

The Architectural Design as a Tool of Knowledge and Enhancement of the Cultural Landscapes of South Africa

Archaeological sites are bodies of sick architecture that present themselves to us in the most disparate ways. Sometimes they are located within cities or consolidated historical contexts, other times they are relegated to a condition of territorial marginality. Certainly, regardless of the scale of the object, the archaeological site is linked to the landscape in which it is inserted. As part of the scientific research activities carried out within the Italy-South Africa joint Scientific Research Project entitled Documentation, Project and Enhancement of Cultural Landscapes in South Africa, funded for the year 2020 by the Italian Ministry of Foreign Affairs and International Cooperation, within the Architectural design laboratory III at the Department of Civil Engineering at the University of Salerno, we focused on the development of architectural design proposals on the theme of an Interpretation Center for the archaeological site of Moxomatsi, a 17th century Bokoni Capital in the region of Mpumalanga in South Africa. At the base of the projects developed by the students there is a careful process of knowledge of the archaeological site that made use of the studies and surveys conducted by the research group of the University of Salerno, and the contribution of colleagues from the architecture department of Tshwane University of Technology of Pretoria in South Africa.

Keywords: *architectural design; cultural landscapes; Moxomatsi archaeological site; South Africa; documentation, project and enhancement.*

Introduction

In the time in which we live, marked by contradictions, inhomogeneity and liquidity, cultural heritage is not always recognized as a deposit of knowledge for the future, often relegating it to a stagnant and embalming condition in which objects and artifacts cross histories and generations without express the idea of a lively transmission of what makes up cultural memory and the past which, on the other hand, should be seen as continuous food for the organization of the present and the construction of the future (Canfora 2014; Montanari 2014; Settis 2022).

In the articulated variety of the different forms that distinguish our heritage, made up of stones and cultural values, the most widespread attitude towards them is that of extraneousness, or even otherness, as the heritage of the past, often seen as an overwhelming and oppressive, it is separated from the present by a temporal distance that identifies it as something different and alien to the culture to which we belong. This attitude does not allow the establishment of a critical dialogue between the past and the present, showing the impossibility of carrying out deeper investigations and comparisons or meaningful reinterpretations. In fact, as Salvatore Settis argues, our heritage: «it is not a foreign entity, dropped from the outside, but something we have created over time [...]; not a nest egg in the piggy bank, to spend if necessary, but our

memory, our soul. And it is precisely this connective tissue that makes the Italian heritage as a whole invaluable also in terms of the image and enhancement of the country. Our most precious cultural asset is the context, the continuum between monuments, cities, citizens» (Settis 2002: 8).

What appears today in our landscapes is the millennial palimpsest of stories and traces of the past that present themselves to us as a conjunction of both similar and different languages and whose knowledge must not trigger an attitude that involves an incommunicability between ancient and modern languages. On the contrary, the architectural project must dialogue with the traces of antiquity to make the text of the geography of the territories clearly legible, interpretable and above all transferable as cultural heritage to future generations. In operating in a condition of inhomogeneity and contradictions between the past and the future, one must therefore confront the archaeological evidence, avoiding the danger of accentuating the physical and functional limits, to investigate the new possible semantic conjunctions between the past and the future, in order to foresee a new scenario capable of recognizing the grammars of the archaeological landscape.

Compared to the, often ungrammatical, text of archaeological areas, the possibilities on how and what to do can be many and different, from pure conservation to backfilling; from the musealization to the construction of structures to protect the remains. Today it is necessary, through the project, to take a clear and precise position.

The architectural design in archaeological landscapes can be understood as the conjunction of systems - archaeological, geographic and architectural - which tend to influence / flow into each other through an interference operation which likewise ripples, instead of overlapping, tend to knot the patterns they insist on (Ricci 1990: 143-153). The interference project aims to work at the stitches and the edges between the old and the new and to reconsolidate the relationship between landscape, architecture and archeology.

When dealing with a landscape-scale project, in which ancient traces are mixed in complex territories, the greatest difficulty is to make an architectural project a great testimony of the potential for renewal that is able to make the ancient ruins the truly new part of renewal.

Literature Review

The archaeological ruin must not be considered only as an artifact, but as a significant component of the landscape that may be able, above all through the project, to re-signify. The ultimate aim of architecture is therefore to make archaeological landscapes recognizable, meaning them in their operative and intentional character, through procedures that aim at the protection, use and enhancement of the sites.

The place with its specific geographic components, where are located the archaeological presences, is the real guide for the project, which starts from the critical reading of the permanents and transformations in order to promote a

new artefact that must be inserted responsibly within a stratified context and which itself represents a new, but not the least, stratification . The architectural project must be able to make the ruin interact, perceptually and semantically, with the landscape in which it is inserted. In achieving this goal, the greatest difficulties that are incurred concern the scale of intervention, the architectural language and precisely the difficulty of interpreting the ruins in order to metabolize the lessons of the past.

With respect to these issues, some projects on a landscape scale are investigated for the reconfiguration of a new identity of archaeological landscapes. The research work undertaken in Spain by the design group LAB | P | A | P, Laboratorio para la investigación e intervención en el paisaje arquitectónico, patrimonial y cultural, is exemplary of a theoretical positioning that focuses attention on identifying and make manifest the characters that belong to the “cultural landscape”, interaction of the interaction between natural elements, landscape methods, archaeological remains and architectural elements, thus implementing a logical experimentation of design. The reflection made on the questions concerning «el tiempo y la memoria como materiales básicos del proyecto arquitectónico» (Álvarez 2015), have produced with great effectiveness and mastery, several projects in which the idea of the landscape becomes fundamental as the engine of the systems for modifying public space. The projects on which attention will be focused are located in Spain and they are: the enhancement of the Roman Forum in the archaeological site of Tiermes (2007-2010), the Iter Plata project (2010) and the path to the Puente Villarente (2012).

The Tiermes project area (de la Iglesia Santamaría 2008) is located on a plateau about 1200 meters above sea level in the municipality of Montejo, belonging to the Castilla y León region, and is bordered by two rivers, Duero and Tagus (Figure 1). The archaeological site is characterized by the presence of Roman ruins mixed with remains of rock consistency, partly reused by the Romans after the conquest of the city, and is arranged on terraces of red sandstone, which gives the vivid color that still distinguishes it today. In the idea that, as Norberg-Schulz recalls, «making architecture means visualizing the genius loci» (Norberg-Schulz 2011: 5), the project involved the unveiling of the formal and semantic values linked to the forum, including in its physical and virtual extension also other archaeological emergencies. The space of the ruins is transformed into a cultural landscape, in which the open space becomes a public space crossed by wide and flexible paths (Figure 2).



Figure 1. LAB/P/A/P, View of Enhancement of the Roman Forum in the archaeological site of Tiermes (2007-2010)
Source: <http://cargocollective.com/labpap/filter/Proyectos/Tiermes-1>



Figure 2. LAB/P/A/P, Plan of Enhancement of the Roman Forum in the archaeological site of Tiermes (2007-2010)
Source: <http://cargocollective.com/labpap/filter/Proyectos/Tiermes-1>

The Iter Plata project (Álvarez, de la Iglesia Santamaría 2013) configures

the cultural landscape as an infrastructure which, instead of being exclusively a place to be protected, is a tool capable of reading the peculiarities and contradictions scattered along the ancient Roman road in the province of Salamanca (Figure 3). With the aim of recovering material and immaterial traces, a path is structured in which new elements are grafted that bring out the complexity of the heritage belonging to the Via della Plata which partly coincides with the Camino de Santiago (Figure 4).

These projects demonstrate how, starting from a common approach to other very important experiences, such as Pikionis and Tsiomis in Athens (Ferlenga 2014), it is possible to both develop a project for the future with the materials of the past and configure a landscape through the re-semantization of the ruins and the articulation of new architectural elements, which like a spinal column, holds together and united different and distant elements. A project carried out without self-referential signs and with great finiteness for the enhancement of public space in contemporary landscapes.

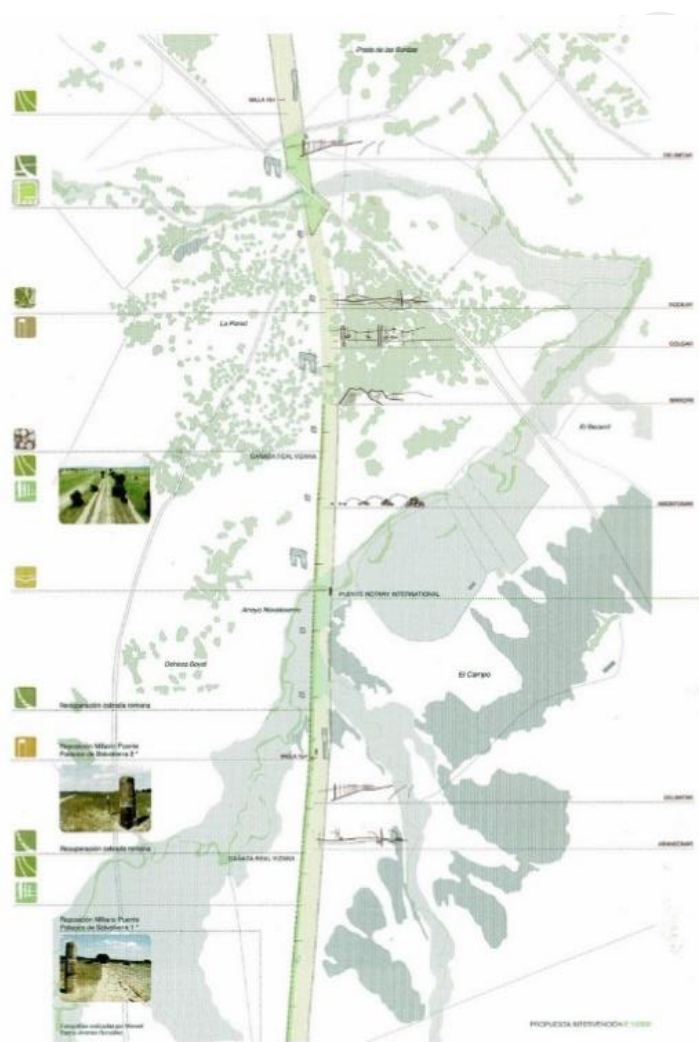


Figure 3. LAB|P|A|P, Iter Plata' plan project (2010)

Source: <http://cargocollective.com/labpap/filter/Proyectos/ITER-Plata-3>

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Figure 4. LAB/P/A/P, *Puente Villarente* (2007-2010)

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Source: <http://cargocollective.com/labpap/filter/Proyectos/ITER-Plata-3>

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Another experience that goes in this direction is that of Gigon/Guyer for the project of the Archaeological Museum and Archaeological Park in Bramsche-Kalkriese in Germany, which articulates different spaces and key points within three different paths (Figure 5). The project describes, through these paths, which retrace the route of the defensive embankment, the places of the battle of Varo between the Romans and the Teutons, of which that site was the scene in the 9th century BC. Within the same project, three pavilions, a museum and a reception center, all through a single unifying language of the intervention.



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Figure 5. Gigon/Guyer, *Archaeological Museum and Archaeological Park in Bramsche-Kalkriese in Germany* (2002)

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Source: <https://www.gigon-guyer.ch/de/project/museum-kalkriese/>

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The insertion of a new architecture in stratified contexts needs to take into

account three aspects, as recalled by Pierre Alain Croiset who reports the lesson of Rafael Moneo: «the awareness of having to build within a historical, and therefore lasting, strong time of the responsibility to propose a new building which, starting a life of its own, will in turn have to undergo future transformations; the need to exercise a very acute and specific critical reading of the place of intervention, of its architecture, in order to interpret its characteristics of permanence and possible modification; the difficult choice of an architectural language and a range of materials that prove to be appropriate, knowing that there is no possibility of a simple determinism between critical reading and design choice (Croiset 2007).

The place with its specific geographical components that welcomes the archaeological presences is the real guide for the project, which starts from the critical reading of the permanences and transformations in order to propose a new artifact that must be inserted responsibly within a stratified context which itself represents a new, but not the least, stratification. The architectural project must be able to make the ruin interact, perceptually and semantically, with the landscape in which it is inserted. In achieving this goal, the greatest difficulties that are incurred concern the scale of intervention, the architectural language and precisely the difficulty of interpreting the ruins in order to metabolize the lessons of the past.

Research Methodology

The Bokoni settlements built by the Bokoni community between the 16th and the 19th century AD represent an important archaeological testimony in north-eastern of South Africa (Figure 6).

The Bokoni was a pre-colonial, agro-pastoral society found in northwestern and southern parts of present-day Mpumalanga province, South Africa (Delius et al. 2014). The Bokoni occupation sequence has been divided into four chronological phases and the Moxomatsi settlement has been attributed to the early second phase, which probably dates to the 17th century AD (Delius, Hay 2009; Schoeman, Delius 2011; Delius et al. 2012). Moxomatsi was the earliest Bokoni capital, the core of the town comprises densely clustered stonewalled homesteads. Each homestead has associated terraces and a complex road network intersects the site (Delius et al. 2012).

In this region of Africa are typical and representative of the Bokoni civilization, the sites with stone walls (Delius 2007) (Figure 7). They come in a variety of shapes, mostly circular, which are accompanied by the presence of significant stone terraces of local origin (Figure 8 and Figure 9) and form a series of artifacts including farms, roads and animal enclosures.

Bokoni homesteads share a degree of uniformity in their layout: central livestock kraals, surrounded by domestic spaces, in turn surrounded by an encompassing outer wall (Delius et al. 2012). Most of the time, a homestead is connected with a small, individual road to a larger, communal road leading to other homesteads and other parts of the settlement.



Figure 6. *Location of the Bokoni sites in Mpumalanga, South Africa*

Ruins of Bokoni stonewalled settlements cover an area of 10 000 km²; Moxomatsi, the earliest Bokoni capital mentioned in recorded oral histories, is located in central Bokoni. In the area, the close relationship between the way of living and that of building is evident (Coetzee 2008). The Bokonis lived at that time mainly dealing with agriculture and cattle breeding.

In fact, the cities consisted mainly of roads, terraces and farms. The neatly arranged stone sites are loose packed stone on top of each other in a circle pattern that cover a vast area in the province. Stone terracing and walls have been seen to range from 1.2 to well over 2 meters in height and smaller circles are grouped inside a massive outer ring. The walls were part of much larger city that included farmlands, houses and cattle pens, with roads connecting between them. On the outskirts there are agricultural terraces, demonstrating that the members of the tribe had learned the art of managing land and livestock. The roads were built with two parallel rows of stone with a maximum width of one meter, so that the cattle grazed in one row. The rocks with which the delimitations of roads and terraces were made were in dolerite, whose decay allows it to supply nutrients to the soil (Delius, Schoeman 2010). In addition, the arrangement of the stones to build terraces and roads were useful in the fight against soil erosion in mainly hilly sites.



Figure 7. *The stonewalled settlements in the south of Moxomatsi, Mpumalanga, South Africa*

Source: Google Earth.

The cultural and architectural richness of these landscapes is in danger of being lost. In these landscapes ruins are abandoned, broken and interrupted architectures that time brings to us in their incomplete fragility and the moral instance that belongs to us must govern the mind and the hand of the architect to re-signify the past, giving shape to his project of the past, without giving in to the temptation to use languages that do not belong to the present but working on the deep structure of things. In fact, Giorgio Grassi writes: «Working on artifacts that are in this state [of ruin] almost always working on works that still show, for some reason, have meaning, incomplete, which have not exhausted their answer, which still present or their open problems are new: artifacts that still appear to us as projects. In these extraordinary cases our work has the possibility of becoming a large part, so to speak, of a work that has already begun, older, more authoritative and. [...] And this is also why an ancient artefact found in these conditions must artificially survive as many would like (“conservation” at any cost), but recover, rediscover its *raison d’être*: as architecture [...]. In the best examples, in the cases they consider more successful, more “right”, [...] it always seems that the old is added to the new, as if to complete the answer (from the facade of Santa Maria Novella to the Malatesta temple, to remain at the Alberti). In the end, this apparent result is suitable because the conditions of the old man have changed so much, the objectives of one and the other have become so confused and overlapped that, without losing its truth, its singularity, etc. while always remaining himself, it is the old in reality that becomes the truly new element of the project: the

touchstone of the project transformed into the stone of its construction» (Grassi 2002: 296).

With the aim of countering the phenomenon of extraneousness of the ruins, strategies have been identified that operate on the archaeological ruins in order to enhance the existing heritage to allow the use and protection of the ruins through the recognition of the values and essence of the places. The archaeological fragment is presented as an unfinished architecture, a latent and virtual presence and which for this reason is waiting to be completed, regaining a new life.

Obtained Results

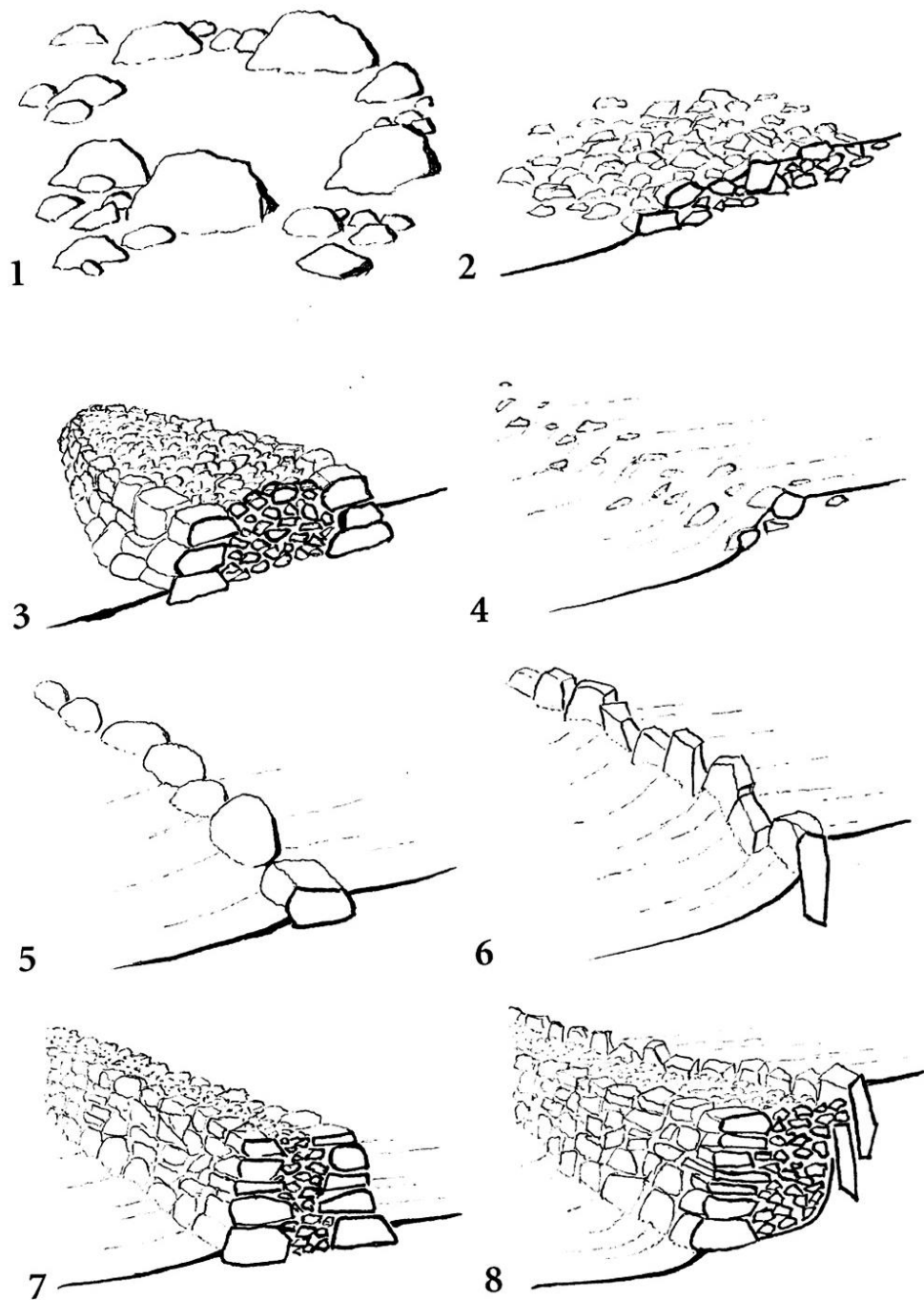
As part of the scientific research activities carried out within the Italy-South Africa joint Scientific Research Project entitled *Documentation, Project and Enhancement of Cultural Landscapes in South Africa*, funded for the year 2020 by the Italian Ministry of Foreign Affairs and International Cooperation, within the Architectural Design laboratory III at the Department of Civil Engineering of the University of Salerno¹(Figure 10), we focused on the development of architectural design proposals on the theme of an Interpretation Center for the archaeological site of Moxomatsi.

At the base of the project proposals developed by the students there is a careful process of knowledge of the archaeological site that made use of the studies and surveys conducted by the research group of the University of Salerno led by Professor Salvatore Barba (Ferreyra et al. 2020), and the contribution of colleagues from the Architecture Department of Tshwane University of Technology of Pretoria in South Africa.



Figure 8. Stone terracing and walls in the archaeological site of Moxomatsi

¹Architectural design laboratory III, DICIV, University of Salerno, 2019-2020, Prof.: Roberto Vanacore with Manuela Antoniciello and Felice De Silva.



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2 **Figure 9.** *Agricultural features in the Bokoni landscape. 1) Stone cleared*
3 *surfaces 2) Clearance cairn, rock pile, 3) Clearance cairn, faced 4) Lynchet 5)*
4 *Stone line, plain stones, 6) Stone line, upright slabs 7 Double faced wall, 8)*
5 *Terrace wall developed from line of upright slabs (Drawing Tim Maggs).*
6 *Source: Widgren et al. 2016*

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8 The issue of the design research work carried out within the Architectural

design laboratory III were to guarantee the accessibility, enhancement and use of the site with respect to a cultural horizon that looks at the historical landscape and cultural heritage present in it with the proper approach of landscape archeology, which studies the territory by systematizing the natural components and the tangible and intangible elements produced by man. The design in archaeological areas must be able to operate on the conditions of inhomogeneity, partiality and discontinuity of the ruins present in the archaeological landscape, an action through the thematization of the vaults to accessibility, actions for use, protection and enhancement.

The type of protection is not mere conservation, but is what is generically called *active protection*, which involves the fall of physical and disciplinary fences for a greater enhancement of the cultural asset in relation to the context in which it is inserted.

The project proposal designed by the students include a complex functional program which includes: infopoint, restaurant, exhibition space, teaching space, observation point, laboratories and parking areas.

An important activity for the elaboration of the projects has been the realization of a paper and clay study model, made by the students, which allowed to fully understand the orographic complexity of the site which develops on a steep slope from the driveway, which delimits the site to the east, towards the central part of the archaeological site to the west (Figure 11).

The first project proposal stems from the idea of enhancing the site and the surrounding area while preserving the identity of the area and that of the Stone circles.

The project idea develops the theme of the path whose continuity is interrupted by some platforms that, adapting to the orography, take on different shapes, sizes and inclinations, and generate changing points of view (Figure 12). The platforms become the bases on which to build some pavilions, arranged according to the visitor's needs. This creates a dynamic route organized according to two different and opposite perspectives: from the highest point to the height of the road, the entire project is almost imperceptible. The new volumes, which house different functions (infopoint, restaurant, exhibition space, teaching space, observation point, laboratories), are discovered as you descend approaching the stone circles, up to the lowest point where the true nature of the project with a complete view of the elevations.

The second project proposal aims to shape the idea of a temporal path, which leads visitors to discover the history of the daily life of the civilization that lived on the site. The elevated path is marked by pavilions with different functions: educational points, orientation points and refreshments; all share common shape and materials. The sloping orography of the site is used to create an elevated path from which to observe the "Stone Circles" and the natural landscape. Access to the site is allowed from the main road, which leads to a parking lot adjacent to it.



Figure 10. *The students during some phases of the design workshop*

The car park has been designed to accommodate both cars and buses; a pedestrian path starts from the parking lot which leads to the market area. The market is developed on several levels that follow the morphology of the land, to create a symbiosis with it. Continuing along the path, visitors arrive at the museum, the heart of the project as the starting and ending point of a journey through time. The shapes and materials of each individual pavilion were chosen to develop the idea of protecting what is inside: therefore, the wooden shell structures envelop underlying volumes. The shells and elevated walkway through the site are symbolic for the protection they offer to the central structures, namely individual buildings and stone circles. To ensure maximum perception of the site and the ruins, some point-like platforms, that act as viewpoints on the rest of the site, have been designed.

The goal of the third project proposal (Figure 13) is to create a close perceptual relationship between man, archaeological landscape and nature. For this reason, the students imagined a walk between the highest area, which has a direct connection with the highway, and the archaeological site, ensuring a visual connection. The first building is located in the area closest to the access road to the archaeological site. This is an entrance building to the area that contains museum spaces and services. From the roof of the building, it is possible to observe the entire area while from the lowest altitude, which is reached by entering the building, it's possible access the path that crosses the archaeological site. Along the way there are three smaller elongated buildings that contain a market of typical products, an educational laboratory and a small exhibition space. The shape of the three small pavilions follows the path and folds to frame points of view on the stone circles. The three pavilions are

linked by a central open space marked by a gigantic African Baobab that symbolizes the relationship between man and nature.

The fourth project proposal identifies a path that connects an auditorium, a patrol station, a restaurant, a market space and laboratory spaces for archaeological activities on the site. The commercial spaces are positioned parallel to the nearest national road to have a physical and visual connection. There is also a path inside the archaeological area that accompanies visitors to discover the site. The path is punctuated by the presence of some multifunctional pavilions that can play the role of panoramic telescopes or laboratory and teaching spaces or spaces to sleep.



Figure 11. Views of the study model made by students (paper and clay)



Figure 12. Image of one of the students' project proposals

The general idea of the latter project proposal consists of a long system of pedestrian paths that crosses the archaeological area. The main objectives of this project are to have an important relationship between nature and architecture and to work with the strong horizontality that the archaeological site has, considering its differences in height and its characteristics. Starting from the main road, the parking area is the starting point of visit. The high stone walls, located with different orientations, define the path leading to the ruins, giving people the opportunity to look at the site from different points of view. The info point and the ticket office, located “inside” the stone walls, are both very similar. The heart of the project is the large square, built around the first stone circle, where the restaurant and market are located (Figure 14).

Conclusions

The project proposal designed by the students are certainly germinal proposals that meet the objective of the collaboration with the department of Tshwane University of Technology of Pretoria in South Africa to know and take care an archaeological site that unfortunately is currently threatened by neglect and personal interests. The research and design experience object of this paper, is part of a broader line of research on the issue of the architectural project aimed at the protection, use and enhancement of the archaeological heritage, carried out at the Department of Civil Engineering of the University of Salerno (Antoniciello, De Silva 2022; Vanacore et al. 2019; Antoniciello 2019; Vanacore et al. 2017 a; Vanacore et al. 2017 b).



Figure 13. Images of one of the students' project proposals

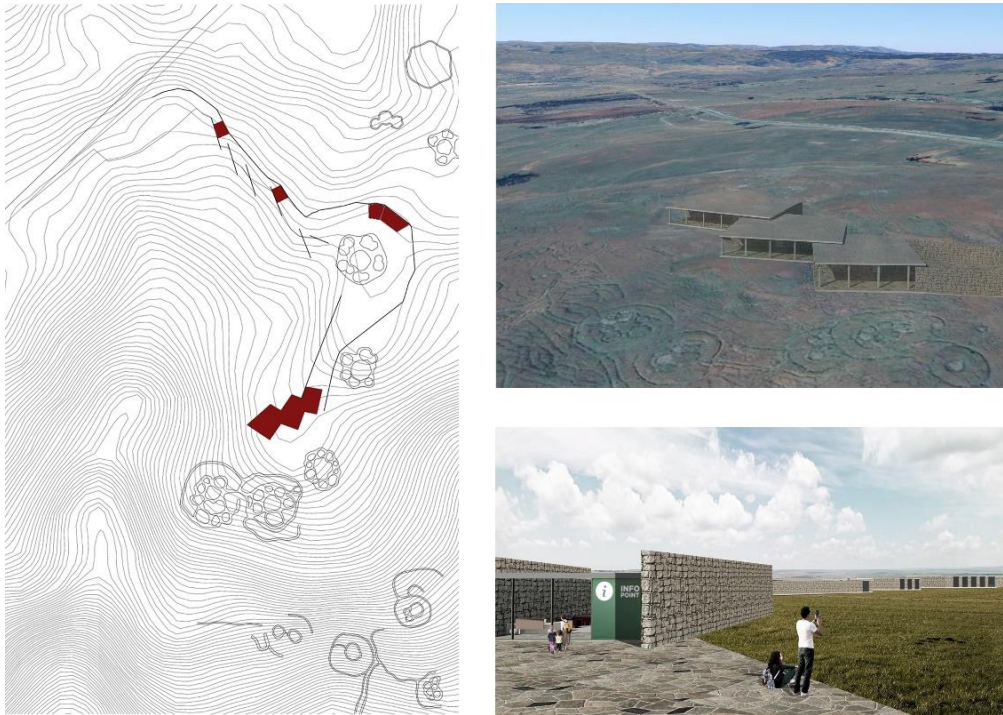


Figure 14. Images of one of the students' project proposals

The general topic of the research line is to investigate together the conditions of the assets and archaeological areas of the territory in question, the physical, perceptive and functional relationships between them and the surrounding urban and territorial context and the most effective techniques and methods for promote their protection, accessibility and usability, in an integrated conservation logic.

As part of a study on the conditions of the architectural project between *innovatio* and *renovatio*, the research focused on the theme of the architectural project for the archaeological heritage, understood as the communion of the building with its context. In fact, if the artefact must be protected in its physical conditions so that it retains its value as a testimonial document of the product of an ancient civilization about which it communicates and tells us something, it is also true that it becomes a physical presence that interacts, perceptually and semantically, with the context in which it is inserted; it becomes, in short, part of the wider landscape that surrounds it. Therefore, also the meaning that is normally attributed to the terms “conservation” and “enhancement” can turn towards meanings that consider this artifact not only an archaeological find, but a significant part of the landscape, understood in its naturalistic/environmental and architectural/urban components (Ricci 2006; Settis 2013; Vanacore et al. 2017 b).

In this regard, «the key concept is then to consider the archaeological theme in its unfolding from the object to the territory, reflecting at the same time on a possible new meaning to be attributed to the word “protection”, “conservation” and “enhancement” around which every intervention on an artifact of archaeological interest» (Vanacore et al. 2017 b). The archaeological

ruin must not be considered only as a relic, but above all as a significant component of the landscape that may be able, through the project, to re-signify. The archaeological site and the landscape in which it is inserted are «linked to the lives of human communities since their origins: from their effort to survive in a natural world that is more hostile and implacable than it is gentle and generous, to the outcomes of brilliant discoveries outlining ways of relating to nature by transforming and constructing the world through different forms of domestication» (Nunes 2022: 5). The ultimate goal of architecture is therefore to make archaeological landscapes recognizable, meaning them in their operational and intentional character, through procedures that aim at the protection, use and enhancement of the sites.

In this respect, the archaeological site of Moxomatsi could become a real open-air laboratory in which all the aspects discussed here - archeology, landscape, human interventions - can be appreciated by a diverse audience motivated by both related interests to the disciplinary study and to the free time.

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