Casa del Centenario (IX, 8, 6)

The particular morphology of the Schola is not however unique, and its situation prior to the collapse may usefully be compared with that of the *oecus* of the Casa del Centenario (IX, 8, 6), whose perilous situation has not escaped the attention of the site officials (metal props have been put in place to prevent the imminent threat of collapse). However, it is easy to imagine the considerable scale of the work required to ensure the long-term stability of the *oecus*: the removal of the roofing slab, and the reinforced concrete lintel over its opening are essential.

Damage typology

1 – Ordinary processes of decay

Reference has just been made to two major events, which were extremely violent and caused extensive damage, but allowance should also be made for the simple and unavoidable fact that often barely perceptible damage is caused simply by the passage of time, for reasons essentially linked to the great age of the structures. A very brief recapitulation of the archaeological history of the site is sufficient to show that this is a matter of everyday reality, and brings out the negative aspects of the history of the site.

Pompeii was discovered in 1748, and the first digs – which cannot really be described as archaeological excavations – were intended only to recover the most remarkable items of furniture or frescoes, which were then deposited in the royal collections of Portici, and later of Naples. Until 1860, the site was exposed with no ordered pattern whatsoever, without any restoration being planned or undertaken. Whatever the lack of organisation of this process of collection, and the indifference to architectural matters, it is best to adopt a realistic view, and point out that the works recovered – and which are now attentively guarded and maintained in museums and reserves – were saved from what would most likely have been destruction. Pompeii entered the archaeological era with the appointment, also in 1860, of Giuseppe Fiorelli, a scientific and conscientious site director. The last great excavation campaigns, which joined up the forum and the amphitheatre, were conducted by Vittorio Spinazzola from 1911 to 1922.

Before this era, when there was a general realization of the overall value of Pompeii, most of the masonry was never restored or supported, other than by a protective roof, and it is therefore easy to understand why structures two thousand years old – and often more, in view of the age of Pompeii at the moment of the eruption – became extremely vulnerable objects as soon as they were exposed. It is of course these houses – considered to be of minor importance, as they were rapidly stripped of their furniture and decoration – which suffered most from these ordinary process of decay which are less noticeable here than on the major patrician residences. If looked at closely, the houses primarily in the western quarters (the first to be unearthed) bear a large number of cracks and breaches, and in some cases their walls have collapsed. The site management team has not been able (because of a lack of resources and permanent staff) to restore or reconstitute the houses discovered, or even maintain them in their original state of conservation. This task however - if accompanied by regular and vigilant control, organised on a topographic basis - is simple building work, and no heavy worksite is necessary.

While the mission focused on a detailed examination of the buildings considered to embody the greatest amount of artistic and technical information, it was also duty bound to take a close look at

the most modest structures in Pompei. It should be stressed that Pompei is not an isolated building, but an entire city, of which two-fifths remains in archaeological reserves, and which constitutes over its entire extent a coherent whole, all of whose elements form an integral part of the World Heritage property, which has extraordinary value and unity.

2 – Aggressive action of water

Casa del Moralista (III, 4, 2-3)

In insula 4, east of the shop destroyed by the collapse of the Schola, is the Casa del Moralista (III, 4, 2-3), whose architecture was not damaged by the collapse. An open space was in the process of being laid out there, both for safety reasons, to keep the house away from the ground above it, and to lay out the garden which extended behind the *domus*. In order to contain the steeply sloping earth towards the north, a succession of five steps had been created, held in place by wooden barriers using a technique also employed to hold coastal dunes in place. The same technique has been used at several places on the edge of the excavated areas. This process, although pleasant to the eye and more adaptable for repair and dismantling than masonry, unfortunately has no power to stabilise earth of a great height, particularly when it becomes waterlogged and thus fluid. The outcome was spectacular, but fortunately in this case caused no damage to the architecture, when several metres of fascines were knocked over by the landslide (pl. V, 1).

The streets

As the rainfall was almost continuous and abundant during the three-day visit to the Vesuvius area, the mission had every opportunity to gauge its violence, and the difficulties faced in rapidly draining away the large volumes of water which fell on the ground without causing damage (pl. I). Most of the streets of Pompei have a roadway of lava tiles; because of the regular grid pattern which forms *insulae*, half of the streets run in a north-south direction, and there is a considerable declivity to the south. Accordingly, in these streets, the rainwater flows away rapidly towards the southern gates, where ancient pipes enable it to pass the ramparts. The other streets are closer to horizontal, and are transformed into water courses, from which drainage is slower, or sometimes almost non-existent (pl. I,1). It is important to note that this mass of water also soaks into the unroofed masonry (the vast majority of buildings in Pompei), and the ground on which they stand. For lack of effective protection, the pouring rain penetrates the shelters and causes damage to the floors and to the painted plaster on the walls. The lack of maintenance of many roofs in a poor state of repair results in infiltrations, which inevitably cause the same damage, both to walls and floors (pl. VIII, 3. XV, 2. XXIII, 3).

Casa di Trebius Valens (III, 2, 1)

A *domus* close to the collapsed Schola, the Casa di Trebius Valens (III, 2, 1), also suffered serious damage as a result of the same violent rainfall. This residence had just undergone supplementary excavations, and a general restoration of its structures and painted decoration. Unfortunately, because of its situation at the edge of the excavated area, it is backed up against unexcavated land which dominates it completely on three sides (pl. V, 2). The landslide which occurred at the Casa del Moralista also occurred here for the same reasons, causing the collapse of the masonry on the western side, and resulting in deformations on the north and east sides. The internal surfaces of these walls, covered with painted plaster, are now cracked or in some cases breached, as a result of the convex curve generated by earth pressure (pl. V, 3). It is above all the north wall of the elegant summer *triclinium*, set up at the back of the peristyle, which is giving most concern, because it has to withstand the greatest earth pressure. The pergola protecting this *triclinium* had just been completely

reconstituted. However, neither the wall masonry, or the column masonry had been supported, and it had not been thought necessary to remove the earth which surrounded the triclinium. When the mission made its visit, students from the Universities of Genoa and Milan were carrying out interventions in this residence.

While the degree of deterioration of masonry is often hard to determine until a collapse takes place, it is obvious that their remarkable age is a certain factor of potential weakness. Clearly, it is the considerable number of buildings which has to be kept in good condition which has, up to now, made it impossible to ensure that they are kept in perfect repair. It is possible, by referring to documentary records, to establish a chronology of damage caused by water infiltrating or running into houses which are inadequately protected. A few examples, noted by the mission, are sufficient to gauge the extent of the serious risk which is developing, and an intervention clearly needs to be set up as a matter of great urgency.

Casa di Adone ferito (VI, 8, 10) (pl. XVIII)

In the Casa di Adone ferito (VI, 8, 10), a room covered by a roof, but with no protective wall on one of its sides, is open to the pouring rain, whose devastating effect – added to rising damp from the water which has soaked into the floor - is unfortunately very clearly visible in the zone which has been worn away from a fourth-style decoration of great richness, which today is all but lost (pl. XVIII, 3).

Casa delle Nozze d'Argento (V, 2, i) (pl. XV, XVI)

At the Casa delle Nozze d'Argento (V, 2, i), a *cubiculum* – a bedroom – whose walls bear a fine second-style decoration, is affected by rainwater infiltration because of a leaking roof and because the entrance has no barrier to prevent infiltration through the ground (pl. XV, 2). The *atrium* – which is not covered by a plexiglass roof like some other houses – is completely flooded (pl. XV,1) and the lararium vault is badly cracked (pl. XV, 3). The fear is that the vaults could simply collapse, which has already happened in the tetrastyle *oecus* as it awaits repairs (pl. XVI).

Casa di Romulus e Remus (VII, 7, 10)

The decoration (a *paredisos* and a garden) of the portico of this house (VII, 7, 10), although recently restored, has been seriously damaged by rainwater leaking through an accidental opening in the roof, while the fresco on an unprotected wall is fading away (pl. XXIV, 3 and 4). Damage of the same type is affecting a *cubiculum* of the *thermopolium*, or inn, of V. Placidius (I, 8, 8), while at the Casa del Citarista, the plaster decorations in uncovered sectors are now illegible.

Casa del Efebo (I, 7, 11) (pl. XXI, XXII)

Finally, in the Casa del Efebo (I, 7, 11), a house which has suffered particularly serious damage, it is through a hole in the roof that the water is flowing freely on to the wall at the back of the *tablinum* (the master's work room), which has suffered major damage. In the same house, the lararium of the *atrium*, flimsily protected under a small awning, has now been almost totally erased or detached and is now hard to identify (pl. XXII, 4). Inside the same *domus* is the most spectacular summer *triclinium* in Pompei, set in a small garden, initially shaded by a pergola and featuring a small nymphaeum whose water flowed between the couches. The nymphaeum, which has been given the appearance of a small sanctuary on a podium, still has part of its polychrome stucco decoration, while the positions of the three couches are delineated by the four plastered and painted columns which supported the pergola. What seems to have been a carefully installed protective structure kept this small assembly out of the rain. It consisted of a light roof supported by the columns, while a metal-

framed glass panel completely protected the couches, whose sides were totally covered with frescos with landscape, architectural and anecdotal frescoes. The mission noted the complete disappearance of the protective elements: the roof has disappeared, the glass panel has been broken, the *velum* has been torn. The irreversible effects are there for all to see (pl. XXI, 1). One of the most celebrated scenes is already seriously damaged on the left-hand side (pl. XXI, 2, 3). Mention should also be made of the dilapidated condition of the *triclinium* 17, which we will refer to again below, and of the *cubiculum* 9, whose paintings are blistered (pl. XXII, 1, 3).

In addition to the extremely high quality of the painted decoration of the various rooms of this house – particularly the two interior *lararia*, the winter *triclinium* and the small pictures in the bedrooms, – the summer *triclinium*, the most complete of its type, remains a remarkable installation, combining as it does luxury, enjoyment, comfort and whimsy. It is very painful to have to note the rapid deterioration of this house as a whole, and of its summer *triclinium* in particular, and this should be taken as a powerful alarm signal which we hope will be heard loud and clear.

Following the situations outlined above, the damaging effects of the water can be monitored. Initially damp infiltrates into the heart of the masonry, as a result both of insufficient roof protection and of capillarity drawing water up from the ground. The mechanical phenomena of this impregnation cause the swelling of the layers of plaster, resulting in blistering. In the second stage, the increase in blistering lifts off ever-increasing areas of plaster, which then begin to flake off. In the third stage, almost all of the detached surface falls away, and quickly the rest of the plaster, made extremely fragile, is detached over increasingly large areas. This has been observed in one of the rooms of the Casa del Sacello Iliaco.

Casa del Sacello Iliaco (I, 6, 4)

A rare second-style decoration, in red monochrome, situated next to the Hall of the Elephants, has collapsed in its lower and upper parts, while the frieze of arms is blistered and is in danger of suffering the same fate (pl. IX, 1, 2). Intervention is urgently required, both for the structure, and to recover and reinstall the decorations.

In many houses protected by a roof, the walls may thus be safe from damage by water, but as pointed out above, the faults in the protective thresholds allow water which has fallen to the ground to penetrate, often quite deeply, into the rooms, and it can also penetrate laterally, as pointed out at the Casa di Adone ferito (pl. XVIII, 3) or fall through the opening of the *compluvium* and flood the floor of the *atrium*. This is the situation at the Casa delle Nozze d'Argento (V, 2, i), whose large *compluvium* opening allows a large quantity of rainwater to enter, causing overflowing from the *impluvium* basin and flooding the mosaic floor. This damp rises by capillarity along the columns, and the whole of this space, the largest of its type at Pompei, and one of the oldest, is taking on a green colour because of the spread of moss and fungus (pl. XV, 1).

The most vulnerable floors are those covered by mosaics. This is clearly shown again at the Casa di Siricus (VII, 1, 47) whose threshold mosaic, bearing the picturesque inscription SALVE LVCRV – “Welcome, money” – is deteriorating because of a lack of protection and exposure to rain (pl. XIX, 2).

Outdoor paintings

The Casa del Menandro (I, 10, 4) provides a good illustration of the unresolved problem of preserving outdoor paintings. This *domus*, which has undergone a major restoration, contains parapet wall decorations showing waders, which have become faded by the action of salts (pl. XIII, 1 and 3). It seems that efforts were made to protect it with a net, but were then abandoned (pl. XIII, 2).

This is also the case of the Casa di Adone ferito (VI, 7, 18) where the state of the column and the bottom of the parapet wall are deteriorating, as is the lower part of the decoration which also features a wader (pl. XVIII, 2). It is also worth noting the gaps in the blue sky of the garden painting in the Casa delle Venere in Conchiglia (II, 3, 3), even though it is protected by an awning (pl. VIII, 1). The painted plaster columns are also in poor condition, for example in the Casa del Citarista (I, 4, 5.25) (pl. XX, 3).

3 – UV aggressions

To protect against the aggressive action of both rain and sunlight, special plexiglass covers have been put in place, particularly to protect painted inscriptions on facades (pl. IV, 2, pl. XII, 1). A simple blind has been used in an attempt to protect the large composition showing several figures in the garden of the Casa di Adone ferito (VI, 7, 18), which has given its name to the *domus*. Unfortunately, the low winter sun has shone on the wall bearing this unique decoration, and the lower third of it has faded considerably (pl. XVIII, 1).

4 – Aggressions by vegetation

The exceptional fertility of the soil in the areas around Mount Vesuvius is legendary. Ancient authors such as Strabo bear witness to this richness, and refer to the good fortune of the farmers of Campania. Immediately after the war successfully waged by Sylla in 91-90 B.C., many Roman families rapidly increased their fortune by the exploitation of this land, which was considered to be blessed by the gods, but which turned out to be accursed.

The composition of the soil, which made it so fertile for farming (now, alas, increasingly rare in a region which is becoming covered with buildings), is also conducive to the growth of wild vegetation, which is taking hold of the ancient city, covering the ground, climbing over the walls, and forcing its way inside masonry (pl. XI). It is possible to almost totally control this plant coverage, as shown in photographs of the site taken in the inter-war years, when large numbers of personnel were assigned to the upkeep of the ancient space, and when the superintendent at that time, Amedeo Maiuri, had adopted a policy of deliberate mineralisation. This choice, made for aesthetic reasons and reflecting a particular feeling towards the ancient city, has today been abandoned. The vision of a city in ruins is too reminiscent of the appearance of cities during the Second World War, and the ecological tendency to make room for nature – wherever this presence is possible and desirable – is now happily taking precedence. The Superintendency thus finds itself caught up in a conflict between a Pompeii which agrees – however discreetly – to become an archaeological landscape park, and the need to control vegetation which should merely accompany the setting, without becoming invasive or concealing the ancient city.

The vegetation gives rise to several kinds of damage. The first and immediately apparent kind is the masking of structures. More seriously, the plants which climb along the walls, laying down their roots as they go, are a source of inevitable breaches in the structures. They are time bombs as they increase in size as they grow, and absorb moisture. Once the swathes of ivy reach the walls, they continue to spread, and as they are caught by the wind they pass on their oscillations to their roots and thus to the masonry. If the walls are covered by rendering, it is this surface layer which suffers the first damage from the climbing plants, which infiltrate rapidly between the wall itself and the rendering, detaching it over a large area.

While the danger from plants is omnipresent, it is primarily at the edge of the excavations, once again, that the threats are most serious. Not only does the mass of earth backed up against the masonry exercise a formidable pressure, but the plants also systematically overrun the ridge

sheathing of the walls or the roofs of the buildings, while their roots are able to penetrate masonry whose mortar has withered away (pl. XI,1). This alarming state of affairs is visible primarily along the whole length of the north side of the Via di Nola. It may be noted in passing that the collapse of the west wall of the peristyle of the Casa di Trebius Valens was to be feared because of a visible ailantus root which had passed through the structures and had already caused a sizeable breach, which the recent bad weather transformed into a complete collapse.

Amongst the particularly aggressive plants, the following may be noted: ailantus (*Ailantus altissima*), artemisia (*Artemisia Annua*), Queen Anne's lace (*Daucus carota*), fig tree (*figus carica*), broom (*Genista*), ivy (*Hedera helix*), bramble (*Rubus tomentosus*) and valerian (*Centranthus ruber*).

5 – Erosion caused by tourists and shortcomings of surveillance

The legitimate success of Pompei as a tourist attraction obviously leads to substantial erosion, simply as a result of the passage of thousands of visitors. The summer brings the highest attendances, with figures of 10,000 visitors per day, and peak figures in certain cases reaching 20,000 visitors.

It is easily understandable that a small town with a population of around 14,000 people (the estimated population of Pompei in 79 AD), would need to clean its public spaces and repair any damaged facilities the day after a celebration attended by more than 10,000 people. But any municipality is able to draw on technical services equipped for this task, which is only occasional. The Superintendency of Pompei is not a municipality with permanent resources to enable it, on a daily basis, to keep in good repair an ancient city, whose residents no longer live in the houses. The houses and the public spaces receive visits from crowds of people, eager to see everything, but all too often unaware of the vulnerability of the place they are visiting.

The pavements provide an immediately apparent sign of this deterioration. Along most of the main axes, and throughout the itineraries systematically taken by tour groups, the ancient pavement, originally made of *opus signinum* (powdered terracotta, mixed with lime and sand, and sometimes inlaid with marble chips), has almost entirely disappeared. The pavements the visitors tread are inadequately protected, or not protected at all, as for example with the very worn mosaic in front of the Casa del Cinghiale (VIII , 3, 8) – where a mere rope and moveable wooden barriers are continually moved aside by tourists – or as in front of the Temple of Apollo where the pavement has vanished, leaving only a hole (pl. XIX, 1). And many other examples could be given of mosaics made of simple *opus signinum*, which are amongst the most ancient in Pompei, and which are not given a great deal of attention, as in the case of the Casa di Trittoleme (VII, 7, 5) which is overgrown with vegetation (pl. XIX, 3).

Even more seriously, in some cases the subsurface is also strongly eroded, resulting in the exposure of the urban water supply lead pipes, which admittedly were laid close to the surface following the earthquake of 62 AD. The degree of erosion is such that these pavements, which initially stood 30 to 40 centimetres above the roadway, are today veritable canals, hollowed out between the kerbstones and the foots of the houses. The reason for the erosion is clear, as access to the house is via the pavement, but also reflects the fact that the roadways – paved with large lave slabs which are uneven and bumpy – are uncomfortable and a threat to tourists' fragile ankles.

Soil erosion

There are few remedies to this ineluctable process of erosion, and the ones available are not very satisfactory. The first is to reconstitute a floor surface which is meant to be similar to that of ancient times, and several streets have thus been provided with new pavements (pl. I,1). Unfortunately, the

material chosen is very different from the original *opus signinum*. And yet a faithful reproduction of this material would not have been reprehensible, given that the model exists (just as it is perfectly legitimate to reconstitute the timber frame of an *atrium*). This modern process of mineralisation, which has a powerful visual impact, and which may well become widespread (particularly for official routes and routes for the disabled) distances the visitor a little more from the preserved ancient reality of Pompeii. The problem is even more acute in the houses in which the floor is generally more luxurious, taking the form either of mosaics or of *opus sectile*, a decorative composition of polychrome marble tiles that outline geometric or figurative patterns. In many houses, regrettably, such floors are given no effective protection, and are trodden daily by a crowd of visitors, who cause real damage even though this is involuntary (in the sense that access is not prohibited). It may be added that the delighted tourists find the emotional power of the visit is enhanced by being able to tread the same floor as the residents of the house did 2000 years earlier.

To return to Casa del Efebo (I, 7, 11), the winter *triclinium* (n°17) is in an appalling state of abandonment. The extremely rich *opus sectile* floor mosaic has been damaged. A medallion in millefiori and a spherical lune in relief are missing (pl. XXII, 1). It was surprising to find that a protective glass cover – still in place in 1985, when the major photographic campaign at Pompeii took place – had disappeared (see *PPM*, I, p. 619-727 and 750-789, fig. 104, p. 677; fig. 112, p. 684).

As for the Casa del Labirinto (VI, 11, 10), mosaics in several rooms are disintegrating. In room 42, the edge of the labyrinth, photographed in June 2010, has been cursorily repaired (pl. XIV, 2), but there is blistering in the *cubiculum* with two beds, and substantial displacements of tessera (pl. XIV, 4).

However, attempts have been made to protect floors in several houses, taking the form of wooden or aluminium railings in areas through which visitors circulate, but these protections conceal the ancient floor (pl. VI,1). It would be better to use glass slabs, which are however more fragile and of course require regular surveillance and upkeep.

Wear from rubbing

It is not just the floors of the houses which suffer damage. In the narrow passages, such as the *fauces* (corridors) between the *atrium* and peristyle, and rooms where space is limited (bedrooms and kitchens), visitors in groups rub against the decorated walls, all too often with their rucksacks, or lean against them to take the best possible photographs, or scratch the frescoes to check their quality.

Graffiti

While the types of damage described above may be considered involuntary, although they are nevertheless the result of negligence, there are other types which are voluntary, and reflect a lack of awareness or complete irresponsibility. They consist of the countless examples of damage in the form of *graffiti* inscribed on painted plaster, which are rarely written but most often engraved (pl. XII, 4), and which are, in a seeming paradox, more numerous in houses which are closed to the public than in others. This is related to one of the problems of maintenance at Pompeii: on the one hand, the lack of custodians, and on the other hand, the derisory effectiveness of efforts to prohibit access to some of the houses. To give one example, the Casa di Trebius Valens (III, 2, 1) – closed to the public by the usual small wooden gate intended to “prohibit” access to some of the houses – has an *oecus* which is completely invisible from the street, and whose walls of frescoes bear imprints over their whole surface, left behind by vandals who – although not criminals – are nevertheless effectively the artisans of the second death of Pompeii. Other similarly irresponsible practices have also taken place, and caused appalling damage, such as young people playing football in a peristyle, and quiet spaces away from the main routes which are transformed into picnic areas. In each of

these cases, there is no technical or natural cause. It is solely a matter of inadequate presence of custodians.

Theft and trafficking of antiquities

We must also unfortunately record deliberate thefts perpetrated for financial gain. The disappearance of a large number of objects left in place – out of a spirit of generosity and for educational purposes – so as to provide the most faithful picture of ancient Pompei, has led the Superintendency to withdraw some items. They have thus in some cases been replaced by copies, as at the Casa del Fauno (VI, 12, 2) and in the gardens of the Casa del Citarista (I, 4, 2.25), (pl. XVII, 1), copies which in turn are sometimes stolen. Another solution is to exhibit the objects in their original location, but behind a solid protective screen, as in a *thermopolium* in the Via dell'Abbondanza or in the kitchen of the Casa dei Vettii (VI, 15, 1). Even when closed off by a door, the houses are not safe against illicit entry, as it is always possible to gain access through a rear wall which is affected by decay, or whose uneven surface provides footholds for a person wishing to climb over. This was how the priceless bas-relief of the lararium, which shows the destruction of the Vesuvian Gate and the *Castellum Aquae* during the earthquake of 62 AD, and was stolen from the *domus* of Caecilius Jucundus.

In the Casa di C. Julius Polybius (IX, 13, 1-3), Alix Barbet witnessed the disappearance of several painted surfaces which were undergoing recomposition. The mask of Medusa in the centre of a vault the custodian had taken her to see, in a worksite shelter, in 1975, together with a peacock, did not figure in the vault which was put back in place. By an extraordinary stroke of luck, she spotted them in the private collection of E. Borowski, exhibited at the Bible Lands Museum in Jerusalem in 1993, and shown in photographs in the exhibition catalogue. Other elements of another vault in the same *domus*, including an owl, did not figure in the neighbouring vault when it was put back in place. Alix Barbet notified the Archaeological Superintendency of Pompei of the facts, and an investigation was carried out.

Since then, in the same sector, on the edge of the unexcavated zone, the Casa dei Casti Amanti has been the scene of several thefts or attempted thefts. Paintings have been cut away on the premises, or damaged during unsuccessful theft attempts, and in some cases recovered, as referred to by A. Varone in recent publications (Cf. Proceedings of the X^e congresso Internazionale AIPMA, Naples, 2010, p. 453-461, and other recovered panels presented at the XI^e Colloquy of AIPMA at Ephesus in September 2010). This type of illicit activity affects many major archaeological sites, not only in Italy. It raises the very real problem of the art and antiquities markets, and their regulation, and that of surveillance, which needs to be carried out by carefully selected personnel.

6 – Restorations

One of the important tasks to be carried out by the Superintendency is the surveillance of earlier restorations, and primarily those undertaken after the Second World War using mediocre and inappropriate materials, whose shortcomings have been referred to above with regard to the collapse of the Schola Armaturarum.

Lintels and doors (pl. X)

There is no counting the number of houses in the city whose bay lintels, reconstructed in reinforced concrete or in untreated timber, are threatening to collapse. Those lintels whose concrete has disintegrated to expose the iron rods (pl. VII,3), which also show signs of serious decay, or whose timber is rotten, have – at least on the most visited streets – been propped up pending replacement (which will hopefully be both aesthetically appropriate and durable). Reinforced concrete is not limited to the lintels, but is used for almost all the structural frames of the houses considered to be

the most precious. The frames are of such poor quality that they have not reached the end of their useful life span and are in most cases in a far worse state of decay than the ancient walls they are supposed to protect. The bay restoration campaign of course includes the replacement of the former doors by metal bays with grilles, painted in timber colours, and enabling a view of the inside of the structure (pl. X, 4).

One of the technical options adopted by the current Superintendency is quite understandably the systematic replacement of these structures, which have become a major danger, as clearly and tragically shown by the collapse of the Schola Armaturarum. This task is carried out in two stages. By reference to an inventory of the large number of lintels threatening to collapse, the lintels are first shored up with metal props to prevent them from falling, which would be dangerous for visitors and would destroy part of the masonry (pl. X,1). In the second stage, the lintels are removed and replaced by new ones. In most cases, the option currently adopted is to install only treated timber lintels matching up with the original ones. However, depending on the situation of the lintel and its loading, steel IPN beams are sometimes used, or more rarely, reinforced concrete beams. It would be preferable to conceal the presence of such materials either by wooden casing or by timber-coloured paint. Any intrusion of a visibly modern material detracts considerably from the image of ancient Pompei which should be presented, and both the stability and durability of the architecture must be ensured without compromising the perceptible morphology of this outstanding heritage.

Maintenance

Other worksites have been carried out for maintenance purposes in the western zone (region VII), where the greatest damage was caused during the 1943 bombardment, and where almost all the houses were affected so greatly as to be unrecognisable. This moreover was the sector in which the digs had begun in the 18th century and had continued, leaving the houses exposed and completely unprotected. The particularly alarming condition of the surviving masonry led the Superintendency – despite the apparent lack of interest shown by tourists in this quarter – to set up mobile worksites there. Their basic tasks consist of removing vegetation and then reinforcing walls, all of which are extremely precarious, either by restoration to restore the masonry to an identical appearance, or by a process (which should be used more often) of injecting liquid mortar, which is the only way to rebind the concrete which forms the loadbearing structure of the walls, without affecting the facings.

Major worksites in progress

All the houses undergoing complete restoration are closed to the public, with the sole exception of the House of the Chaste Lovers (II, 1, 9), which gives out on to the Via dell'Abbondanza. This house is the latest one to have been excavated and protected, and is open for visits subject to special conditions. Under the guidance of the architect Paola Rispoli, the mission was given access to the following worksites: Praedia di Julia Felix (II, 4), (pl. VII), *Thermopolium* di L. Vetutius Placidus (I, 8, 8), (pl. VIII,3), Casa di Paquius Proculus (I, 7, 1), and Casa di Casca Longus (I, 6, 11). In each of the above, all the existing elements are undergoing painstaking restoration. While the walls and floors have been protected pending specialist intervention, the load-bearing structures are being reinforced, while the roofs are being dismantled and reconstituted. The structures are being reconstituted in timber, except in the case of *atria* with large spans, where reinforced concrete is once again being used.

In the thermal sector of the *praedia* of Julia Felix (II, 4), the semi-circular arches of the halls are being entirely rebuilt (pl. VII). The opening in the *atrium* roof, the *compluvium*, which unfortunately allows rainwater to enter this space, has now been closed off by an almost invisible plexiglass dome which allows light in, while keeping out the rainwater, which is collected in a gutter system and drained into the ground. Also in the *praedia* of Julia Felix, it is planned to reconstitute the garden as faithfully as possible, using the plants actually grown by the Romans. It will clearly be several years

before these large houses can be opened for visits, in view of the amount of work that needs to be carried out. A question remains for which no definitive answer has been given, concerning the protective measures to be taken in the future to protect decorations, floors and wall surfaces without causing any serious deterioration and without creating any obstacles to their viewing. The possibility of putting furniture back into the houses (at least in the form of copies) has not been ruled out, given that custodians are present inside the houses, and this is desirable. But we are touching here on one of the major problems of the site in terms of administrative organisation.

This approach was applied in the Casa di C. Julius Polibius (X, 13,1-3), which was equipped for a multimedia visit. The *triclinium* has been furnished with couches with bronze frames which are copies of known originals, and pedestal tables which are copies of those found at Herculaneum. Unfortunately white efflorescence which has fallen on to the couches and tables, and which can also be found on the ceiling and walls, indicates that the room is badly insulated, and impregnated with damp (pl. XXIII, 2-4). Furthermore, when a beam fell into the *atrium*, the multimedia visits had to be interrupted. This is an example of a worksite which has been incompletely managed, as the intention of providing museography involving the use of new technology was not coordinated with a complete restoration of the building.

Other worksites of limited extent

The mission visited other buildings where restoration work had been carried out, but where only certain parts, considered as priorities, had been treated. This was the case of the Casa di Siricus (VII, 1, 47), whose facade masonry underwent a general restoration, and whose main door is new. The most spectacular restoration, which was clearly very effective, can be seen in the great *oecus*, a vast hall with a very high ceiling, whose walls are decorated with frescoes (two of the Trojan cycle, and the third showing Hercules). The walls have been strengthened, and have received a new timber frame and a new roof, which is waterproof, as shown by the lack of any traces of damp on the walls. One weak point remains however, which could detract from this excellent level of protection in the long-term: the large opening towards the garden, which occupies one whole side of the hall. It is quite certain that – as observed elsewhere (e.g. Casa di Adone ferito) – pouring rain, which is today kept out by a tarpaulin, could cause damage to these admirable paintings if the opening is not closed off.

Unfortunately, for practical reasons, the restorations have been limited up to now to these worksites. They have clearly given pride of place to the elements of the *domus* which are the richest in every sense of the term, but the fear is that the other rooms, which have no roofs, and the *atrium* and garden areas, which have suffered considerable decay (pl. XX, 1, 2) and are supported by props which are already ancient, will not measure up to the standard set by the restored parts, when the general worksite resumes.

Mention may also be made of two houses which have undergone restoration work on the initiative of external bodies: the Casa della Fontana piccola (VI, 8, 23) and the Casa del Centenario (IX, 8, 6). In the former, the restorers have focused mainly on restoring the large painted decoration next to the nymphaeum, to which the house owes its name. Waterproofing work has also been carried out in the main *atrium*, where a plexiglass skydome has closed off the *compluvium*; unfortunately, as the roof is now leaking, water still falls into the *atrium*. In the Casa del Centenario, the University of Bologna has installed an experimental portico which reconstitutes the facing of the *atrium*. Installing this protection was indeed a welcome move, as this space still retains its mosaic facing. However the material chosen, aluminium, for both the columns and for the facing, in a design intended to be minimalistic and more economical than the usual timber frame of the *atrium*, produces a disastrous aesthetic effect (pl. XII, 3). Once again, one can only regret the fact that “identical” restoration is not the first option considered, as at Pompeii this is very rarely an archaeological betrayal, given the

exceptionally good level of information available. Even at Pompei, this option does have limitations, for example when the walls are not high enough, making it impossible to determine the datum level for the frame. In such cases, protection using a roof may take on another aspect, supported by a metal structure which is kept as discreet as possible (several experiments along these lines have been carried out).

Inappropriate structures

An aluminium structure has also been erected in region I, to protect several mouldings of Pompeians, but this time without the minimalistic option (pl. XII, 2). It resembles an industrial building or hangar, whose function and volume seems incommensurate with the moderate interest of the mouldings (which have moreover been vandalised by unruly visitors) while so many major works are left without protection. Near to this shelter, a few dozen metres to the south, above an unexcavated sector, is another hangar, which is just as visually jarring, and far bigger, used as a storehouse for site equipment (pl. VI, 3). The mission simply wishes to express the hope that this structure is only temporary, pending the construction of a depot set up outside the city walls.

The mission also wishes to question the interest and use of two modern glass and metal “caterpillar-shaped” buildings at the entrance to the amphitheatre (pl. VI, 2). Since the mission, there have also been press reports of a major new structure close to the Porta di Nola. It is important that all new buildings, particularly those erected by the Superintendency, on or close to the property are designed with great sensitivity for the Outstanding Universal Value of the property and its visual setting.

Inappropriate masonry

Mention should finally be made of the restoration of the main theatre, in which permanent seating steps in masonry have now been built. This will certainly facilitate theatrical productions in the summer, but has only a tenuous link with the theatre’s ancient function, as it thus becomes a mere place of entertainment with no link to the ancient city. Furthermore, the choice of steps which have no morphological connection with the ancient seating steps, and are made of yellow tufa masonry, detracts from the aesthetics of the structure by affecting the silhouette of the *cavea*.

HERCULANEUM

The mission was welcomed by the site director, M.P. Guidobaldi and by J. Thomson, head of the Herculaneum Conservation Project team set up by Packard Humanities Institute (PHI), a nonprofit organisation which has been entrusted with planning the conservation work for the ancient site and its surrounding area. Clearly the taking over of planning (which should then theoretically be carried out) relieves the Superintendency of a workload which is part of its appointed task, but which it is unable to assume in its current configuration. Such interventions however – which could be contemplated at Pompei – must imperatively remain under the control of the Superintendency alone (with regard to scientific and technical control and educational communication). The Superintendency must, in the mission’s view, ensure that no excessive staging should take place, involving the introduction of inappropriate decoration, narrative fiction or anything which could damage the heritage. Furthermore, it is essential that all those carrying out interventions are qualified for heritage restoration work. Its intervention must be strictly limited to the restoration of architecture, its decoration, and archaeological information, while complying with a strict ethical code.

On the site, several risks of damage to the fabric were revealed, particularly – as at Pompei – by the penetration of rainwater by roof infiltration, water running over the walls, and floor waterlogging. The repair work to the ancient sewers should improve the situation.

While new doors are currently being installed on the boat hangars, it is worth noting that the terraces above the hangars are not watertight (pl. XXV, 1).

Works are currently in progress at the Terme Suburbane, and the effects of damp are perfectly visible in the condition of the terrace (completely green) and by the line of damp on the external walls (pl. XXV, 2).

The *atrium* of the Casa di Nettuno e Anfitrite, which is unprotected from the wind and rain, is bearing the brunt of this deterioration (pl. XVI, 1).

As for the Casa del Salone Nero, which is currently undergoing restoration, the pouring rain is leaving puddles in the peristyle, in which several zones of black mosaic with white tessera have disappeared (pl. XXV, 2).

It should be noted that the work in the Casa del Rilievo di Telefo has been completed: the great hall with *opus sectile* wall mosaics has been fitted with a new roof, and the clearing out of the base of the excavation led to the recovery of sculpted wood structures from the original ceiling.

Mention should be made of a risk of a landslide on the steep slope dominating this house. On the other hand, towards the modern-day town, the grassy bank has been replaced by a retaining wall which should be more effective in holding the ground in place. However, the lack of vegetation could leave to the overheating of buildings exposed at the lower level, by the reflection of sun rays.

While much has been done through the cooperation of the Superintendency and the Herculaneum Conservation Project to improve the basic standards of site maintenance and re-instate the ancient drainage systems, much still remains to be done. Six houses in the main part of the Herculaneum site await major conservation works. The very large area excavated to gain access to the Villa del Papyri contains further major buildings urgently in need of conservation.

OPLONTIS

We were welcomed by L. Fergola, who took us round the Great Villa of Poppea, and the small but richly endowed archaeological storehouse. The whole of the site has been restored well, and there is no apparent sign of damage or risks. However, in thermal room n° 8, the lower part of the decoration of Hercules in the garden of the Hesperides is affected by decay, as is the ceiling of the Exedra in which it is located (pl. XXVIII, 2, 3). In *triclinium* 14, the back wall needs to be watched closely: white marks are getting larger at the back, particularly on the basket of figs, as is shown by a comparison of photographs taken from one year to the next (pl. XXIX).

The mission merely regrets certain debatable museographic choices, such as a large electrical cabinet on the facade portico, and at the limit of the excavation at a particularly spectacular point (pl. XXVIII, 1). Similarly, fluorescent tube lights on particularly cumbersome supports, which are visible along the painted walls, and which furthermore are covered by a shockingly thick layer of dust, which even cursory cleaning would remove (pl. XXVIII, 2).

There are a number of other potential threats.

Volcanic Eruption: Potentially the most drastic threat would be the eruption of Vesuvius which, of course caused the destruction of Pompei and the other Vesuvian monuments in the first place. A

serious eruption on that scale would be a major disaster to the whole of the Naples region with severe consequences both to human safety and to property. The Italian government has established contingency plans for responding to an eruption of which 15 days notice could be expected. These involve the total evacuation of the civilian population. At Pompei, the military would remove all movable heritage to Caserta. There is regular on-going liaison with the military.

Earthquake is the second major threat and the 1980 earthquake had a major impact on the property. It is not possible to strengthen archaeological structures so that they could resist seismic shock and there is a real risk. Some work on post-seismic recovery is underway, for example testing the use of aerial drones and robotic cameras to assess damage after a large-scale disaster. The mission noted that it would be helpful in such a situation to have an up-to-date record of the condition of the site. As noted above, the GIS at Boscoreale is based on data recorded at least nine years ago and there seem to be no firm plans to update it. It would also be sensible to keep a duplicate copy of the key records somewhere outside the area which could be at risk in an earthquake. At Herculaneum, the HCP maintain an up-to-date GIS.

Extreme weather events are also clearly a risk. The collapse of the Schola Armaturarum was precipitated by the major rainfall of November last year. This was the worst recorded for 80 years with double the amount of rain normal for that month. As noted above, the collapse was probably caused by the effect of water accumulating in the adjoining unexcavated part of Regio III as well as by the very heavy roof of the Schola.

Drainage is a major issue and risk factor at all three parts of the property. At Herculaneum and Torre Annunziata the result of the eruptions of AD79 and subsequent excavation is to place the exposed ruins at the base of a large pit from which water can only be removed by pumping. At Pompei the unexcavated parts of the site impose pressures on any drainage system within the site. It is essential that site drainage is improved as soon as possible at both Pompei and Herculaneum. At the latter, the Roman drainage system is being reinstated to collect water on the site and guide it away to the former sea-shore from which it can be pumped out. As well as providing sufficient drainage it is also essential that roofed buildings are provided with adequate rainwater goods and protection to ensure that rain is not directly falling on decorated walls or floors and is not penetrating walls. This is not possible at Pompei because large parts of the site have not been excavated. A major part of the need is to prevent the unexcavated areas becoming waterlogged which can then lead to collapses of buildings abutting these areas, as happened with the Schola. Plans are in hand to introduce surface drainage in the unexcavated parts of the site to intercept rain water before it can sink down into unexcavated strata, particularly the 5-6m deep deposits of lapilli from the excavation, and then to pump it and rain falling on other parts of the site into the restored Sarno Canal. Drainage has been under examination since 2001 and it is hoped to complete the necessary studies by the end of February this year with drainage work in the unexcavated areas beginning during the year. The mission believes that this work is of the highest urgency and should be given priority. These measures should be integrated into the risk management plan which should be developed as part of an overall review of the property management plan.

3.3 Other issues and developments

Presentation, interpretation, tourism

The management of visitors is clearly a major issue. Pompei received 2.3 million visitors in 2010. At the busiest times of the year (spring/ early summer) there are 300,000 per month and on the

busiest day of the year (Easter Monday) there are 15 – 16,000 visitors. These are very large numbers to absorb on a site which is essentially a fragile archaeological monument, even one as large as Pompei. Herculaneum receives around 300,000 visitors annually in a much smaller area, while Torre Annunziata has around 40,000 visitors annually, essentially visiting one large country house. There are essentially two issues to consider. The first is the management of visitors so that they do not damage the archaeology. The second is to enable them to have an enjoyable and informative experience. Considerable efforts have been made to tackle both although there are still pressures (see above pp. 22–24).

At all three parts of the World Heritage property, visitors receive, as part of their admission ticket a map and small guide leaflet (in a variety of languages) which provides basic orientation both to the archaeology of the property and to the facilities available to visitors. This is an excellent idea which could usefully be adopted in many places.

At present, however, less than half the site at Herculaneum is currently accessible to the around 300,000 visitors who come to the property each year. It will be important to ensure that visitor access is managed to ensure that the site is not damaged and also that visits are enjoyable and educational. Some initiatives are in hand. There is a new visitor centre and plans to refurbish the existing museum. With the City of Herculaneum, the (HCP) and the Superintendency in 2007 created the Herculaneum Centre. This unites the Superintendency, the City Council of Ercolano and the British School at Rome (www.herculaneumcentre.org) in an initiative to maintain the HCP legacy long into the future both in terms of access to, safeguarding and use of project results but also in keeping alive research, training and forms of partnership. This will ensure Herculaneum that remains a sort of open classroom for the conservation of archaeological sites and a model for stronger links between archaeological heritage and the communities which surround it.

At Pompei on-site interpretation panels are being standardised as are railings and other modern fittings. These are useful steps but there is still far to go and poor examples of past presentation efforts can still be seen.

Signs of earlier efforts at museographic presentation remain, and it is interesting to analyse them. In the Casa del Citarista (I, 4, 2.25) for example, large plastic information panels have become illegible because of the action of rain and sunlight (pl. XVII ,2); large photographs of the main paintings – of which the originals are now in the National Archaeological Museum of Naples – are still hanging on the walls, and have faded only in the zones exposed to UV rays (pl. XVII, 3, 4). One is left with the impression that Pompei is being used as an experimentation site, with all the risks this raises.

Considerable efforts are being made to spread visitors around the site at Pompei. The lower Porta Marinara entrance is being improved with the development of a new exhibition and entrance facilities in the former Antiquarium. More emphasis has been put on the Amphitheatre entrance to the site, which links directly to the modern town of Pompei. A new visitor centre has been placed here and all organised school visits (200,000 – 300,000 visitors annually) must enter by this gate. The new ‘Friendly Pompei’ route, suitable for wheel chairs (see below) starts at this gate as does a cycling route around the perimeter of the site. Visitors are able to hire bicycles and follow a track along the northern side of the city as far as the Porta di Ercolano. At various points, cycles can be parked to allow their riders to walk into the city to points of interest. However, the main axis for most visitors is still from the Porta Marinara to the Forum and then along the Via dell’Abbondanza.

Finally, the Superintendency of Pompei has drawn the mission’s attention to a welcome initiative taken in the interests of visitors with reduced mobility. Obviously, the possibility of visiting Pompei in

a wheelchair is very limited, and access to the houses is all but impossible. Ramps and raised grilles have now been put in place next to obstacles (such as pavements, thresholds and steps) on a special route, to enable wheelchairs to pass. It is not however possible to install such facilities systematically, as they have a strong visual impact, and mask the ancient floors. This is a human problem which requires a solution to overcome the difficulties raised by disability. At Pompei as at many other sensitive places, it is essential to design systems which are both functional and satisfactory for everyone.

Within the centre of the city, the Superintendency has concentrated a lot of effort on conserving and interpreting a number of houses so that more can be opened to the public to help spread the load. Within some of the houses there have been innovative attempts at interpretation, notably in the Insula of Chaste Lovers, where visitors can walk above the two houses which are under excavation and there is audio-visual interpretation. None the less, much remains to be done.

Public education and visitor flows

First of all the public needs to be educated, by explaining to them that this is an open-air museum which must be respected: visitors must not climb on the walls; they should walk in the street so as not to wear out the ancient pavements; and in the houses, they should avoid walking on the mosaics. Obviously, they should not inscribe graffiti on the walls, or lean against the walls.

To avoid wear, it would be a good idea to increase the number of entrances into the site of Pompei (in the past there were a large number of entrances); perhaps reopen the Circumvesuviana station which stands at the other end of the town. The entrance ticket includes the main sites, and should also include Stabies and Boscoreale – if this is not already done – so that the visitors will be spread over a greater number of sites by offering them more choice.

Surveillance and control of custodians

The custodians no longer wear uniforms and are not identifiable. The tag they wear around the neck is not visible. They should at least wear a clearly identifiable cap, as they did in the past, and they should be placed at strategic locations. On many occasions we observed them grouped together in threes or fours, rather than remaining in a specific position.

Control of guides

The official guides should be controlled in several ways. The service they provide to their customers should be controlled by an examination, as we often heard commentaries of poor quality. The guides should be encouraged to participate in the process of site surveillance by giving visitors advice. A system should be set up for the supervision of groups of tourists and school groups by an official guide.

During peak visitor periods, it should be possible to call on archaeological students from the region of Naples or Rome to help supervise visitors. The problem of unauthorised guides remains. Efforts should be made to bring them on board, provided that their knowledge is brought up to date.

These suggestions involve the creation of a fully-fledged tourism management department, and contacts with tour operators. The mission considers that they should be included in a public use plan for the property.

Access to houses

As tourists' complaints often focus on the countless sectors which are closed, and the very limited number of major houses open to the public, the current programme centres on "key buildings", considered particularly important because of their size and decoration, which are located on the main visitor itinerary. However, a few comparative figures clearly reveal one of the reasons for the congestion of the sectors open to the public: the fact that many houses and other itineraries are closed, which could otherwise enable a diversification of visitor itineraries.

Always open in December 2010: 15 restored buildings, including only 5 houses:

Tempio di Venere,	Iupanare,	Casa della Venere in
Tempio di Apollo,	Teatri,	Conchiglia,
Basilica,	Fullonica,	Casa della Nave Europa,
Foro Civile,	Casa dei Ceii,	Anfiteatro,
Terme del Foro,	Casa di Loreio Tiburtino,	Orto dei Fuggiaschi
Casa del Fauno,		

Open the first four days of December: 14 or 15 houses all day, plus the 15 monuments which are always open.

In all there are 1435 buildings, including 515 houses. 93 houses contain substantial wall paintings. 217,000 square metres contain mosaic pavements. In 1956 it was possible to visit 66 restored houses. At present important houses are excluded, such as the Casa dei Vettii which is still being restored; experience has shown that a house which is open – provided that it is kept under surveillance – is a house which is better maintained.

This results very largely from the fact that only 23 custodians are on duty on the site at any one time. This can only be remedied if there are more custodians employed. Currently there are 166 custodians working in 5 shifts. This contrasts to 215 in 1987 and 182 in 1997 and is a reduction over 25 years of nearly 25% at a time when the number of visitors has increased considerably. The shortage of custodians means that investment in conservation and improved access to houses is ineffective in terms of visitor management although obviously essential in terms of conservation of the Outstanding Universal Value of the property.

Archaeological excavation

The World Heritage property is known entirely as the result of archaeological excavation over the last two centuries. Without excavation the sites would have remained unknown. However each excavated structure adds to the burden of necessary restoration and maintenance. Exposing buildings and their decoration leads to deterioration compared to remaining buried. Excavation inevitably also removes the contextual evidence for the structures which in the future can only be examined from the records of the excavation. This is a paradox underlying all excavation work. In order to learn more, the archaeologist has to damage the evidence which is being studied. Also, exposure destroys the stable conditions which have protected structures buried below ground and expose them to further decay and deterioration unless they are conserved and maintained.

At present, outside the Insula of Chaste Lovers there is no major excavation at Pompei. At Herculaneum there has been no major excavation since the work on the Villa of the Papyri. This has resulted in a major new excavated area (see PI XXVII) containing a small part of the Villa and a number of other buildings. Coping with this will require a major diversion of resources by the Superintendency to conserve the recently discovered structures. So far they have installed

drainage and pumps to keep the area free of water and carried out a certain amount of initial conservation. Until backlogs of conservation are dealt with and maintenance is adequate for all parts of the property, there should be no further major excavation within the World Heritage property.

Over and beyond this it is important that all interventions and research projects on any archaeological site are planned to provide the maximum addition to knowledge for the minimum disturbance to historic structures or deposits. Ideally all research work on the site at Pompei should support an overall research strategy which should be developed by the Superintendency in consultation with interested parties. Such a strategy should cover not just straight archaeological research but also methodologies for conservation and sustainable use of the site. The starting point for such a strategy should be an assessment of what is known about the site, leading into an identification of areas or topics about which more needs to be known and also to identify ways in which necessary research should be carried out. An important aspect of any research strategy for Pompei should be to minimise future maintenance commitments at least until current maintenance backlogs have been dealt with.

Landscaping

Four experiments – whose results can today be checked – have been tried at Pompei. The earliest is the plantation of conifers in the quarter of the amphitheatre and the Palestra Grande. Their presence, immediately on entering the site (Piazza Anfiteatro), gives a strong impression of entering a shaded park, with the elegant outlines of the trees and the shade (so welcome in summer) seeming to invite the visitor to take a pleasant walk. There is a drawback however, in the form of the presence of invasive roots which work their way under the foundations, giving rise to damaging forces which were also at work in the ancient city of Ostia. Because of this factor, the presence of conifers is strictly limited to this sector where building density is low.

The second experiment was carried out in the southern area of Pompei, on the outside of the city wall, where – in the absence of all architecture (because the area stands above a non-excavated necropolis) – a veritable promenade has been developed, including a path over the hillock which covers the ramparts, providing the visitor with a general view of the site.

The third experiment consists of recreating in spaces that were originally planted the appearance that they had in ancient times. Several peristyles and gardens have thus been provided with amenities which recall their original function and arrangement. Amongst the most important houses to have undergone works of this type are the Casa dei Vettii (VI, 15, 1), which unfortunately has been closed to the public for many years, the Casa di Octavius Quartio (also known as the Casa di Loreius Tiburtinus) (II, 2, 2), the Casa del Citarista (I, 4, 5-25), the Casa di Pansa (VI, 6, 1), the Casa della Venere in Conchiglia (II, 3, 3), (pl. VIII,1), and the Villa di Diomede, which is situated outside the walls.

Another aspect of this recreation of the initially existing vegetation has come about as a result of the initiative and research work of Wilhelmina Jashemski, who has focused her efforts on the gardens of Pompei, and who has succeeded in locating unbuilt enclosed areas in which vines were grown for wine production. It is in the eastern quarters, *intra muros*, close to the amphitheatre and the Palestra Grande, that the vineyards were located, as these areas had not yet been caught up in the urbanisation process. Vines have been replanted in the same areas, and their exploitation has been entrusted to outside companies, which not only grow the vines, but also produce a wine which is successfully marketed.

Mention should also be made of the reconstitution of light wickerwork barriers, to mark the limits of sectors, in interior gardens, such as that of the Casa dei Pittori al lavoro (IX, 12, 9 (pl. XXIV, 1)

Finally, the fourth experiment, which covers the whole site, has two aspects. The first is the decision to destroy all parasitic vegetation, primarily ivy, whose invasive presence is particularly damaging. Its destruction revealed large areas of wall surface whose often alarming state had been hidden behind the foliage. The second aspect is a reversal of the previous situation, as lawns of grass are laid on flat surfaces, wherever the ground has lost all trace of pavement (or has never been paved). The drawback with the lawn areas in the houses which have no floor is that they cause uncertainty in the eyes of the visitor, who is unable to distinguish spaces which were initially roofed from open-air spaces. This distinction can only be made in one way, and this has been done in a certain number of houses: the laying of gravel on all “indoor” floor surfaces.

These options – which encourage a particularly pleasant vision of Pompei, without in any way detracting from an understanding of the ancient city – must of course be accompanied by constant surveillance to prevent the return of the invasive plants, which must be removed as soon as possible. This apparently simple solution (as in many other cases) is only workable with the permanent presence of sufficient qualified personnel, who are familiar with biodegradable systemic products which can selectively eliminate most of the plant species involved without adversely affecting the environment, the only disadvantage being that treatments must be carried out more frequently.

Buffer Zones and setting

The buffer zones for the three parts of the property are very small and appear to have been defined either to join up separate parts of the property or to include areas of archaeological potential. Little attention seems to have been given to the visual setting of the three parts of the property. This possibly reflects the fact that these are archaeological sites to some extent divorced from their modern surroundings. However at both Pompei and Herculaneum there are important surviving visual links from within the site to the surrounding hills, particularly Mount Vesuvius. These need to be maintained. It is also important to manage the surrounding area to avoid unduly intrusive elements in the surrounding townscape. When providing new structures needed for the better management of the property, it is essential that the site managers ensure that they are carefully designed so that they do not have an adverse visual impact.

This is possibly less of an issue at Pompei where the site is higher and so large that the visitor is in many places unaware of the urban areas around the site. At Herculaneum and Torre Annunziata, the visitor is very conscious that the site is in effect a large hole in the ground surrounded by modern development. At the latter in particular, some of the development does jar with the ability to appreciate the nature of the property. Obviously these are living settlements which will continue to need to change but the authorities should consider whether there should be guidance as to what kinds of development might be appropriate within the visual setting of the property. The authorities should also consider the extension of the buffer zones of the three parts of the property so that they do not just protect immediately adjacent areas or archaeological potential but also provide protection of the visual setting of the property and of the important visual links with Mount Vesuvius.

3.4 Positive or negative developments in the conservation of the property since the last report to the World Heritage Committee

There have been no previous State of Conservation reports to the World Heritage Committee.

3.5 Information on any specific threat or damage to or loss of Outstanding Universal Value, integrity and/or authenticity for which the property was inscribed

The major ongoing threat to the property is decay of the exposed remains, discussed elsewhere (see Section 3.2). Uncontrolled and excessive visitation is also a potential risk (see Section 3.3).

4 ASSESSMENT OF THE STATE OF CONSERVATION OF THE PROPERTY

The property was inscribed on the World Heritage List because the impressive remains of the towns of Pompei and Herculaneum and their associated villas, buried by the eruption of Vesuvius in AD 79, provide a complete and vivid picture of society and daily life at a specific moment in the past that is without parallel anywhere in the world. This rather broad definition is the basis for any assessment of whether or not the Outstanding Universal Value (OUV) for which the property was inscribed, including its authenticity and integrity, are being maintained adequately. In making such an assessment it is important to take into account the physical characteristics of the site and the general limitations of maintaining exposed archaeological sites and ruins.

Pompei, Herculaneum and Oplontis are essentially exposed ruins which have been excavated at different stages over the last two centuries. Any ruin is vulnerable since it is maintained in a condition which is totally unnatural. In this case, the sites are very large – Pompei is, indeed, an entire city while Herculaneum is a substantial part of a coastal town. Unlike many ruins, most of the buildings now visible were not designed to have a life of several centuries. Again unlike most ruins, they preserve extensive remains of decoration, flooring and, particularly at Herculaneum, carbonised timber which makes them additionally sensitive. They have also suffered from the effects of volcanic eruption and earthquake.

Some degree of decay is therefore inevitable. As with most ruins that have been exposed for any length of time, they have also suffered in the past from inappropriate treatments, such as the use of reinforced concrete, possibly a factor, for example, in the collapse of the Schola Armaturarum. The loss of the Schola is significant and has, inevitably, had some impact on the OUV of the property.

Given the overall size and scale of the property, however, much of it is in a good or reasonable condition. However there are individual buildings and some parts of the sites at both Pompei and Herculaneum which are not in a good condition. There is therefore the risk of further structural collapse or of significant loss of decorative or architectural features (see 3.2 above). Such collapses would cumulatively have a significant adverse impact on OUV. Such events should be entirely avoidable through effective conservation and maintenance. There is also more insidious gradual decay, for example of the colours of wall paintings and the effects of both rising and penetrating damp. Such decay can never be stopped entirely but it is important that the rate is slowed down as much as possible.

Authenticity is essentially about the credibility of the evidence for OUV (*Operational Guidelines* para 79-86). At the time of inscription, ICOMOS considered that the authenticity of both individual structures and the historic urban fabric was very high. This position has not changed significantly since then. The archaeological deposits and the standing structures still generally maintain a very high standard of authenticity.

There are two areas of concern. The first is the loss of fabric from collapse or general decay which inevitably has some impact on authenticity in that evidence has been lost. The second is inappropriate restoration and it is suggested that the recent restoration of the theatre has not been wholly true to the original evidence, particularly in the type of stone used to restore the seating. On the other hand, this approach is that previously adopted many years ago for the next-door Odeon.

Broadly therefore it can be said that all three parts of the property maintain high levels of authenticity in the evidence for their form and design, and the survival of their materials and substance. Authenticity has been increased in recent years by conservation work to replace inappropriate materials used in previous restoration work, for example the replacement of concrete lintels by wooden ones. The location of the property still maintains authenticity of location and setting in that the relationship with Mount Vesuvius is not obscured at either Pompei or Herculaneum. The sites also convey strongly the nature and scale of the disaster that overtook them in AD 79.

Integrity is essentially about the wholeness and intactness of the property (*Operational Guidelines* paras 87- 89). The three tests applied to cultural properties should assess the extent to which the property (a) includes all elements necessary to express its OUV, (b) is of adequate size to ensure complete representation of the processes conveying the property's significance, (c) suffers from the adverse effects of development and/or neglect. At the time that Pompei was inscribed, integrity was not a formal requirement for cultural properties so it was not assessed by ICOMOS at that time. This is something that will need to be covered in the Statement of Outstanding Universal Value which must be prepared by the State Party by 1 February 2012.

In terms of the three tests, the site at Pompei includes the whole of the ancient walled city. At both Herculaneum and Oplontis the remains obviously extend outside the boundaries of the property under the adjoining urban areas but they still provide a complete and vivid picture of society and daily life at a specific moment in the past that is without parallel anywhere else. The three areas are also sufficiently large to give a clear understanding of the character of the site and of its OUV.

The *Operational Guidelines* say (para 89) that the physical fabric of the property and its significant features should be in good condition and the impact of deterioration processes controlled. For much of this property, this is the case, but as identified by the mission there are significant elements of the property which are not in good condition and where the processes of deterioration are not fully controlled. If these issues are not rectified there could in the next few years be problems over the integrity of the property.

For the present, though, the property does maintain its OUV, including authenticity and integrity, despite some evidence of deterioration and the fact that some of the structures will be at risk if conservation work and maintenance are not carried out to them. If remedial measures are not taken, the OUV of the property could be at risk within the next few years.

5 CONCLUSIONS AND RECOMMENDATIONS

The visit - which closely examined most of Pompei, Herculaneum and the villa of Oplontis - enabled the mission to gauge the vulnerability of these sites of inestimable historical importance, by making an archaeological assessment, but also by adopting a more critical view (in both the positive and negative senses of the word). The heads of the site – superintendents Jeannette Papadopoulos and Teresa Cinquantaquattro, and director of excavations Antonio Varone – were extremely cooperative in guiding the investigations, and at no time excluded or concealed any aspect which the mission members wished to see. All the administrative and statistical data were communicated to them (cf. annexes), while fears about budgetary and staffing restraints were expressed to them, without any spirit of polemical argument, but with a very great concern and moderation, in the interest of the long-term future of this unique heritage, constituting an enormous responsibility which lies in their hands.

The members of the mission of course took careful note of the “inside view” expressed by their Italian colleagues, but consider that they should also point out (from their external viewpoint which admittedly facilitates criticism) the ill-advised decisions taken by certain bodies which have invested efforts and money in initiatives which do not seem to be essential, and should not be given priority. This was probably done with an educational aim in mind, but may also reflect a certain attraction for “entertainment archaeology”. In the view of the members of the mission – who are familiar with Pompei and have written studies about the site – there is no need for a theatrical presentation of the city (any more than of Herculaneum), however tempting this type of approach may seem. Pompei “naked in all its glory” is enough. It is capable, with a minimum of discreetly presented information, of talking to visitors, and revealing itself to them without any artificial aid. In the mission’s view, this is the approach which should guide the efforts of those entrusted with the responsibility of saving the Vesuvian cities.

The chosen approach at the present time – based on the most frequently adopted visitor itineraries – has understandably led to a focus on the restoration of the richest houses. This is a logical choice in terms of interest for visitors, and in terms of technical necessity (precisely because of the deterioration largely attributable to the influx of visitors to which the houses are subjected), even though this choice is not always the most rewarding in archaeological terms. As a result, for example, a complete restoration of excellent quality has been carried out at the Lupanar – with a new interior visitor circuit – and is of course proving as successful as expected, while the splendid *domus* of the Vettii has been closed for the last eight years, even though it is infinitely richer than the Lupanar from every viewpoint.

It is regrettable to see that other remarkably important houses –located away from the most popular visitor itineraries – are currently under threat as they await a rescue which is ruled out by a lack of resources. The houses in question include some mentioned earlier: the Casa del Centenario, the Casa delle Nozze d’Argento and above all the Casa del Efebo. It is also deplorable that the *Castellum Aquae* (the water tower), a purely technical building which is particularly representative of the site’s remarkable urban amenities, remains unknown to visitors.

On a wholly positive note – a long way from the bitter criticism and sensational tone of the press (which in some situations is quite right to sound the alarm bell) – the visit to the active worksites left an extremely favourable impression on the mission members, who were thus firstly able to gauge the time and resources needed to keep alive an ancient city in which, to date, 1435 buildings have been exposed to the weather and its vicissitudes. The visit brought home to them the complexity of the work, and the extremely specialised skills of the technicians qualified to carry out conservation tasks. Pompei is still awaiting sufficient numbers of such technicians, who are able to combine their knowledge of ancient and traditional techniques with contemporary processes, materials and

products, so as to ensure the lasting conservation of the architecture and countless treasures of Pompei.

The mission came to the perfectly clear conclusion, during its visits, that the best efforts of the directors of the Vesuvian cities and the skills of the inadequate numbers of technicians working on the restoration worksites are insufficient in view of the scale of the task. The mission therefore considers itself duty bound to draw very firmly the attention of the supervisory public authorities – i.e. the Ministry of Cultural Properties, with the inevitable involvement of the Ministry of Finance – to the fact that while the whole of Pompei is not yet a World Heritage Site in danger, some of its most important component parts fall into this category. It therefore requests that the commitment given, when the request for inscription on the World Heritage List was made, should be respected as strictly as possible, so that the alert sounded by the collapse of the Schola Armaturarum should remain an isolated event, and so that the announcement of the second death of Pompei should not become a reality.

The disappearance of the job of restoration specialist, and thus of qualified personnel recruited on the basis of specific criteria, and its replacement by the use of external contractors whose real level of qualification – essential for such delicate tasks – is unknown, and who are chosen on the basis of tenders, create a situation which makes it difficult to ensure regular maintenance, controlled on an everyday basis.

The mission has come to a number of conclusions and makes a number of recommendations. These fall into four groups:

- A. Immediate measures to improve conservation and maintenance
- B. Measures to maintain and enhance the skills base and provide necessary information
- C. Measures to improve management of site and understanding of OUV
- D. Follow-up action by UNESCO

A Immediate measures to improve conservation and maintenance

Clearly the first priority for the future is that work should be focused on dealing with the problems facing the fabric of the property. This falls into two main areas. Firstly, it is necessary to restore the damaged houses, identified as being at risk by the mission (see Annex 5) or in the condition survey recently carried out by the Superintendency. Linked to this is the necessity to tackle the maintenance backlog, particularly at Pompei, so that the whole site is put into a good condition of repair. Further losses could have a significant impact on the OUV of the property.

Equally important is the need to tackle the factors which have allowed the backlog of conservation work to develop in the first place. In the first place it is necessary to provide effective drainage at all three sites and particularly at Pompei where it is clear that excessive moisture in the soil is a major factor causing decay and collapse.

Recommendation 1: The mission recommends that priority in work programmes should be given to dealing with the maintenance backlog at the property, the restoration of those buildings identified as being at risk by the mission together with any others identified in the condition survey carried out by the Superintendency.

Recommendation 2: The creation of effective drainage systems, particularly at Pompei, should be carried out as soon as possible to remove one of the basic causes of decay. As well as dealing with ground drainage, as far as possible rain should be prevented from entering roofed structures.

The mission considers that both these tasks must be carried out urgently and that it is necessary to achieve a significant improvement in both these areas in the next two years. If this work is not carried out, the risk to the property will be increased and the Outstanding Universal Value could be threatened.

B Measures to maintain and enhance the skills base and provide necessary information

However the mission was also concerned by a number of other issues which contribute to the failure to focus sufficiently on the urgent needs of conservation. The mission were struck by the very small number of maintenance staff available and noted that as a result all conservation and maintenance work is carried out by contractors although it is all specified and managed by the technical staff of the Superintendency. With present restraints on staffing and resourcing, this is likely to remain the case for some years. It is essential therefore that any contractors are properly qualified and employ workers with the right skills. Given the restrictions on recruitment, the mission considers that the Superintendency should examine the ways in which the Herculaneum Conservation Project have provided professional advice and see how these could be use to augment the professional staff of the Superintendency.

Recommendation 3: The mission recommends that all contractors should be assessed for their ability to carry out skilled conservation work before they are allowed to tender for conservation work in the World Heritage property.

Shortage of technical staff is also a limiting factor on the ability to carry out conservation work. It is important that there should be adequate staff to deal with the planning and supervision of necessary work, particularly since contractors require more supervision.

Recommendation 4: The Superintendency and Ministry of Culture should determine how many technical staff are required to carry out an effective programme to eradicate the current backlog of conservation and maintenance and should take steps to provide those resources as soon as possible.

It is clear that visitation to the property is a factor affecting its management in several ways. Access to World Heritage properties is important as a means of enabling the peoples of the world to learn about their common global heritage. More practically, it is also an important part of the management strategy for the property since it is primarily from the income earned from visitation that conservation works and improvements are funded. The mission saw many excellent features of visitor management but we noted that visitor pressure is still an issue which in places is causing damage or could do so in the future. The management is tackling this in various ways but primarily by trying to spread the load around the site to reduce pressures on those parts which are over-visited. Particularly at Pompeii, a considerable amount has been spent in recent years in increasing the number of places that they can visit. However, this good intent is frustrated by the lack of custodians on site which means that many houses cannot be opened on a regular basis. While fully aware of the staffing restraints, the mission considers that resolving this issue is fundamental and must be dealt with as a matter of urgency.

Recommendation 5: The mission recommends the Superintendency and the Ministry of Culture to provide sufficient custody staff at Pompeii, as a matter of urgency, to enable more of the property to be opened to the public in order to spread the visitor load and improve visitors' understanding of the site. This should be an essential element of the public use plan proposed in Recommendation 12.

Having access to good information is essential both to plan and monitor conservation and to manage visitation effectively. The mission concluded that there is a lack of basic documentation to enable the site to be managed and conserved effectively. The GIS for Pompei is out of date and cannot be accessed from the site. As a result, separate condition surveys are being carried out but are not likely to be integrated with the GIS which should be a basic tool for management of all aspects of the property. This situation needs to be remedied.

Recommendation 6: The GIS for Pompei should be updated with all relevant information and kept up-to-date so that it can be used as a basic tool for the conservation and management of the site.

At Herculaneum there is an up-to-date GIS maintained by the HCP. Its effectiveness is thanks to its design having been led by user needs (those planning and supervising conservation works) and the need to keep it as simple as possible though hosting many levels of information. Although it was created to develop approaches to managing conservation works without the expectation that it would be used beyond the lifetime of HCP, there would be numerous benefits if this GIS can be passed over to the Superintendency as the HCP progressively withdraws from the site. This means both that the Superintendency will need the resources to manage and update the GIS in the future and that the GIS needs to have an effective structure which is easy to use and economic to maintain.

Recommendation 7: The Superintendency should plan with the Herculaneum Conservation Project for the takeover in due course of the Herculaneum GIS and be resourced for its future maintenance and use as a basic tool for the conservation and management of the site.

Given the scale and complexity of the three parts of the World Heritage property and of the other Vesuvian monuments, it is probably not sensible to try to develop one GIS for the whole group of sites. However it would be beneficial for there to be common standards for the outputs of the various GIS in use (e.g. format, detail of information gathered, and frequency of updates). This would allow dialogue between the various systems. The potential of the Herculaneum Centre to help host and manage information as HCP winds down could be better explored.

Recommendation 8: The Superintendency with, if possible, support from the HCP should develop common standards for GIS in use within the Vesuvian group of monuments to enable easy exchange of data and regular updating as a basis for improved information management.

C Measures to improve management of site and understanding of OUV

There is insufficient clarity about the nature of the OUV of the property and a lack of clear measures for assessing its condition. This makes it difficult to assess whether the OUV has been damaged and to what extent damage may have occurred. It is essential that the World Heritage Committee should agree a Statement of Outstanding Universal Value for the property as soon as possible. Once agreed, this Statement will be the baseline for future assessment of the condition of the property. This should be done as part of the preparation for the next World Heritage Periodic Report, due to be carried out for World Heritage properties in Europe during 2012 to 2014. The deadline for submitting draft Statements of Outstanding Universal Value to the World Heritage Centre is 1 February 2012.

Recommendation 9: The Italian Government is recommended to submit a draft Statement of Outstanding Universal Value by 1 February 2012 for consideration and adoption by the World Heritage Committee as the basis for the future management of the property in accordance with Decision COM 34 10B.3 of the World Heritage Committee.

As well as needing to define clearly and understand the OUV of the property in order to protect it, it is also important to have in place measures which can be used as a yardstick for assessing its condition. These do not seem to exist at present and the mission considers that they should be developed urgently.

Recommendation 10: The Superintendency should develop and implement a set of simple monitoring measures for the condition and use of the site and should have these in place by 1 February 2012 and submit them for review by ICOMOS and the World Heritage Centre.

Underlying all these requirements is the need to have an effective management system in place. Such a system should have control of the resources it needs to carry out effectively its primary objectives of conserving the property and making it accessible to visitors in a way which is sustainable, educational and enjoyable. The mission considers that the basic structure is one that should work provided that staff are not distracted from those primary objectives by frequent reorganisations and by projects which may not be focused on those priorities. The mission believes that the frequent changes in structure in recent years have not been helpful and that a period of stability is essential.

Recommendation 11: The Ministry of Culture is recommended to maintain institutional stability within the Special Superintendency in order to allow it to focus on managing and conserving the site as its main priority.

It is also essential that the Superintendency has effective means of identifying priorities and of setting its strategy and objectives for the conservation and sustainable use of the property to meet those priorities with the minimum diversionary activity. As noted above, Pompeii has a management plan but it is not used effectively as a management tool. Herculaneum and Oplontis do not have management plans but have other ways of setting priorities. Recommended best practice is to have a management plan but it is essential that any such plan is developed in ways which can be used effectively by those managing the property.

Recommendation 12: The Superintendency should review the management plan with other stakeholders and the Ministry of Culture to identify ways in which it can be used more effectively as a tool for the effective conservation and management of the property. The management plan should include public use and risk management plans. The Italian Government should report on progress on this by 1 February 2013.

Special arrangements have existed at Herculaneum for the last decade through the involvement of the Packard Humanities Institute and the creation of the Herculaneum Conservation Project (HCP) as a partnership of the Superintendency, the Packard Humanities Institute and the British School at Rome. The results of this partnership are remarkable and there has been a very great improvement in the overall condition of the site. There are lessons, for example on working practices, which could be translated into other sites even without a private/public partnership. This success results from a number of factors including, obviously, the considerable financial and human resources brought into the site by the project but also the commitment of the Superintendency staff involved and the decision of the private partners to invest in a young

qualified interdisciplinary team to reinforce the Superintendency technical offices. As a result a close and fruitful partnership has been established between the HCP and the Superintendency staff working on site. It is an exemplary private/ public partnership but its success depends on a number of factors, including those close working relationships which could be replicated elsewhere. It is essential that there is an orderly exit strategy which allows the Superintendency to take over and continue their work within whatever resources are available.

Recommendation 13: The Superintendency, the Packard Humanities Institute and the British School at Rome, as the partners in the Herculaneum Conservation Project, have agreed and are implementing a phased programme over the next few years for withdrawal by the Project which enables the Superintendency to continue to implement the approaches developed, particularly in the area of programmed maintenance. The Ministry and the Superintendency must guarantee their commitment to this programme. Ideally, the private partners should follow the phased handover for conservation works with some form of light support for a number of years to favour the commitment to the improved management and conservation approaches by the public authority at Herculaneum (but perhaps also at the other sites in its care), particularly in a period when the management system for these sites might be subject to change.

The need for better protection of the visual setting of the property has been noted above. While these are essentially archaeological sites, it is still important that their visual context should be as appropriate as possible, given that they are all surrounded by vibrant modern settlements. It is particularly important that visual links with Mount Vesuvius should be maintained.

Recommendation 14: It is recommended that measures for the effective protection of the visual setting of the property, particularly the visual links with Mount Vesuvius, should be reviewed and strengthened as necessary, possibly by the extension of the buffer zones.

D Follow-up action by UNESCO

The report of the mission shows that there are elements of the property which are at risk as well as organisational changes which are required. The property may well be at a turning point so that, if urgent measures are not taken, significant damage could occur to the Outstanding Universal Value of the property. The World Heritage Committee should therefore keep the situation under review and request a further State of Conservation report from the Italian government on their response to the above recommendations for consideration by the Committee at its 37th session in 2013. It is therefore essential in our view that a second inspection mission should be organised by ICOMOS International and UNESCO, within a relatively short time frame of two years at the most, to determine whether due attention has been paid to the structures at risk, and whether a new approach has been definitively adopted towards the regular maintenance of the other structures which we were unable to examine. Such a mission should also look at the wider management issues identified in our previous recommendations and could contribute to the State of Conservation report to the World Heritage Committee in 2013.

Recommendation 15: It is recommended that the World Heritage Committee should invite the State Party to submit a State of Conservation report for consideration at its 37th session in 2013, reporting on progress on the recommendations made by the mission and the general state of conservation of the World Heritage property. It is further recommended that the State Party should be invited to request a joint ICOMOS/ UNESCO mission during 2012 in order to assist with this process.

Annex 1 Terms of Reference for the Mission

After the collapse of the Schola Armaturarum Juventus Pompeiani located within the archaeological area of Pompei, undertake the joint World Heritage Centre / ICOMOS advisory mission to the World Heritage property “Archaeological Areas of Pompei, Herculaneum and Torre Annunziata” (Italy) in December 2010, especially focusing on the archaeological site of Pompei.

The joint mission will:

1. Assess the state of conservation of this property and the factors affecting its Outstanding Universal Value, authenticity and integrity;
2. Assess the impact of the collapse of the Schola Armaturarum on the Outstanding Universal Value of the property;
3. Identify potential threats to the property and possible measures in order to avoid a repetition of such incidents;
4. Evaluate the status of any development, construction projects and ongoing activities within the buffer zone and around the property, and assess its actual and potential impact on the Outstanding Universal Value, authenticity and integrity of the property;
5. Review management arrangements and the situation with regard to the Management Plan;
6. On the basis of the findings, the joint mission team should prepare a joint report by 31/12/2010 considering Operational Guidelines paragraphs 178-186 and 192– 198 and outlining recommendations for consideration by the World Heritage Committee on the requirements for ensuring the protection of the property’s Outstanding Universal Value.

Annex 2 Itinerary and Programme

PROGRAMME OF ICOMOS MISSION TO POMPEI HERCULANUM OPLONTIS

Dott. Jean-Pierre Adam, Prof. Alix Barbet,
From 1 to 5 December 2010
(Christopher Young prevented from participating by bad weather)

Wednesday 1 December

Arrival at Naples Airport at 14.20
Met by Dott. Grete Stefani
Visit to Antiquarium of Boscoreale
Check-in at Hotel Amleto, Pompei
Dinner free

Thursday 2 December

Meet at Soprintendenza of Pompei at 9.30
Meeting with Dott. Surintendente Jeannette Papadopoulos
Inspection of excavations at Pompei led by Dott. Antonio Varone (see list in annex)
Lunch at 13.30 and meeting with various senior officials (see list in annex)
Pompei excavation inspection continues
Dinner with Jeannette Papadopoulos and Manuel Roberto Guido

Friday 3 December

Meet at Soprintendenza at 9.00
Meeting with officials from the Sistema Informativo Archeologico Vesuviano (SIAV)
Pompei excavation inspection continues
No time for lunch
Meet at Herculaneum at 14.30
Herculaneum excavation visit led by Dott. Maria Paola Guidobaldi & Jane Thompson (see lists)
Meeting with HCP team
Visit of new premises of Soprintendenza
Dinner with Director of ICOMOS-Italy, Maurizio di Stefano

Saturday 4 December

8h30 Meet at Soprintendenza for inspection of Pompei excavations with Dott. Jeannette Papadopoulos
Lunch at 13.00
Meet at 14.30 at Oplontis and inspection led by Dott. Lorenzo Fergola
Dinner with Dott. Jeannette Papadopoulos

Sunday 5 December

7.00 Departure of Dott. Jean-Pierre Adam
10.00 Free visit of Pompei excavations with Alix Barbet
Lunch at 13.00

Depart of Prof. Alix Barbet for Naples at 17.00
Meet at Jean Bérard Centre, free visit continues.

PROGRAMME FOR MISSION OF UNESCO EXPERT

Dr. Christopher Young
From 10 to 13 January, 2011

Monday 10 January

Arrive Naples and transfer to Pompei

Tuesday 11 January

09.15 Initial discussion at Soprintendenza office – Pompei with dott. Teresa Cinquantaquattro, Soprintendenza, dott. Antonio Varone, Site Director, Manuel Roberto Guido, Valentina Puglisi (Herculaneum Conservation Project (HCP), translator)
10.30 – 14.00 site visit with Teresa Cinquantaquattro, Antonio Varone, Manuel Roberto Guido, Valentina Puglisi (HCP)
15.00 – 19.00 meeting with Antonio Varone, Teresa Cinquantaquattro (part of time), Manuel Roberto Guido, Sarah Court (HCP)

Wednesday 12 January

09.00 – 09.45 site visit to Oplontis with Site Director, dott. Lorenzo Fergola
10.00 arrive Herculaneum; initial meeting with Jane Thompson and staff of HCP, dott. Maria Paola Guidobaldi, Site Director
11.00 – 13.30 site tour with Maria Paola Guidobaldi, Jane Thompson and HCP staff, to Suburban Baths, and other sites
13.30 – 14.30 working lunch
14.30 – 16.00 site visit to new excavation, Villa of Papyri etc with Maria Paola Guidobaldi and HCP staff
16.00 – 17.15 meeting with Maria Paola Guidobaldi, Jane Thompson and other HCP staff. Demonstration and discussion of HCP Herculaneum GIS

Thursday 13 January

09.30 – 12.30 meeting with Teresa Cinquantaquattro (part of time), Antonio Varone, Valentino Paccati (Head of Technical Office) (part of time)
12.30 – 14.15 Boscoreale to inspect Pompei GIS and discuss its use and effectiveness
15.00 – 16.15 site visit to Pompei via Amphitheatre gate perimeter road to Porta Vesuviana.
16.15 depart Pompei for airport.

Annex 3 Composition of Mission

Jean-Pierre Adam, ICOMOS
 Alix Barbet, ICOMOS
 Christopher Young, UNESCO

Papadopoulos Jeannette
Soprintendente dei Beni Archeologici Napoli e Pompei
 Teresa Cinquantaquattro *Soprintendente dei Beni Archeologici Napoli e Pompei*
 Pirozzi Maria Emma Architetto, SANP
 Rispoli Paola Architetto, SANP
 Sodo Anna Maria
 Responsabile del SIANV (Piano per Pompei), SANP
 Varone Antonio Direttore degli scavi di Pompei SANP

Annex 4 List and contact details of people met

LIST OF PEOPLE MET

Joint UNESCO-ICOMOS Mission to Pompei, 1-5 December 2010, 10 to 13 January 2011)

List of MiBAC personnel

(Soprintendenza Speciale Beni Archeologici Napoli e Pompei = SANP; Ministero per i Beni e le Attività Culturali = MiBAC)

Brughitta Cristiano T Addetto Stampa Segretariato Generale Ministero per i Beni e le Attività Culturali

Buondonno Mattia Assistente Tecnico SANP
 Carandini Andrea Presidente del Consiglio Superiore per i Beni Culturali

Cecchi Roberto Segretario Generale Ministero per i Beni e le Attività Culturali

Di Martino Giuseppe Assistente Tecnico SANP
 Fergola Lorenzo Direttore degli Scavi di Oplontis SANP

Guido Manuel R. Dirigente della Direzione Generale della Valorizzazione, Ministero per i Beni e le Attività Culturali, Ufficio UNESCO

Guidobaldi Maria Paola Direttore degli Scavi di Ercolano SANP

Nista Leila Ministero per i Beni e le Attività Culturali, Ufficio UNESCO

Proietti Giuseppe Consigliere Speciale del Ministro per i Beni e le Attività Culturali

Stefani Grete Direttore degli Scavi di *Boscotrecase* SANP

De Carolis Ernesto Direttore del laboratorio di restauro SANP

Papaccio Valerio Capo dell'Ufficio Tecnico, SANP

Municipalities and other Representatives

D'Alessio Claudio Sindaco di Pompei
 Strazzullo Vincenzo Sindaco di Ercolano
 Starita Giosuè Sindaco di Torre Annunziata

ADDITIONAL LIST OF PEOPLE MET

Bergamasco Immacolata Head Architect for Oplontis and Stabies
 Di Stefano Maurizio President of ICOMOS-Italy
 Gasparoli Paolo Engineer Milan Polytechnic
 Manati Luigi New Managing Director of Antiquities
 Martelli Castaldi M. HCP Team
 Podestà Stefano Engineer DICAT University of Genoa
 Thompson Jane Head of HCP project

Total of 29 people met.

Annex 5 Structures visited during mission

LIST OF STRUCTURES VISITED¹

Pompei

- 1- Casina dell'Aquila *
- 2 -Antiquarium *
- 3- Tempio di Apollo VII,7,23
- 4- Angolo VIII,4-I,4
- 5- Schola Armaturarum III,3,6
- 6- **Casa del Moralista III,4,2-3**
- 7- Vicolo tra III,4-III-5
- 8- **Casa di Trebio Valente III,2,1**
- 9- Casa I,11,1
- 10- Casa della Nave Europa I,15,3 =
- 11- Forum Boarium
- 12- Praedia di Giulia Felice II,4 *
- 13- Casa della Venere in Conchiglia II,3,3
- 14- Thermopolium di Lucius Vetitius Placidus I,8,8
- 15- Casa di Paquius Proculus I,7,1 *
- 16- Casa del Larario di Achille (Sacello Iliaco) I,6,4 =
- 17- **Casa di Casca Longus** (dei Quadretti teatrali) I,6,11
- 18- Casa I,16,1, porte I,17,2
- 19- **Casa degli Archi girati** I,17,4
- 20- Protezione calchi umani, I,22
- 21- Casa del Menandro I,10,4 =
- 22- Casa VII,16,13
- 23- Casa VII,16,15
- 24- Casa VII,7,33
- 25- Incrocio VII,5-VI,8
- 26- Casa della Fontana Piccola VI,8,23
- 27- Via VI,3
- 28- Casa del Labirinto VI,11,10 =
- 29- Casa IX,5,1
- 30- Casa del Centenario IX,8,3-7
- 31- Casa delle Nozze d'Argento V,2,i
- 32- Casa VII,2,1

- 33- Casa IX,1,7
- 34- Casa del Citarista I,4,5,25 =
- 35- Casa di Adone ferito VI,8,18
- 36- **Casa del Poeta Tragico** VI,8,5
- 37- Casa VII,3,40
- 38- Casa VII,4,39
- 39- Casa del Orso ferito VII,2, 44
- 40- Casa di Siricus VII,1,47
- 41- Casa del Efebo I,7,11 =
- 42- **Casa dei Quattro Stili** I,8,17
- 43- Nécropole via Nocera = tombs Mellissa, Cellio, Tillio
- 44- Casa del Giardino di Ercole
- 45- Casa di Fabius Amadus I,7,3
- 46- Fullonica di Stephanus I,6,7 =
- 47- Villa di Diomede
- 48- Casa dei Casti Amanti IX,12,9
- 49- Casa di C. J. Polibius IX,12,8
- 50- **Casa di Trittoleme** VII,7,5
- 51- Casa di Romulus e Remus VII,7,10

Herculanum

- 1- Casa del Rilievo di Telefo
- 2- Casa del Grand Portale
- 3- Casa del Tramezzo di Legno
- 4- Casa del Erme di Bronzo
- 5- Casa del Atrio a Mosaico
- 6- Casa Sannitica
- 7- Casa di Nettuno ed Amfitrite
- 8- Casa del Salone nero
- 9- Villa dei Papiri
- 10- Suburban Baths

Oplontis

- Villa di Poppea
Magazzino

¹ According to the Preliminary Report of the Soprintendenza of Pompei

In bold: restored structures

* Structures currently being restored

= Small interventions

Underlined: Structures in danger, according to J.-P. Adam and A.Barbet

Annex 6 Administrative information**Visitor Numbers, 2007 - 2010**

<u>Site name</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>
<u>Pompei</u>	<u>2,571,725</u>	<u>2,253,633</u>	<u>2,087,559</u>	<u>2,319,668</u>
<u>Herculaneum</u>	<u>301,786</u>	<u>264,036</u>	<u>292,936</u>	<u>298,310</u>
<u>Oplontis</u>	<u>47,351</u>	<u>30,422</u>	<u>40,209</u>	<u>41,749</u>

Pompei

Number of custodians: 166, in teams of 22/23 custodians per shift (5 shifts)

N.B.: In 1985, there were 203 custodians, in 1987: 215, in 1997: 182.

Excavation maintenance team: 10 craftsmen, including two who are partially disabled: 3 painters, 1 gardener, 1 electrician, 5 labourers, but 3 have become excavation assistants.

Restoration laboratory: 5 restoration specialists, including two who are partially disabled, 2 object restoration specialists, 3 fresco restoration specialists.

7 labourers, including three who are partially disabled.

N.B. In 1980: there were 90 labourers.

Herculaneum

Access to structures: less than 50% of the site is accessible to the public.

Oplontis**Governance**

Superintendency of Naples and Pompei

- Pietro Giovanni Guzzo	1997 – Sept. 2009	12 years and +
- Maria Rosaria Salvatore	Sept. 2009-April 2010	7 months
- Giuseppe Proietti	April 2010-end-Sept. 2010	5 months
- Jeannette Papadopoulos	Oct. 2010-22 Dec. 2010	3 months
- Teresa Cinquantaquattro	January 2010 onwards	

Special Commissioners

- Renato Profili	July 2008- April 2009	10 months
- Marcello Fiori	May 2009- July 2010	15 months

Annex 7 References

LIST OF DOCUMENTS PROVIDED

On Herculaneum

- M.P. Guidobaldi, Ercolano : un esempio per la gestione sostenibile del patrimonio archeologico italiano, SANP, PHI, HCP
- Herculaneum Conservation Project, SANP, PHI, HCP (introduction et bibliographie)
- L'équipe dell'Herculaneum Conservation Project, SANP, PHI, HCP.
- Rapporto di aggiornamento 2009-2010 e suggerimenti per il Futuro, Comité scientifique 2010, SANP, PHI, HCP
- J. Thompson, Conservation and management challenges in a public/private partnership for a large archaeological site (Herculaneum, Italy). Dans *Conservation and Management of Archaeological Sites*, 2007, 8, p. 191-204.
- M.P. Guidobaldi, L'Herculaneum Conservation Project : un programma di conservazione per salvare la città antica, *Ocnus*, 14, 2006, p. 135-142.
- J. Thompson, A. D'Andrea, Gestione di un progetto interdisciplinare in un sito archeologico complesso, dans . Coralini, *Atti del Convegno Internazionale « Vesuviana : archeologia a confronto »*, Bologne, 14-16 janvier 2008, Bologne, 2009, p. 237-251.
Dépliant sur Centre Herculaneum.
- Patrimoine culturale nel mondo, avec ICCROM, pour les enfants.
- World Archaeological Magazine, Aug.-Sept. 2010.

On ICOMOS UNESCO

- Orientations devant guider la mise en oeuvre de la Convention du Patrimoine mondial, Centre du Patrimoine Mondial.
- Report of the WHC-ICOMOS Advisory Mission to the Historic Centre of Naples (Italy), 9-13 déc. 2008.
- State of Conservation of World Heritage Properties in Europe, rapport 2006, résumé sec. II, Italy.
- World Heritage 33 COM, 2009, Qualification des limites.
- WHC Nomination Documentation, 1997 : (dossier de proposition d'inscription et évaluation ICOMOS). Et liste du patrimoine mondial Pompéi et Herculaneum (Italie, n° 829).
- WHC Retrospective Inventory – Technical Evaluations, 2009, Italy n° C 829

On Oplontis

- M.L. Thomas, J.R. Clarke, The Oplontis Project 2005-6 : observations on the construction history of Villa A at Torre Annunziata
- Nuovo edificio per l'accesso, accoglienza dei visitatori, uffici per il personale e magazzino archeologico nella villa di Poppea nell'area archeologica di Oplontis

On Pompei

- L. G. y Garcia, *Danni di guerraa Pompei. Una dolorosa vicenda quasi dimenticata*, Studi della Soprintendenza archeologica di Pompei, 15, Rome, 206.
- A. Mandari, G. Longobardi, collab. D. Milonis, S. Panti, E. Wenzel.
- CD : *Il sistema integrato archeologico-territoriale dell'area pompeiana. Studio di Fattibilità*, 16 avril 2002, précédé d'un extrait de G. Longobardi, *Pompei Sostenibile*, Rome, 2002, Studi della Soprintendenza archeologica di Pompei, 5.
Un piano per Pompei. Piano programma per la conservazione e la gestione del patrimonio storico-archeologico della città antica, 4^e phase, Rome, 2005.
- Rapport J. Papadopoulos 30/11/2010.
CD Commissario Straordinario
- CD : UNESCO-MiBAC
- CD Pompei Schola Armatorarum
- L. Zan, *Reforming the public sector : how to make the difference*, Rome, Italie, déc. 2-3, 2010. Ten years after the rise and fall of autonomy in Pompeii, p. 1-19. Theme : Trnsparency in /of the public sector.

OTHER PUBLICATIONS

- J.-P. Adam, *Dégradation et restauration de l'architecture pompéienne*, CNRS, Paris 1983.
- A. Barbet, Herculaneum et Pompéi. Quel patrimoine pour l'avenir. *Archéologia*, 479, juillet-août 2010, p. 18-27.
- M.P. Guidobaldi, P.G. Guzzo, Un rilievo neoattico da Ercolano, Cronache Ercolanesi, 40, 2010, p. 251-260.
- PPM I : PPM : *Pompei. Pitture e mosaici*, t. I, Rome, 1990.

Annex 8 Plates

Thirty plates numbered from I to XXX (Photographs by Alix Barbet and Jean-Pierre Adam).

Pl. I	Pompei. Water damage
Pl. II	Pompei. Schola Armaturarum III,3,6
Pl. III	Pompei. Schola Armaturarum III,3,6
Pl. IV	Pompei. Under the Casina dell'Aquila
Pl. V	Pompei. Casa del Moralista III,4,2-3, Casa di Trebius Valens III,2,1
Pl. V	Pompei. Casa del Moralista III,4,2-3
Pl. VI	Pompei. New arrangements
Pl. VII	Pompei II,4 Casa di G. Felix
Pl. VIII	Pompei 1- II,3,3 Casa della Venere in Conchiglia, 3 - I,8,8 Thermopolium di V. Placidius
Pl. IX	Pompei I,6,4 Casa del Sacello Iliaco <i>cubiculum</i> 9
Pl. X	Pompei. Set of doors
Pl. XI	Pompei. Invasive vegetation
Pl. XII	Pompei. Various protection problems
Pl. XIII	Pompei. Restorations in the past
Pl. XIV	Pompei VI,11,10, Casa del Labirinto in danger
Pl. XV	Pompei V,2,i Casa delle Nozze d'Argento in danger
Pl. XVI	Pompei V,2,i Casa delle Nozze d'Argento in danger
Pl. XVII	Pompei I,4,2.25. Casa del Citarista. "Sotto i lapilli" museographic experiments
Pl. XVIII	Pompei VI,7,18. Casa di Adone ferito
Pl. XIX	Pompei. Wear on poorly conserved mosaic floors
Pl. XX	Pompei. Structures in danger
Pl. XXI	Pompei I,7,11. Casa del Efebo
Pl. XXII	Pompei I,7,11. Casa del Efebo
Pl. XXIII	Pompei IX,13,1-3 Casa di C. Julius Polibius. Presentation to the public
Pl. XXIV	Pompei. A contrasting picture
Pl. XXV	Herculanum. Terraces and combating damp
Pl. XXVI	Herculanum. Stagnant water
Pl. XXVII	Herculanum. Villa dei Papiri
Pl. XXVIII	Oplontis. Villa di Poppea. Rising damp
Pl. XXIX	Oplontis. Villa di Poppea. Insidious deterioration
Pl. XXX	Pompei IX,13,1-3 Casa di Polibius. Thefts of mural paintings and trafficking in antiquities