



La Polledrara di Cecanibbio (Rome, Italy): preserving and narrating the Pleistocene

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ABSTRACT - The scientific interest of the deposit, the perfect state of preservation of the palaeontological finds whose fossilization was favoured by the volcanic sediments in which they were embedded and the variety of their position - from bones transported and dislocated by waters to those in anatomical connection within the marshy area - motivated the implementation of a project for the musealisation of the site. The museum, realized on the occasion of the Jubilee 2000, allowed to preserve the deposit *in situ*, to enhance it and make it accessible to the public. The site museum project has been in progress for some years and is progressing through various phases of intervention. To allow an immersion in the Pleistocene landscape and to restore form and life to the innumerable remains of the many species visible on the paleosurface, two large panels have been created, placed on the internal walls of the building. The animals depicted in the foreground are life-size, almost in contact with the paleosurface that shows their bones, with the intention of creating a huge window that opens onto the biodiversity of 300,000 years ago. As part of the enhancement and promotion of the Museum, in 2017 a competition was launched for primary and secondary schools in Rome aimed at creating the new official Logo of the Museum, which ended with two exhibitions set up at the Museo Nazionale Romano and, in collaboration with the XIII Municipality, at Villa Carpegna, headquarter of the *Quadriennale di Roma*. At the end of 2022, the didactic apparatus was renewed with new panels and a short film that reconstructs the formation of the deposit in 3D, while the preparation of a different lighting that enhances the paleosurface is still underway. Other more extensive projects are planned in the short term in order to promote and enhance the value of this unique deposit. In particular, a new arrangement of the green area surrounding the museum, a parking area for visitors, a didactic area destined to various audiences, laboratories for the study and conservation of materials, open to the public have been planned. In this new phase, particular attention has been paid to visitors with disabilities, in order to offer better conditions of use and make the Museum more inclusive.

Keywords: Pleistocene; musealization; natural landscape; conservation; communication.

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1. INTRODUCTION

In the North-West quadrant of Rome, numerous Pleistocene sites were identified in the 19th century. In fact, this portion of the territory is still scarcely urbanized today as it has served as an agricultural and grazing area for the 'Pio Istituto del S. Spirito' since 1896 to supply the Ospedali Riuniti of Rome with food. The most significant data for the paleontological reconstruction of this area come from the deposits characterized by the presence of fossil remains and lithic industry at Torre Pagliaccetto in Torre in Pietra (Piperno and Biddittu, 1978), Malagrotta (Cassoli et al., 1982) and Castel di Guido (Radmilli and Boschian, 1996).

At the end of the 1980s, a further discovery expanded our knowledge of the Pleistocene in this quadrant. During the project of systematic surveys of the prehistoric and protohistoric presences in the territory of Rome, promoted by the Soprintendenza Archeologica di Roma (Bietti Sestieri, 1984, 1986), the La Polledrara di Cecanibbio deposit was identified along the slope of a hill, a paleosurface located on the deposits of the Sabatino volcano, rich in fossil bones and lithic industry (Fig. 1).

The site, excavated in 1985-2014 under the direction of Anna Paola Anzidei (Anzidei et al., 2010), revealed an area of 1,200 square meters referable to a river active during the Middle Pleistocene. ⁴⁰Ar/³⁹Ar dating provided a date of 325±2 ka (Pereira et al., 2017) (Fig. 2).

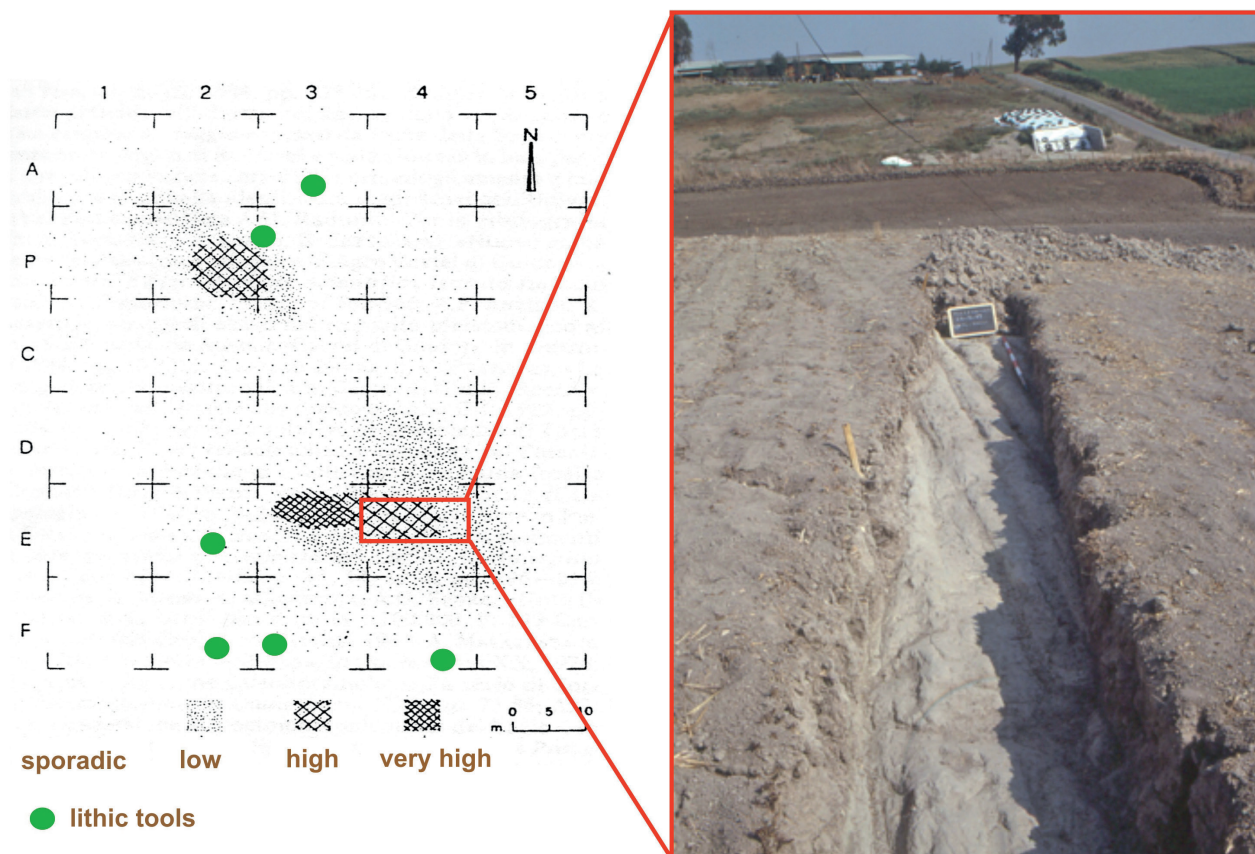


Fig. 1 - La Polledrara di Cecanibbio (Rome): on the left, the result of the field surveys; on the right, the first excavation trench (1984).



Fig. 2 - The first field excavation of the Pleistocene deposit (1985).

2. THE ARCHEOLOGICAL SITE

The stratigraphy of La Polledrara di Cecanibbio revealed two main sedimentary phases. The oldest one, referable to a fluvial episode of medium intensity, is recognizable thanks to a portion of the river bed

incised in the volcanic deposits, with numerous faunal remains, lithic and bone artefacts; the most recent one is characterized by a marshy phase consisting of silt/clay sediments, during which some elephants (*Palaeoloxodon antiquus*) were trapped in the mud. Their carcasses were opportunisticly exploited by the human groups living

in the area, as evidenced by the abundance of lithic tools found around the animals, used for butchering (Anzidei et al., 2012; Cerilli et al., 2023).

The deposit yielded over 20,000 fossil remains, including *Palaeoloxodon antiquus*, *Bos primigenius*, cervids, carnivores, primates, leporids and rodents, as well as small reptiles and avifauna; the presence of humans is widely attested by the numerous lithic and bone artefacts found in the deposit and a deciduous upper left molar attributable to a young individual of about 11 years of age, referable to *Homo heidelbergensis* (cf. Bondioli et al., 2022).

This is the richest deposit in Europe for the presence of straight tusked elephants, but it is also of great importance for the knowledge of the paleoenvironmental evolution of the area during the Middle Pleistocene.

Since the beginning the study of the entire deposit was carried out using a multidisciplinary approach, involving a group of specialists. The research involved the broad spectrum of prehistoric disciplines: sedimentological, geological and geomorphological analyses required for the paleoenvironmental reconstruction, paleontological studies to determine the species and number of individuals present in the deposit, taphonomic analyses related to the post-depositional processes on the fossil remains, paleoanthropological and paleobotanical analyses, and the study of lithic and bone industry, supported by the analysis of use wear traces (Anzidei et al., 2012). A specific study was devoted to the conservation processes of the fossil finds through a PhD dissertation in Earth Sciences defended in 2015 (Marano, 2016).

3. IN SITU MUSEALISATION

The scientific relevance of the Pleistocene deposit, the excellent state of conservation of the fossil finds and the need to protect the deposit during excavation activities prompted the Soprintendenza Archeologica di Roma to implement a project to musealize the paleosite. The roofing, built for the Jubilee 2000, thanks to funding from the then Ministry of Cultural Heritage and Activities, based on a project by Architect Anna Di Bene, made it possible to preserve the deposit, to complete the stratigraphic excavation while leaving the finds in place, and thus to enhance it and make it accessible to the public (Fig. 3 a,b). The quadrangular structure, opening towards SSW on Via di Cecanibbio, entirely covers an excavated part of the deposit of 900 square meters (Figs. 4 and 5).

Inside the structure, a walkway, made of steel grids and glass panels, overhangs the paleosurface with minimal impact and allows to walk over and observe from above the numerous fossil remains in the same position in which the ancient river deposited them (Fig. 6). The building also included a small exhibition section consisting of educational panels. The outdoor area was fenced off for a total area of 3,105 square meters.

The deposit was declared of important cultural interest pursuant to Articles 10, 53, 91 of the Legislative Decree

42/2004 with the DDR of 16/01/2009.

The intention to give form and life to the countless remains of many species visible on the paleosurface has taken shape through the creation of imposing scenographic backdrops measuring 5x28 m and 3.70x20 m, extending over a vertical surface area of more than 230 m², placed on two internal walls of the building. On them, the river and marsh environment with the animals identified on the site and human activities that took place there are represented with scientific rigour, describing the Pleistocene landscape of the area (Fig. 7 a,b). The scenarios are the result of an intense collaboration between researchers and naturalist artists who, through surveys, scientific data, sketches and complex pictorial plates, created the basis from which the large wall banners were developed, designed to break the architectural space of the room through an evocative reproduction of the prehistoric landscape. The animals depicted in the foreground are life-size, almost in contact with the surface displaying their bones, so as to create a huge window opening onto the biodiversity of 300,000 years ago.

4. CONSERVATION AND VALORISATION

The finds that had been taken during the excavation, prior to the construction of the museum, were placed back on the ancient riverbed after study and restoration. The cover created altered the environmental conditions of the deposit. Consequently, from the outset, the deposit was subjected to climatic monitoring and investigations on the state of conservation of the fossil finds in order to plan restoration work to remedy any degenerative process underway (Marano et al., 2016).

For climatic monitoring, data loggers and sensors were installed by SSABAP-RM at strategic points in the museum area in order to record temperature, relative humidity and dew point parameters in continuous periods (Cerilli et al., 2023).

Indeed, the constant monitoring of deterioration processes and their immediate resolution represent the necessary condition for the preservation of fossil finds, and the stabilisation of indoor environmental parameters can be considered the best protocol to reduce the risk of damage to exposed bones (Marano et al., 2021).

Over the course of these years, a series of interventions have been carried out to improve the use of the site, also by initiating collaborations with other organisations and institutes in the area. As part of the Museum's enhancement and promotion activities, in 2017 a competition was launched for primary and secondary schools in Rome aimed at creating the Museum's new official logo. Eighteen schools in the Municipality of Rome responded to the competition (10 Primary and Middle Schools, 8 High Schools) with 275 graphic proposals that in one image summarised the museum, its content and its relationship with the territory. The competition ended with the awarding of the graphic project proposed by



Fig. 3 - a-b) The construction of the roofing above the deposit.

Felipe Minicucci, a 4th year student at the “Liceo Artistico Statale Via Ripetta” (Fig. 8).

In response to the large participation and to make the La Polledrara Museum known to the general public; two exhibitions were held to present all the graphic projects proposed by the participants. The first, to coincide with the award ceremony of the competition, in June 2017, set up in the rooms of the “Piccole Aule” of the Museo Nazionale Romano - Terme di Diocleziano; the second, realized in collaboration with the Municipality XIII in which the site falls, at the headquarters of the *Quadriennale di Roma* in Villa Carpegna (Figs. 9 and 10).

It is not easy to make this kind of site comprehensible to a vast number of visitors. This is why we have worked on communication employing various tools: new panels with a language that expresses contents of high scientific level

but - at the same time - comprehensible to all, supported by an illustrative apparatus aimed at the specificities of the deposit; a film that, on the basis of the 3D survey, shows to the public the formation of the deposit and reconstructs the image of the animals starting from the bones present on the paleosurface (Fig. 11).

In the new layout, the panel supports have been designed with pull-out drawers that contain a representative sample of the faunal remains and of the artefacts found at the site, i.e., mammals smaller than elephants and avifauna accompanied by reconstructive drawings that illustrate the finds; the exhibition closes with some lithic and bone artefacts that tell the story of human presence at La Polledrara.

In such situations, it is necessary to make an enhancement of the sites that can emphasize their



Fig. 4 - General view of the Museum from above.

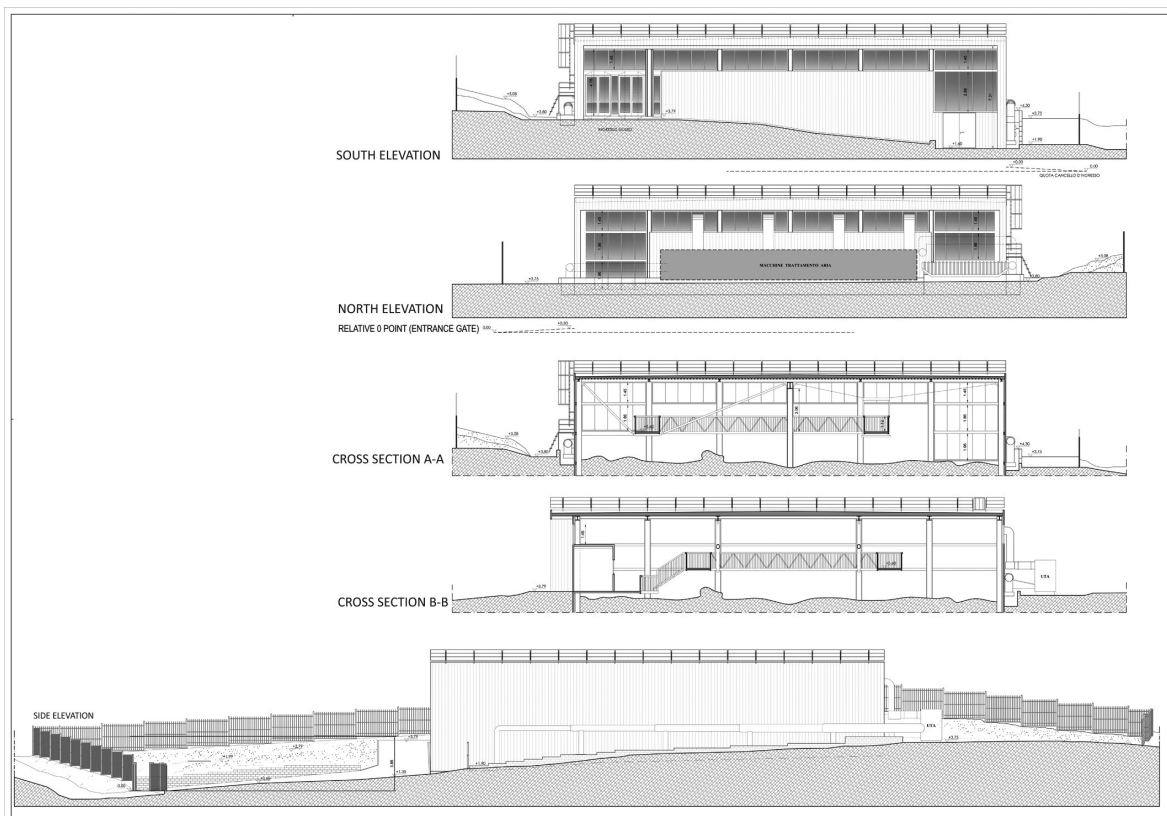


Fig. 5 - Tables and sections of the Museum structure.

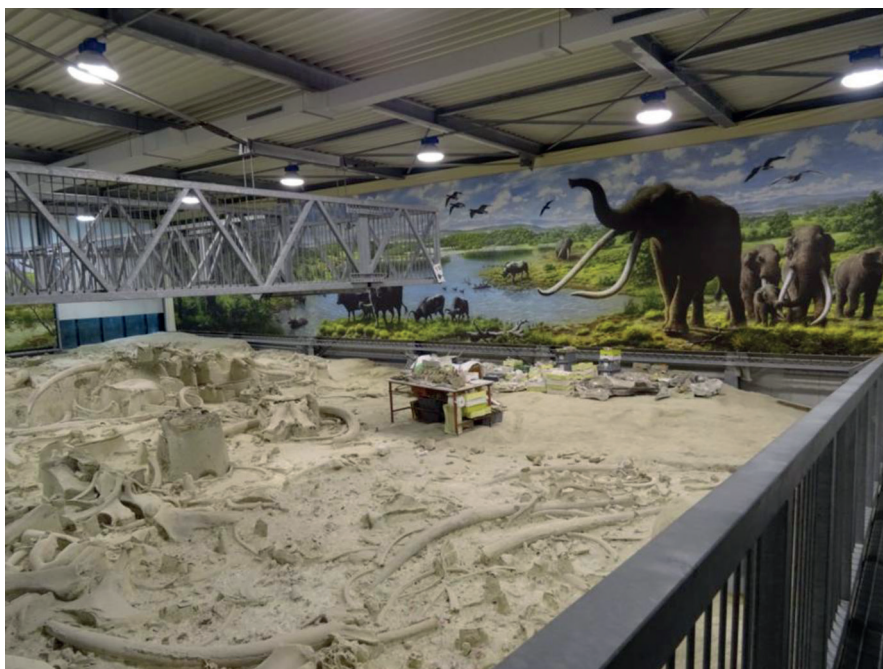


Fig. 6 - Interior of the Museum with the walkway placed above the paleosurface.

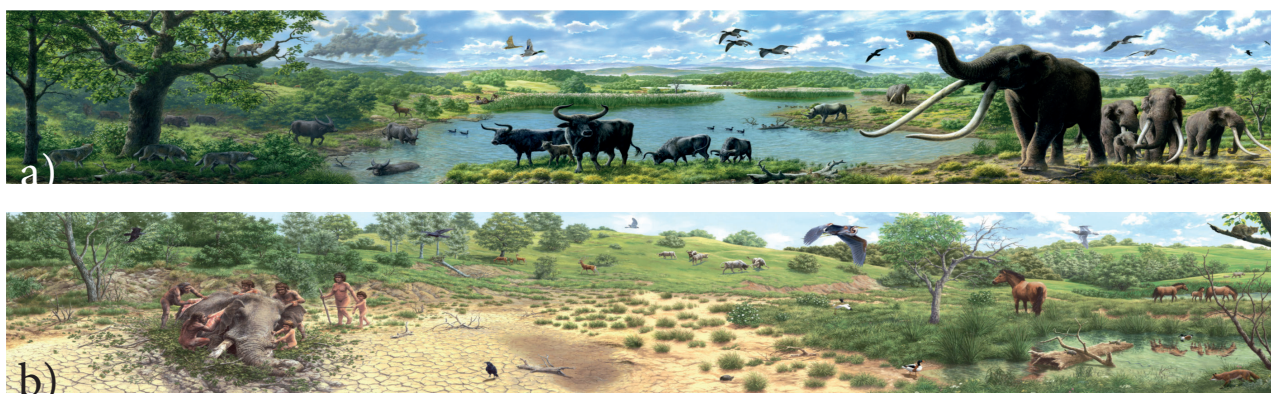


Fig. 7 - a-b) Scenic panels with environmental reproduction.



Fig. 8 - The winning graphic project of the competition “A Logo for The Polledrara”.

scientific sense and value, but also amplify their perceptive appeal. This program will be implemented in successive steps, with a clear objective of the final result, which will also include the creation of an “immersive” environment through multimedia solutions, sounds, noises, with the intention of reducing all visual disturbances present (i.e. invasive structures, intrusive installations, incongruous light sources).

Some steps have already been taken, such as the darkening of the glass windows and a series of actions to mitigate the elements disturbing the perception of the paleosurface, such as modifications to the parapet and the walkway floor, replacing the horizontal Keller grid with glass panels to increase the already existing transparent portion. In order to bring the visitor’s attention to the most significant elements in the deposit, special attention was paid to a new lighting and electrical system. The



Fig. 9 - Roma, Terme di Diocleziano - Piccole Mostre: Exhibition of the projects that participated in the competition “A Logo for...” (June 2017).



Fig. 10 - Roma, Villa Carpegna: Exhibition of the projects that participated in the competition “A Logo for...” (December 2017).



Fig. 11 - The new educational panels.

museum was equipped with lighting capable of inducing a visual perception of suggestion and effect, appropriate to the particularity and importance of the place.

In the recent work to enhance the site, in order to offer better conditions of use and make the museum more inclusive, special attention was paid to visitors with disabilities. The teaching aids have been supplemented by a video in Italian sign language (LIS) and British sign language (BSL) and QR codes for the visually impaired have been placed in the panels. These multimedia supports have been published on the institutional website of the Superintendency.

5. NEXT OBJECTIVES

In order to make the Museo Paleontologico - La Polledrara, located in the middle of the countryside, between the Boccea and Aurelia streets, more attractive and more inclusive, an absolute priority is to make the access roads to the structure, which currently lack ordinary maintenance, more accessible. In this field too, a great deal of work has been done in recent years with the institutional interlocutors, the Latium Region and the

XIII Municipality, and a discussion table is now open, which we hope will soon lead to a definitive solution to this problem.

Also with the Latium Region, negotiations are underway to acquire a larger area around the museum in order to increase the available space from the current 3,105 square metres to 5,000 square metres. In this space, it is planned to create a parking area for visitors, a didactic area for various audiences, and laboratories for the study and conservation of materials open to the public (Fig. 12).

Finally, with a view to greater enhancement and above all to integrate the La Polledrara into the surrounding area, plans are underway to create differentiated routes that will connect the various archeological and naturalistic evidence existing in the municipality.

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Fig. 12 - The project for the arrangement of the Museum's outdoor area.

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