



## Rediscovering Pompeii

This is not the first time that an exhibition of archaeological material from the area around the volcano Vesuvius has traveled across the world to offer scholars and nonspecialists alike the chance to admire, in a logical order, the manifold testimonies of daily life and art that these sites have provided us. The most recent of these was the highly successful show held in 1979 for the nineteen hundredth anniversary of the sudden burial of Herculaneum, Pompeii, Oplontis, Stabiae and other towns by the violent eruption of Vesuvius on August 24 and 25, in the year 79, which obliterated flourishing cities and villages of Roman Campania south of Naples.

These cities were not, to tell the truth, particularly famous or important in antiquity. They were, for the most part, inhabited by rich small-medium merchants and property owners. Only Herculaneum, just outside Naples, was of a different class; it may have been the last in a series of connected residential nuclei that began with the imperial constructions at Baiae, the Riviera of first-century Rome.

It is a happy circumstance for us today (if not for the unfortunate residents!) that life in the buried cities ended not, as usual, by slow degradation and abandonment, but suddenly. The cataclysm that snuffed out the life of the citizens and fixed in timeless immobility houses, gardens and every other work of man and nature ensured that in no other place is preserved intact the entirety of the evidence of the throbbing life of ancient communities.

The fact that Pompeii was buried to a depth of five to six meters and Herculaneum up to ten meters (which, after the eruption of 1631, became twenty-seven) limited, in the cities farther from the volcano, and prevented, in the nearer ones, incursions by scavengers and treasure hunters of their own and later epochs. The very memory of the exact location of the Roman cities was lost over the centuries. The first discoveries, on the hill known as Civita, in actual fact the heart of ancient Pompeii, were believed to be ancient Stabiae. Only when an inscription emerged with the words *civitas Pompeianorum* was the city identified as Pompeii.

The first finds in the area around Vesuvius took place at Herculaneum, the most deeply buried city, in the first years of the eighteenth century, and the first monument partially brought to light, in 1738, was the Roman theater.

The exploration of the towns around Vesuvius, was, moreover, the first conducted systematically and at the expense of a public exchequer, that of the Kingdom of Naples, by the munificence of the Bourbon King Charles III, who too quickly left Naples for Spain.

We can state confidently that the great impact that the discoveries at Herculaneum (especially the so-called Villa of the Papyri) and Pompeii had on public opinion and the European intellectual scene was certainly among the principal intellectual stimuli for interest in antiquity. There followed the formation of antiquarian societies, the organization of expeditions to survey and draw ancient monuments, the affirmation of a spirit and a *Kunstwollen*, a taste, from which was to emerge the neoclassical movement, the birth of the science of archaeology, understood as *Altertumswissenschaft*. In Rome, in the 1760s, Johann Joachim Winckelmann published his *History of the Art of Antiquity*, still the archetype reference for students of ancient art and for the chronology (relative and sometimes absolute) of this science of ours.

Pompei, casa di Meleagro, peristilio.  
Acquarello, 1880.  
Pompei, House of Meleager, peristyle.  
Watercolor, 1880.  
mm 265 x 185. DAIR Archiv 83,84.





Romolo e Romo  
18.5.80.







We are not so chauvinistic as to believe that without the discovery of Pompeii and Herculaneum the science of archaeology would not have spread, but we are convinced that the discovery of these towns greatly contributed to its formation and solidification. We can recognize, with Hegel, that the felicitous concurrence of various factors, not least of which the great emotional reaction to these discoveries, have concurred in forming the antiquarian and neo-classical cultures in Europe.

The excavations of Herculaneum and Pompeii (and recently of Stabiae, Oplontis and Terzigno) have continued, albeit with periods of suspension, for the 250 years since the first official discovery in 1738, an anniversary celebrated in 1988 with an international conference, the proceedings of which are now in press.

The first objective of the Bourbon researchers was the finding of works of art and exceptional attestations of daily life, the only goal being that of adorning noble palaces (and only later museums), and the principal of these was the royal palace at Portici (in which it is our dream to build the new, large Herculaneum Museum). With the rivalry and commitment of treasure hunters, the archaeologists who followed them, almost until our own day (influenced, probably, by the very grandeur of the remains of Herculaneum and Pompeii from the last days before the eruption), aimed all their attention on the liberation – the broadest possible allowed by the financing – of increasingly vast tracts of these cities in their final state, post seismic and pre-eruption, that is between the years 62 and 79.

Among the many highly qualified archaeologists who have contributed to our knowledge of the ancient cities of Herculaneum and Pompeii, we are pleased to record two in particular: Vittorio Spinazzola, to whom we owe the happy intuition that first of all the street plan of Pompeii should be liberated the better to orient later explorations of buildings, *Regio* by *Regio* and *insula* by *insula*, and Amedeo Maiuri, to whom we owe the richest spectrum of knowledge of the city, the most extensive excavations, and also – unusual for his day – a particular interest in stratigraphic sondages to investigate, beneath the final levels of the city of Pompeii, the other six hundred years of occupation of the site, before those sealed by the eruption of 79. These levels are still poorly known, with the exception of the work of the University of Milan directed by Prof. Maria Bonghi Jovino in Regio IV, by Dott.ri Stefano De Caro and Chiaromonte Treré at the Porta Nocera and by Dr. Paul Arthur in the central part of the city, occasioned by excavation for laying lighting cables.

After the 1950s, the cities of Vesuvius witnessed a progressive reduction of archaeological research and of restoration and maintenance of monuments and sites in general, owing to the limitation of sums available to the Administration. These circumstances led to serious degradation and crumbling of walls and a progressive corrosion of the wall paintings. Among the factors contributing to the degradation are the uncontrolled spread of grasses and bushes (some as thick as tree trunks), especially all brambles and ailanthus (which have attacked and caused disintegration of walls, pulverizing the mortars) and the use of restoration technologies, once considered suitable that later proved unsuitable and even damaging to the monuments, among which is the extensive use of reinforced concrete and injections of cement.

A reversal of the tendency began with another disaster, the earthquake of 1980, which gravely damaged our already crumbling cities.

A cataclysm, the eruption of A.D. 79, had covered the towns around Vesuvius, giving us a rich and fertile ground for archaeological research; another, the earthquake of 1980 opened up un hoped for possibilities for the recovery of these archaeological areas in severe, and often irreversible, states of degradation.

In 1981 the Soprintendenza Archeologica of Pompeii was founded, separate from the larger superintendency of Naples and Caserta to facilitate the restoration of the Vesuvius area, and an autonomous Institute was established. The new superintendency became operative in 1982; in 1984 a special law brought the new Institute conspicuous, though largely insufficient, funding. A few months later, in November 1984, we took directorship of the Institute and undertook a difficult, often discouraging, but exciting job: the rethinking, with a systematic plan, in an organic and uniform fashion, using an interdisciplinary approach, the totality of the problems presented by the excavation, restoration, care, exploitation, computerization, and use of a series of archaeological sites which, owing to the vastness and completeness of the material both collected and yet to collect, finally permitted work by pilot-projects of interven-



tion on archaeological material on a large scale – true cities, and not simply urban settlements, groups of monuments or single architectural complexes, important though those are.

This new interdisciplinary and systematic approach to the problems of archaeological sites whose extent is measured in hectares and which are preserved almost entirely has permitted expression of our particular philosophy of the ancient and its recovery, which cannot neglect the identification of the end-user, the visitor.

The first problem was the depth and intensity of the necessary restoration. To dig is to destroy, but in order to revivify; to restore is to damage, to alter, but in order to make survive. In the light of this incontrovertible fact, we must ask ourselves an important question, whether we believe that monuments, like living beings, must have a biological life that runs from birth to death in a predictable number of years, or whether monuments must be kept alive as long as possible, theoretically *ad infinitum*. In the hypothesis that the answer is the second, we must acknowledge that the succession of frequent restorations causes damage and losses to the monuments, whatever care and sophistication of material and technology are used. With repeated restoration of the same monument, its destruction grows exponentially, the loss of surfaces and mortar, of plaster, pigments, even if the structure still seems generally solid and in good condition. As a result, we have given priority to a more in-depth kind of restoration to avoid the need of further restoration of the same monument. We have, for example, raised the tops of the walls (the so-called sacrifice surface), in order to offer the wind and atmospheric agents a “sacrifice” of the modern walls to attack (which can be rebuilt without problems as soon as they are degraded) before they reach the tops of the ancient walls. If, then, we consider that, in parallel, a systematic program of weeding has been undertaken – with organic (photosynthesis-blocking), not chemical, products – it follows that the general legibility of the ancient structures is greatly enhanced, and with it their safe enjoyment. The weeding has been undertaken with an eye to the original architecture and city planning: grass was let grow where in antiquity there were gardens, and where there were pavements, it was removed and the soil re-covered with a layer of lava foam. Thus we restored the alternation of dark and light, of gray and green that, together with restoration, where possible, of the roofs, gives the visitor a comprehensible (and correct) vision of the cityscape in the succession of the houses, shops and public buildings, as contained spaces and not as containers, or a succession of undifferentiated courtyards. Thanks to the presence of a biologist on our staff, we have researched the ancient plant material to come to light during excavation and restoration – pollen, seeds, roots – in order to restore neither generic wild flora nor imaginative tree planting, as in the past, plants that have been recognized in the same arrangement which the finds of samples has revealed to have been their state in antiquity. Our goal is the replanting of the same plants as those growing at the time of the eruption in a particular garden, arranged according to a precise architecture of gardens that the special excavation conditions has permitted. Last fall, in the large palaestra of Pompeii, rows of plane trees that adorned the building were replanted next to the amphitheater, thanks to the sponsorship of the Monsanto Agricul-

Pompei, Tempio di Iside, naumachia.  
Acquarello.

Pompeii, Temple of Isis, sea battle.  
Watercolor.

mm 145 x 250. DAIR Archiv 83,205.





tural Company. The carbonized roots of the ancient plane trees that grew on this spot were discovered decades ago and casts were made of them. As a result of an agreement between the Superintendency and the National Research Center, in a few months a laboratory for analysis of samples will open at Pompeii, in order to free the Institute from dependence on outside laboratories.

The visitor looking for signs of restoration in the streets of Pompeii will see that the buildings carry the sign of many different kinds of interventions – because of the frequent changes of Superintendents. Many of these restorations contrast unpleasantly with those adjacent. Particularly conspicuous is the use of reinforced concrete (the favorite material until

Pompeii, casa di Sulpicio Rufo, decorazione parietale di III stile.

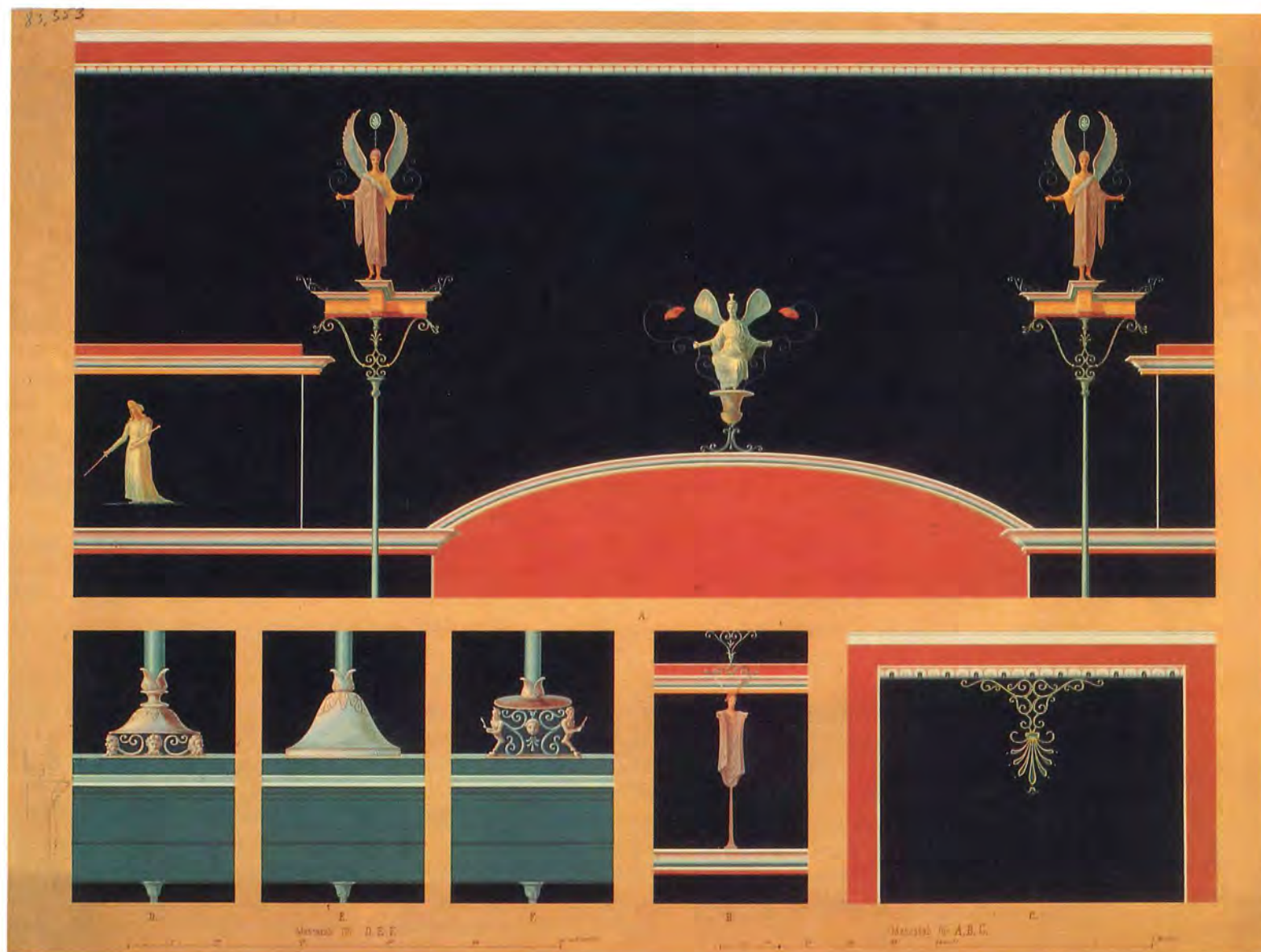
Acquarello, 1888.

Pompeii, House of Sulpicius Rufus, Third Style wall painting.

Watercolor, 1888.

mm 265 x 180. DAIR Archiv 83,378.





some years ago). Today it is evident, and J.P. Adam mentioned it in a recent essay, that concrete, not only for its irreversibility, but also for its hygroscopicity, leads to the death, within twenty years at most, of paintings and the architectural elements that carry them, because the atmospheric humidity penetrates the concrete, reaches the irons, oxidizes them and makes them expand, and makes split the beams made of that material. A walk along the Via dell'Abbondanza in Pompeii still shows numerous examples of this decay of concrete, and we ourselves had to intervene energetically, when we took charge of the Institute, to convince the technicians and workers to abandon what had been considered the panacea of architectural restoration, concrete, replacing it, where possible, with *calce Lafarge*.

Today, in the Vesuvius area, we have decided to return to the use (obviously when the static imbalance does not necessitate resin injections or insertion of supports) of natural material in restoration, such as wood (laminated, for greater resistance, in the platbands), bricks, terracotta tiles and, in the walls, the traditional Roman building techniques with mortar.

We do not believe that restoration must be distinguished from the ancient by the use of contrasting materials in order to be recognizable from a distance. But we are convinced that the harmonization of the materials, the use of the ancient techniques, the rewriting of Roman construction methods, are important and philologically significant steps, with the condition, of course, that the usual elements are introduced securely and clearly distinct (but at close inspection) from the ancient and rebuilt (set back from the outer surface of walls, insertion of dated labels, etc.).

Pompeii, casa del Centenario, decorazioni parietali di IV stile.

Acquarello.

Pompeii, House of the Centenary, Fourth Style wall paintings.

Watercolor.

mm 355 x 473. DAIR Archiv 83,353.

We have also addressed the effects of the earthquake of A.D. 62, before proceeding with the static restoration of structure. We have also sought to investigate the Roman building techniques to identify possible solutions provided by the ancient builders to the problems of our seismic area. The study is still under way, but the first results seem quite promising, and they appear to prove that the Romans were concerned about seismicity.

In view of the difficulties encountered by restorers in the past, we began to adopt (that is, study and test in the laboratory) new technologies for stabilizing columns and pilasters by replacing the rigid cores of metal and sand with a thin cord of resin, the elasticity of which can withstand considerable vibrations and transverse movements.

We are also working on the sidewalks (an experiment was carried out in Via di Mercurio in Pompeii), restoring the Roman *cocciopesto*, where it had disappeared together with the underlying earth, in order to make what have become unattractive canyons safe for guards and visitors to walk upon, but also, and especially, to protect the parts already preserved of the ancient *cocciopesto*, of stone curbs that are being consumed, of walls up which humidity has climbed, caused by the permeation from sidewalks sunken by rainwater, causing great damage to the plaster wall coverings and the paintings on them. Naturally, the new sidewalks are clearly modern and appropriately labeled.

Understandably, the problem of drainage and collection of rainwater in a city anything but dead is almost no different from that of a modern city (of which it has all the problems of police, sanitation, security, maintenance, lighting) and just as serious. The almost total absence of roofs on the ancient buildings, which look more like continuous courtyards than houses – having lost their essence as architecture, as contained space – aggravated the problem of diffusion of rainwater, no longer directed, by the pitch of the roofs, only onto the streets or into the impluvia of the atria, or into the viridaria. This concern has led us to undertake a project of reroofing, according to our restoration philosophy, always using natural materials, such as wood and terracotta tiles. The operative choices have been distinguished in three different approaches: philological, with the exact reproduction of the ancient structures, where we have available all the elements to make roofs that correspond to the ancient ones; propositive, with the construction of a roof similar to the ancient but sufficiently different when we do not have absolutely certain elements, but only probable; umbrella, for roofing spaces of unclear architectural definition. All the interventions are reversible.

By law, but also to provide the city with further protection, a ring of buried water pipes has been laid around the ancient city for protection against fire.

Pompeii is a living city, which some two million people a year visit. It therefore needs lighting for people's safety and enjoyment and as passive security against break-ins. We have experimented with a retractable pole with a lamp at the top; when it is raised to six meters, four lamps can cover an area of four hundred meters, and a television camera connected to a control room outside the excavation, in which all information from other archaeological areas under the Institute is monitored. Two poles and the control room have been installed; the entire system will be put into operation as soon as the funding, just approved, materializes.

The laying of the cables to bring power to the lamps and the camera, which involves, of course, going under the sidewalks of the ancient city, offer us the occasion to carry out another of our aspirations: a series of stratigraphic sondages along the entrances to the buildings to investigate the levels beneath the final ones from the period between the earthquake of 62 and the eruption of 79, the only ones that are largely known and that have been really studied until now, with the sole exceptions that we have already mentioned. It is truly incredible that, after some two hundred and fifty years of exploration, we know almost nothing about the cities of Vesuvius for the more than six hundred years that preceded the last two decades of their lives. This is the occasion that will allow us to make our stratigraphic investigation, to bury the tubes, constituting the backbone of the service that can permit other future technological interventions without having to reopen the sidewalks and finally to replace the sidewalks according to the methodologies that we have tried in a single street.

This, in brief, is the overall interdisciplinary project that has been started at Pompeii thanks to the first special funding and that will be continued, with the same technologies and according to the same philosophy outlined here, as soon as the second phase of funding is available. Such interventions will be extended to the other parts of the Vesuvius area and will constitute a pilot project that can be continued outside our Institute as well under in similar conditions. This Project Pompeii has been distinguished by the successful team work, unusual



in our discipline, of archaeologists, geologists, various types of biologists, geotechnicians, physicists, climatologist, and (last, because we will have more to say about them) computer experts working in fertile synergy and interaction among the various sciences. As evidence of this, there will soon open at Boscoreale, next to the Data processing Center of which we will speak, a special Antiquarium (Man and Environment in the Territory of Vesuvius), in which are collected, alongside the usual archaeological objects, those relating to the evolution of the environment and the human technologies applied to the environment, both natural and cultivated or otherwise exploited. It will also be possible for the visitor to study, in an educational but enjoyable arrangement, the entire development of plant, animal and human life in antiquity.

This is the main outline of what has been planned and partially carried out in the Vesuvius area over the last five years. We have renovated the library, which has grown from 1500 to 10,000 volumes (unfortunately, still too few, but we have the basic texts, the classics, and the principal journals), and organized nine exhibitions, in Pompeii (the Casina dell'Aquila, inside the excavations, was restored for the purpose), Rome (at Castel Sant'Angelo) and elsewhere in Italy and abroad. The Superintendency has also launched the publication of a series of scientific catalogues of our material, a series of scholarly monographs, mostly on topics to do with the Vesuvius area, of a journal (*Quaderni della Soprintendenza*) as well as, through the mediation of the International Association Friends of Pompeii, of a new and a prestigious annual, *Rivista di Studi Pompeiani*, of which the second issue has been published.

We have left till now the role of computers in the interdisciplinary scientific activity of the Institute because we want to treat it separately, since it is so closely tied to the originality of this exhibition.

To have before us the goal of the overall management of the archaeological areas with a process of concrete "museumization", by means of the interaction of various sciences, all operating, obviously, with the input of the archaeologists in order to reach a deeper consciousness of the totality of the art and political, social, economic, spiritual, technological life of the ancients, had to, sooner or later, make us face the great possibilities offered by computers applied to archaeology. With their help we could attain those objectives saving effort and time and enhancing the possibilities and methodologies of study.

In a sense, we had already begun to develop preliminary research in the sector (simulating, on the computer for example, the reroofing of the ancient habitations, before choosing the definitive type to use), in evidence of the fact that the potential offered to our science by the use of the computer had not been underestimated, in the interdisciplinary vision of the Institute. There did not exist, unfortunately, in the financing of Project Pompeii, sums sufficient for a serious commitment in this sector, nor did we have computer specialists to interact with the archaeologists in seeking concrete objectives for investigation and application of the computers to archaeology, and of a common, suitable language.

The start-up of the projects by law (ex art. 15 of the 1986 financing law, the so-called cultural deposits) and the fortunate circumstance that such prestigious companies as IBM Italy and Fiat Engineering joined forces in the Neapolis Consortium to manage together a Project Pompeii in computers, enabling us to fill this gap.

The Superintendency and the Consortium, in perfect agreement of intent and actions, have established a fertile collaboration that has transformed that which, initially, should have been a simple electronic catalogue of the material of our Institute, a map of ancient Pompeii, and the laying down of some studies aimed at the formulation of the proposals for management of the territory, in an original and creative program, directed at probing the manifold possible uses of computers to simplify and increase our knowledge in the field of archaeological science.

As for the cataloguing, since lack of funding meant we could not computerize all the objects, we gave priority to those most at risk: paintings and mosaics, which have all been photographed, measured, examined in their state of preservation and input in the computer.

In addition and for the first time a photomap of ancient Pompeii was made for the first time on a photogrammetrical basis and with correction for the curvature of the earth. From this was derived a relief map, with very close level curves (one every 0,50 meters with 2,50 meters between one every directrices), and, by means of a plotter, a series of plans were recon-



structed that were put in relation to data input in the computer, to place the computerized picture and mosaics in the individual *regiones* and *insulae*, individual houses, rooms and walls.

The possibility of using a photomap of this quality and precision has given our Institute an additional advantage, allowing us to follow, by means of the relief map and level curves, the movement and the direction of rainwater, once the replacement of the roofs and sidewalks had been decided.

The photomap, moreover, enables us to study adequately the entire road system of access to the walled city and to formulate proposals for the general system of the area, some of which have been proposed by the Neapolis Consortium itself, as part of the project.

We have considered it of maximum importance to transfer to the computer all the excavation notebooks existing at the Ufficio Scavi (excavation office) of Pompeii (beginning in 1862), and we propose to add the even earlier ones, kept in the National Museum in Naples, in the near future. This computerization of the registers of access to movable material not only serves to make their reading easier (and protecting the originals from wear and tear), but enables us also to read data selectively, having located single elements inferred from the cursory reader of the entire complex of 9593 pages, under the most varied headings (subject, date, material, specific site, room), as well as to obtain enlargements of parts of pages, the better to read the handwriting.

As stated in the first part of this introduction, our Pompeii is a living city. Its millions of visitors are motivated by its being a city stopped by the eruption in a pulsing moment of life on a specific day and kept almost intact, with all that existed at that moment. This makes Pompeii a unique setting to enter into dialogue with the political, social and economic, artistic, professional and artisanal life of an active, productive community. To make clearly perceptible this peculiarity of Pompeii and the other communities around Vesuvius, we used the computer to produce a series of statistics that display, by means of clear and attractive graphics, information on the distribution of the buildings by *Regio* and in relation to the urbanistic and sociological peculiarities of each *insula* or *Regio*. We have counted the individual cult buildings of the whole city and of each *insula* to determine the intensity, frequency and the distribution of these in the context of the whole city. We did the same for the public buildings, and we were able to establish the exact relationship between public civil architecture and public religious architecture, with possibilities of making interesting comparisons with later epochs, where the same investigative criteria are applied to Medieval, Renaissance and Baroque towns. We did the same for commercial buildings and, within that category, distinguishing *cauponae* from *thermopolia* from other retail activities. And we searched the distribution of the brothels and their relationship with the neighborhood and the whole city industrial establishments, be they weavers or garum makers. There followed an interesting cross-section of the distribution of these individual types of building, which will enable us to abstract elements of a general nature on city planning and social, economic and political life of Pompeii and also to relate the characteristics Pompeii with other social, economic and political situations of other ancient sites, but, especially medieval and modern, and also perhaps contemporary, identifying lines of continuity, hiatuses or dissimilarities of undoubted interest to give depth to our knowledge of the ancient world and of its relationship with the modern.

The official part of the project with the Neapolis Consortium having come to an end, our young archaeologists and computer experts have reached a perfect state of cooperation, which has taught the archaeologists how to work the computer and the computer experts the effective requirements of archaeological research, we have had the ambition to attempt the production of a new know-how as expressions of the interaction of the reciprocal synergies in creative teamwork. I have been pleased to express, in these headquarters, my appreciation and my gratitude to all those, in the Neapolis Consortium, who have believed in our approach to research and have participated in this stimulating experience. For our part, my gratitude goes, in the Institute, especially to Dr. Antonio Varone, Director of the Ufficio Scavi of Pompeii, and outside the Institute to Prof. Antonio De Simone, researcher at the University of Naples, who has stood by me in my five years in the Superintendency, with tenacity, ability and affection.

Computer simulation has helped us with restoration of the roofs, installation of new paving, experimentation with sacrifice surfaces, restoration of painting, without wasting energy



and materials, where the solutions, tested directly on the monument, do not seem suitable when repeated on a large scale. The step from simulation to execution takes place only when the solutions predicted on computer are held valid, with saving of money and without experimenting on the monument itself.

Simulation has been particularly advantageous in the restoration of painting, when the support and the pigments are so delicate as not to tolerate excessive material experimentation of many restoration techniques, possible detachment and replacement, restoration of the plasters, analysis of the mortar and infill of the pictures. The entire chain of analyses and proposals for intervention has been entrusted to computerized simulation, with intervention only when the entire gamut of experiments has been tested on the computer.

No less interesting has been the study of the possibilities offered by computers in architecture. We have tried a series of interventions on the Stabian Baths, managing to enter into the building, to rotate the structure, to open the interior like a fan, to fill in the missing parts, and to verify previous reconstructions. To study ancient architecture from the inside, in its essence as enclosed space, by means of computer has been one of the most gratifying experiences of our work with Neapolis Consortium.

One problem we set ourselves, almost as a game, has been that of examining the possibility of better reading of the Herculaneum papyri in the Officina dei Papiri of the Biblioteca Nazionale in Naples. Increasing to the maximum the contrast between the blackened background of the papyri, mineralized by the heat and mud that covered the city, and the ink with which they were written, it has been possible to transfer the writings from black to purple-red or violet in order to make them stand out vividly against the background of the papyrus, which stayed black. The possibilities, moreover, of enlarging even tiny parts of a page has finally permitted others to read what was till now the exclusive field of papyrologists. Simulation also offers specialists the chance to verify readings that were uncertain for them too.

These are some of the fields of application of computers in which we have practiced for the purpose of identifying the *modus operandi* of this new tool at the service of man and his better knowledge of the reality that has surrounded him from ancient times to our own.

Other and more significant uses will be found if our young archaeologists and computer specialists learn to interact and work in synergy. Even in the history of art, the most distant, apparently, from the materiality of advanced technology, information technology starts to play an important role, with the possibilities offered by the scanner to select an infinite gamut of shades of color and to read, by means of pigments, up to the level of the first application of color, acquiring information on changes in the construction of figures, on corrections, *pentimenti* and other elements connected with the very birth of artistic inspiration.

In the light of the observations presented here, it seems to us to have offered a comprehensive vision of how we work in the situation of the archaeology of Vesuvius, specifically in Pompeii, applying a new philosophy that involves the working together of specialists from various disciplines (especially, and for the first time, the applied sciences), in a global vision of archaeological objects that maintains the fundamental and traditional objective of reaching an exhaustive knowledge of classical society in its various components, but it is proposed to reach it, using together with philological research methods the new investigative possibilities offered by the applied sciences and computers. This is, we believe, the essence of this new way of working, of the philosophy of the project, with which we have been experimenting for some five years here at the Institute.

The exhibition which we are presenting for the first time in New York, at the IBM Gallery, hopes with this catalogue to be – as the title itself expresses – a concrete exemplification of this new *modus operandi* in archaeology.

Along with a large selection of works, about two hundred, that present a selection of art, daily life, the *instrumentum domesticum*, the trades in the cities of Vesuvius in the third quarter of the first century A.D., are displayed a series of computers by means of which the visitor can inspect our way of working to acquire greater and more precise knowledge in the field of the science of classical antiquity.

An altogether new exhibition, in the panorama of displays of archaeological material hitherto presented, which hopes to promulgate awareness, especially on the part of our fellow



archaeologists (by their nature, and I include myself, used to deducing the elements of knowledge almost exclusively by means of logic, analogy and juxtaposition, in a chain of interrelations based on the deductive method), from the enormous possibilities offered, to the progress of our knowledge, from the use of the complex of exact sciences, and, especially, from an intelligent management of computers.

BALDASSARE CONTICELLO