THE ARCHITECTURE OF SUBTRACTION IN THE RURAL LANDSCAPE OF CENTRAL ITALY: CONSERVATION AND VALORIZATION

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1. Introduction

"By sculpture I mean that which is fashioned by the effort of cutting away". This statement by Michelangelo Buonarroti (1475 – 1564) expresses the platonic concept of the preexisting idea trapped within the constraint of the block from which the artist has to set it free by removing the excess (covering). The sentence also communicates another concept, which is the struggle between the man and the rock that has to be tamed and "obey the intellect" [1].

Leon Battista Alberti in "De statua", a treatise written in 1462 on the theory of sculpture, had already classified it as either "adding" or "removing", depending on the technique that was used. Michelangelo, painter, architect and writer, who considered himself above all a sculptor, takes up this classification and going to extremes states that sculpting is done by "cutting away" and not by "adding" as happens, instead, with painting, clay modeling and bronze statues.

The sculptor eliminates the material that hides the shape, as the latter is already ideally present in the rock: their task is to reveal it, through manual labor that is, at the same time, a process of the intellect and of the spirit. The idea is already there even before the creative act takes place; it is the artist's task to make it visible [2].

As in the architecture of subtraction the idea of the environment to be obtained by carving it out is already there and is "easy" to shape with effort and time: concepts that until the middle of the twentieth century were not valued as they are today.

And it is exactly with this perspective in mind that the designer-creator-maker acted. The utensils were few and simple: a pick, wedges and a shovel.

This is why it was more convenient to excavate a cellar, a storeroom or a well, compared to constructing by adding, since the materials (mortars, beams, shingles, etc.) were expensive, not to mention the time and effort that was needed.

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2. The architecture of subtraction

Negative architecture, passive architecture, underground architecture, subtractive architecture are all terms that refer to the architectural technique in which you do not build but take material away from the rock to obtain spaces simply by carving it, in other words by cutting away, forcefully or artfully taking away, removing. For this paper, it was decided that the term subtractive architecture would be used to refer to enclosures obtained by cutting away and removing material from an existing volume, as well as to conform to other authors. This underlines the intentionality of the act of subtracting, in the same way architecture built on the surface is the result of an act of adding, that is, of the assembly and addition of materials. [3]

Subtractive architecture was born as a result of chiseling the natural landscape to then blend in with it, so it becomes an integral part of it. It communicates with the surface of which it is a natural extension. Therefore, it does not stand alone confined to a space in the ground. The difference is evident, positive architecture is additive, since it exists in an environmental context as an added object and is for this reason recognizable, distinguishable, and in many cases invasive. [4]

Research takes into consideration only some types of subtractive architecture for the purpose of study and photo cataloguing, that is to say, it considers a type of subtractive architecture that has no definable historical or archeological characteristics and, at least on paper, has not yet been considered as needing protection, as in the case of sepulchers (unless they have recently been adaptively re-used for a new scope) or the well-known Sassi di Matera, registered on the list of Unesco World Heritage Sites in 1993.

Interest, therefore, derives from different issues.

The redevelopment and/or eventual reuse of these types of architecture up to recent times (there are very few cases relating to current day uses or continued use over the centuries) has enabled us to understand how the territory was used.

These environments are evidence of a considerable piece of history, culture and society that the territory has experienced and continues to experience. They recall matters relating to daily life and working conditions, because until a few decades ago they were inhabited and used. An evocative painting from the 1940s by the artist Pietro Canonica, who was appointed Senator for life of the Italian Republic for artistic merits, portrays this reality: the title “Case nel tufo” (houses hewn in the tuff rock) is unequivocal in showing how these environments were used (Figure 1).

However, it should be noted that very few excavated structures made centuries ago to serve a specific purpose stayed that way through the years and were still in use in the 1900s. Therefore, the paper looks at excavated structures that were still being used in the 20th century, and usually include storerooms, cellars, shelters or stables, although they may originally have had a different function: from the reused Etruscan sepulcher (as in the case of Grotta porcina in Vetralla in the province of Viterbo, an Etruscan tomb which, as its name suggests, was converted into shelters for pigs and, later, as a storage space for agricultural vehicles) to new constructions, such as the cellars in urban centers, the quarries for extracting construction materials, the wartime shelters and stretches of road.

The idea is to propose a different point of view (an original one), where instead of the original function of the place, preference is given to its reuse, seen as an expression not just of one civilization but of all the civilizations that have utilized these places up to the present day. The approach, therefore, not only relates to archeology, understood as the science that studies civilizations and human cultures of the past and their re-

lationship with the surrounding environment, through the collection, the documentation and the analysis of the material traces they have left behind (in this case the architecture), but also and especially to anthropology and the history of rural farming culture which, unless it is passed on, risks falling into oblivion.

The passage from the 1800s to the 1900s is a period of transition: the basins made for macerating the hemp and flax used to make ropes (where few traces of its production remain, if not in the local toponymy: in Vetralla, the street named Via dei Funari, meaning rope-makers, still exists) and textiles, start being built in stone.

Most Etruscan and Roman canals and aqueducts have been abandoned. During the Middle Ages some were reused for other purposes (sections of aqueducts became catacombs or temporary shelters, and cisterns became churches, etc.) and some of the ancient, excavated roads became trenches used for defense purposes; new roads were also excavated and were documented in the 1700s, and when Tuscia became part of the French Empire, others were excavated, and are still in use today [5].

Sanctuaries and hermitages are still used, even though there is a risk the rock walls may collapse, a phenomenon which inevitably occurs over the years. Some of them have become stables.

A sizable number of the furnaces excavated in the rock with adjacent workshops, in particular those for the production of terracotta, operated throughout the twentieth century: few of them continue to do so.

The grottoes used as henhouses and several wells are still operative.

The “Troscioni” deserve a special mention: they are retention basins of various sizes excavated in the woods in areas of clay soil (the clay makes the ground waterproof). The basins, which are usually not very deep, are used for collecting rainwater and provide a water reserve also during the summertime; in the past, they were used for free-roaming cattle breeding and today, are used by the local fauna; they are, consequently, of enormous documentary, environmental and landscape interest.

An exception has been made for the apiaries [6] and rupestrian columbaria because, even though they have not been used since the nineteenth century, they are evidence of the fundamental practices used for the provision of honey and fresh meat for the community and risk being forgotten; for this reason, their architecture needs to be preserved.

Furthermore, for the cataloguing and, in particular, the dating of the structures and their uses, it was necessary to address the problem of pre-existing structures.

In the study of population dynamics, in fact, the interaction between humans and the environment is conditioned by the pre-existence of structures of an anthropic nature.

Hydraulic infrastructures, like road networks, are an important legacy, because their continued use, decommissioning or eventual reuse, allow us to understand how the territory was occupied. Water availability and water supply are essential for the survival and development of a settlement. In particular, the reuse of these structures determines the anthropic landscape, favoring:

a) uninterrupted functional continuity that some tunnels seem to have had over the centuries;

b) full decommissioning followed by a change in use;

c) reuse connected to their functional exploitation and the development of new productive activities. [7]

Another interesting aspect of excavated structures is that, since they are integrated so well into the landscape, and almost completely camouflaged in the vegetation, they evoke a romantic beauty, a “way of feeling/sensing” the place.

After all, Romanticism emerged in the eighteenth century as a reaction to the Enlightenment and to Neoclassicism, in other words to the rationality and cult of classical beauty, which counterposes the spirituality, emotionality, fantasy, imagination, and above all the affirmation of specific characteristics [8], in our case of architecture.

No two hollowed out shapes are alike, but they evoke animal settlements such as termites' or ants' nests, badgers' or porcupines' dens or the birds' nests carved out of clay walls such as those of the European bee-eater, the sand martin or the kingfisher.

It is this integration into the rural landscape that we want to protect and preserve, and at least keep its memory alive.

A return to the subterranean, a reaction to Plato who, in his *Allegory of the Cave* urges the people to leave it: "But if they were to go outside the cave and see things in the light of day, they would realize that they had lived in a world of appearances" and to Nietzsche: "God is dead: but given the way of men, there may still be caves, for thousands of years in which his shadow will be shown" to see the architecture of subtraction as a rediscovery of the civilizations that inhabited it, and used and reused it, in symbiosis with the environment.

It is a cultural path that may seem twisted and uncertain, but its aim is to valorize the entire history of the territory, not only one historical period, even if it is believed to be the most important, as it is a valuable piece of evidence for civilization.

A ready-made in reverse. In archeology a common artifact of everyday use is elevated to the status of cultural heritage and work of art when, over time, it is evidence of civilization. It is therefore "used" in a situation that is different from the original one.

In this case, for example, an Etruscan tomb, having lost its original function of sepulcher, becomes a shelter, a stable, a warehouse, a garage, a dwelling (maybe reconsecrated with a simple cross engraved on the walls): thus, a work of art becomes a common banal object, with all due respect to Duchamp and his "Fountain".

One last (and in this case, final) way these environments were used was, unfortunately, as illegal dumping grounds. Indeed, one of the aims of this paper is to encourage people to respect these spaces which are extremely rich in history and culture and to give them back the dignity they deserve.

3. Origins of the architecture of subtraction

We are used to thinking about architecture as something built that emerges, that stands between the ground and the sky. After all the term "architecture", of Greek origin, derives from the terms *archè* meaning "challenge", "departure", "origin", "foundation" or "guide", and *técton*, which recalls several meanings, among which are "to invent", "to create", "to shape", "to build" (Giacomo Devoto, etymological dictionary).

It is Herodotus who brings the two terms together for the first time (ἀρχιτέκτων, Storie III, 60, 4), wanting to indicate the person whose responsibility it is to provide the rational rules to regulate construction.

Much more recently, in 2007, Renzo Piano defines architecture as: "The most ancient profession on Earth, the art of building, but also the art of representing things".

Yet, as observed earlier, there exists an architecture that does not build but excavates, does not add one piece to another, but removes the "superfluous".

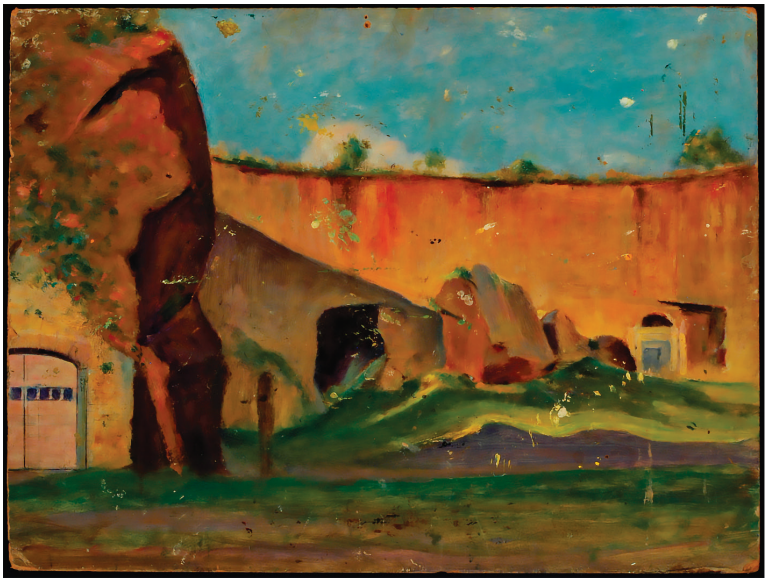

Figure 1. Pietro Canonica, Case nel tufo, Vetralla (inv. C. 339). Reproduced with the kind permission of the Museo Pietro Canonica, Rome.

It is a hidden architecture that could even be called camouflage, because it blends into the landscape, and is literally “inside” it. But that does not make it any less spectacular. It is an extremely ancient tradition that actually dates back to the stone age. It is cave civilization: which in some cases is anything but primitive, with extremely refined creations, like the majestic facades of the temples excavated in the rock with huge, decorated portals.

The catacombs are another example: cemeteries excavated in the tuff composed of subterranean passageways on different levels. Not places where people hid from persecution – as tradition says – but a brilliant solution to optimize the little land available: a kind of upside-down building [9]. Inside the catacombs several different kinds of architecture can be seen, from arcosolia to real small temples, everything hewn from the rock.

It is relatively recently that the attention of the scientific world has focused on the diffusion and articulation of this architecture, obtained by carving material out of the rock walls found in geological areas characterized by the sedimentation of materials that are easy to work with using simple tools.

In general, it is difficult to establish when rupestrian environments were excavated, due to the fact they are structures obtained through removing material and not accumulating it, a circumstance that prevents the formation of stratigraphic deposits. At times, when there is no indication of a relationship between the masonry structures or useful data that can be obtained from documentary sources or paintings in the cavities themselves, it is impossible: therefore a way to try to date these environments has to be found, which means defining the various typologies in order to classify the cavities with distinctive recurrent elements, a methodology that has been adopted for some years in the study of man-made cavities which has given important results. [10]

Then there are towns of which there are two versions: like the village of Camerano, in the Regional Park of Mount Conero, in Marche. Below the level of the street is another proper village inside the village, carved into the sandstone rock. The numerous underground tunnels running beneath the historical centre in a labyrinthine pattern, reveal the presence of architectural embellishments in almost every space, bas-reliefs and decorations with friezes, ornamental motifs and religious symbols. Their origin is still uncertain due to the lack of specific studies and historical documentation. Oral tradition, always to be taken into account, especially when sources are scarce, informs us that: “There is more of Camerano below ground than above”.

One fundamental function of an underground city is undoubtedly, protection: the underground tunnels allowed the population to hide in case of sieges or threats. And not only in ancient times; in 1944, during the wartime bombing, the whole hypogeal system was used as a shelter by the population, who spent twenty days inside the caves.

Other examples of underground cities, a mirrored reflection of the city on the surface, can be found throughout Tuscia, from Viterbo to Orte and Vetralla (although their history and function have been forgotten) to nearby Orvieto and Narni.

4. Characteristics of the architecture of subtraction

There are multiple factors that motivated the necessity to carve dwellings from rocks and in general, depend on geographical location, climatic and environmental variability and available resources. [11]

Apart from the origins that led to the creation and utilization of these underground cavities as shelters in adverse environmental contexts, what is more interesting to note is the variant that arises as a consequence of the geological structure of the terrain with its favourable conditions. These particular conditions derived from the fact that the soft rock was easy to work with, so it is easy to understand how the architecture of subtraction provided a “building” solution that was immediate, logical and cheap.

Excavating in such situations is more economical than building. Obviously, strictly from the point of view of the microclimate, a hollowed-out environment provides satisfactory conditions, because the temperature inside is stabilized, thus attenuating any daily or seasonal variations. This characteristic makes this type of environment ideal for use as cellars and storage spaces.

Frequently however, the presence of only one opening onto the outside (as well as providing access to the environment) makes it a habitat that is dark and poorly ventilated, and so is unhealthy and uninviting as a human dwelling.

Excavating is the most accessible technique when resources and technologies are limited or underdeveloped. The rock is self-supporting and requires no additional equipment, other than a few simple tools for excavating and human strength.

Despite the simplicity of the architectural techniques, underground architecture is extremely flexible due to the possibility of modelling the space according to one’s needs and personalizing it by enlarging existing spaces or adding recesses or rooms when needed. Another factor that may determine choosing structures excavated in the ground rather than constructing on the surface is that it provides the possibility of fully blending into the landscape and being visible only at close quarters. An essential characteristic not only for shelters but also for hermitages.

It is also probable that people have gradually learned and acquired some forms of behavior by observing the animal world and the way in which they have been able to adapt to climatic environmental contexts.

Below is a brief classification of the different varieties of architecture of subtraction and an indication of some of the criteria that were applied:

- Hypogeal structures are structures created by starting from the natural ground level and excavating downwards, in depth.
- Rupestrian structures are structures where all the levels excavated in the rocks are above natural ground level.
- Carved structures are those where subtraction involves not only the interior but also the exterior and models the shape of the traditional elevated built architecture (reproducing the structural models, the spatial organization, the friezes, the decorations). [11]
- Mixed structures are structures where the subterranean or rupestrian elements coexist with artificial parts built on the surface by extending the cavities outwards towards the exterior. [12]

How is it possible that in some areas this type of architecture developed and was used more extensively than in others? One important reason is evidently the composition of the subsoil and the rocks. The rocks must possess particular characteristics of resistance and workability, which are typical characteristics of magmatic rocks. In Tuscia, the two most common types are tuff and peperino.

The tuff (in latin: *Tofus* or *Tophus*), of different colours, such as beige, yellow, grey, or dark brown, abundant in the volcanic districts of Latium, is a fairly resistant rock but light and workable.

The peperino or peperine, grey in color and speckled with black-coloured particles similar to pepper grains (hence the name), is typical of the areas of Vitorchiano and Soriano in Cimino, even though it is found in various areas of central Italy. The peperino is also known as *lapis ciminus*, since it comes from the solidified lava of the Cimino volcano in Tuscia, which is today inactive and called “Mount Cimino”. Peperino stone is very resistant despite its being easily workable.

The architecture of subtraction is particularly interesting because, it has survived to the present day almost uninterruptedly with the recovery of ancient structures converted into garages and cellars, and the excavation of new structures with the same function, particularly in the countryside. [13]

5. Excavation techniques

As pointed out, excavation techniques have remained the same over the centuries, and are evident in the traces left behind on the rocks by the tools utilized over several centuries. Therefore, to understand how these ancient structures were made, a full-scale investigation into “present-day” ones was set up by interviewing some of the local people who are still able to excavate these cavities in the rock and were able to describe the phases of the procedure. [14] The study provides a wealth of knowledge on current excavation methods and the equipment that is used, facts that were also confirmed in the interviews I had with people who had either done the excavating or had been present when the grottos or the cellars were being excavated.

“After choosing a rocky wall that suits your needs as regards size and position (usually oriented towards the south), the first thing you do is to make a rough outline of the entrance to the space with the tip of your pick, based on the function of the space and the needs of the occupants.

You then gradually proceed with your pick to break the rock in the lower half of the drawing, inside the outline you have made for the opening, to reach a depth of approximately 50 cm, at the same time the lines of the opening are made deeper with a pick, until they form a groove, called in Italian *cavarella* (which recalls the *vie cave* mentioned earlier); this results in the upper half jutting forward and is separated from the rock face by about 10-15 cm. Later on, this part is detached from the rock by inserting wedges and shims into the groove, usually one wedge with another two, one on either side. In the past, the wedges were made of wood, today they are made of steel. In this first phase, the mass of rock that has been detached from the top part using the wedges must always be greater than the lower half cut away with the pick: in this way the stoneworker can stand on the step that has been created without using any scaffolding". [14]

For reasons of economy, the use of metal or wood scaffolding is almost always avoided: the use of wood or the renting of scaffolding entails an expense that, even though minimal, is at odds with the nature of the rock excavation itself, which comes from the need to create a space which provides cover and shelter at no cost whatsoever.

The process of excavating continues on the inside by removing the upper mass with the help of wedges. The last part to be removed is the bottom part that acts as a step.

The stoneworker then proceeds to fix the surfaces of the interior with the tip of a pick: in fact the wedges are used to remove a sizable mass of rock from the wall, and thus make the job easier; however, their use does not produce smooth surfaces. As regards the ceiling and the upper part of the walls, if the size of the space is such that it exceeds the height of a person, the finishing is done during the removal of the rock, in other words while the rock step is still in place as it allows the ceiling to be reached.

The floor, instead, can be fixed after the excavation. The practice of lowering the level of the floor using only a pick and creating one or two entrance steps is not very widespread, due to how these spaces are used (as garages for cars in residential areas, for agricultural machinery in the countryside and, until a few decades ago, as a shelter for animals) and the need to avoid flooding in case of rain.

Inside the excavated spaces essential recesses were likewise created in the rock: feeding troughs in the grottos which were used as stables and steps, or even stairs to connect the various spaces, other than the one that gave onto the road (usually cellars).

Each local dialect has developed its own terminology for describing the environments excavated in the rock, the construction technique, and the tools that were used. In the province of Viterbo the typically characteristic terms included in this study and personally encountered in the interviews, have all been handed down.

- *Affaccio*: the entrance to the excavated space exclusively at the moment it is "drawn" on the rock wall.
- *Porta*: the entrance after the environment has been excavated.
- *Cavarella*: the v-shaped groove made with the pick into which the wedges are inserted.
- *Zeppe*: wedges made of wood or metal.
- *Cielo*: the ceiling of the environment.
- *Cantoni*: the upper corners of the entrance (*affaccio*) and of the environment.
- *Cavare*: excavate a hollow space in the rock.
- *Polsetto*: way in which the pick is held (*cavare a polsetto*).
- *Da capo*: from the top.
- *Da piedi*: from the bottom.

The essential tools include:

- *A double-pointed pick (piccone a due punte), also called a stoneworker's pick (piccone da cavatore), it is typically used for cutting rock; this tool is also used in the first phase to define the entrance, and successively to do the final finishing. Very similar to the common pickaxe, it is smaller in size and has the peculiar characteristic of not having the usual flat blade but two pointed ends, due to the elementary need of having to deal with the problem of a broken tip in the quickest and most practical way; the handle is also smaller in size than a common pick so it can be used in low narrow spaces.*
- *Sledgehammer (mazza), a big hammer of about 2 kg. The handle varies in size and length; a short handle is used to break the rock on the inside and in the upper part of the chamber, due to the limited space that would hinder any movement if an unwieldy tool were used; a long handle is used to break the rock in the lower part of the excavated chamber or outside it, since this type of implement increases the force that is exerted.*
- *Wedges and shims (cunei e zeppe) are pieces of hard wood or, today, also made of metal, with a V-shaped longitudinal section which, when inserted into crevices in the rock (cavarelle), allow huge blocks of stone to become detached with the minimum of effort. In particular, the wood wedge is hammered into the crevices and then wetted, so it dilates, making it easy to detach the pieces of stone. On the other hand, metal wedges are used with thin strips, also made of metal, that are wider than the wedge itself and positioned between the wedge and the rock thus preventing the wedge from breaking the inner sides of the crevice and evenly distributing the applied force along the rock face. The wedges are then sledgehammered until the piece becomes detached.*

It would be extremely interesting to study the traces left by these tools to compare them with traces found in other excavated environments.

The traces left on the walls by the pick are clearly visible and can be found on the walls, the floor and the ceiling. These marks are grooves ranging from 10-20 cm in length, and are 1-4 cm deep, and are slightly curvilinear on the flat surfaces. In the upper corners inside the chamber, both towards the entrance and towards the back wall, they are instead strongly curvilinear: since the upper corners are where the walls meet the ceiling and the floor, they need a more accurate finishing with higher definition. These grooves show that the pick was held sideways at an angle of 45° when used. Instead, when the pick is used frontally, to finish the interior of recesses or troughs, or the inferior part of the walls, it leaves shorter grooves that are less deep, and end with a little circular mark.

The traces left by the wedges are usually visible only outside the excavated environment, since the interior finishing, carried out with the pick, has erased them. They are small, rectangular, square or circular shaped holes, that are always irregular and have fracture marks around them.

In conclusion, the traces left by the tools confirm how the simple cheap excavation technique that was used, needed very few essential tools and has remained almost unchanged over the centuries [14].

6. The types of architecture of subtraction

The following is a list of the different types of architecture of subtraction with respective images.

Types

1. Apiaries (Figure 2)
2. Canals (Figure 3) and tunnels
3. Cellars (Figure 4)
4. Hypogeal houses (Figure 5-6)
5. Caves and mines (Figure 7)
6. Cisterns, semi-subterranean or underground structures used to store snow (*conserve della neve*) and ice-houses (Figure 8)
7. Dovecotes (Figure 9)
8. Furnaces (Figure 10)
9. Hen houses (Figure 11)
10. Artisan workshops
11. Storage spaces and agricultural shelters (Figure 12)
12. Pigsties (Figure 13)
13. Wells
14. Refuges (Figure 14)
15. Sanctuaries and hermitages (Figure 15)
16. Stables (Figure 16)
17. Reused tombs
18. Retention basins (*Troscioni*) (Figure 17)
19. Basins (Figure 18-19)
20. Vie Cave (Figure 20) and ditches.

Figure 2. Apiary, Soriano (VT). Photo Alessandra Castagnolo.

Figure 3.
Canal, Strada Vetrallese, km.3.
Vetralla (VT).
Photo Andrea Natali.

Figure 4.
Cellar,
Vetralla (VT).
Photo Gabriella Decini.

Figure 5.
Hypogeal house,
Vallerano (VT).
Photo Gabriella Decini.

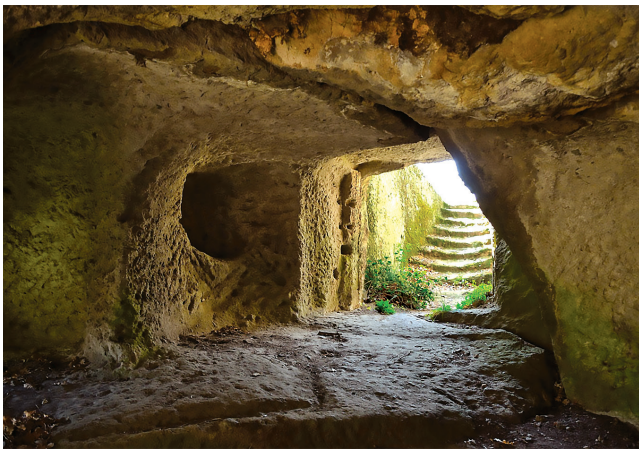

Figure. 6.
Hypogeal house,
Corviano, Soriano (VT).
Photo Fabrizio Allegrini.

Figure 7.
Holy area of Fosso Bicione,
Monterano, Rome.
Used as a mine until 1900.
Photo Gabriella Decini.

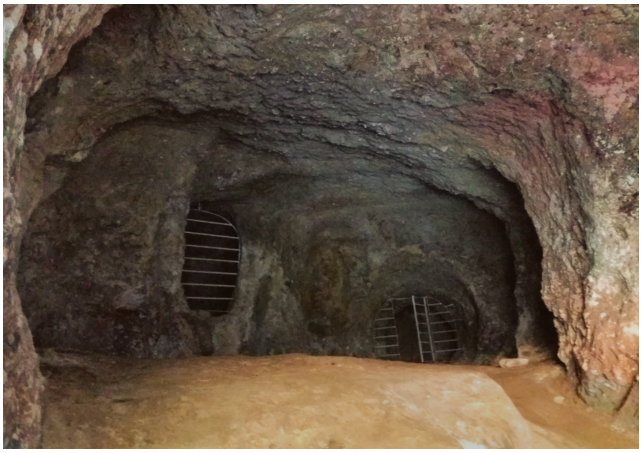

Figure 8.
Ice-house in the wood of Sasseto,
Torre Alfina (VT).
Photo Elena Ronca.

Figure 9.
Dovecote, Blera (VT).
Photo Andrea Natali.

Figure 10.
Furnace and workshop for the production of terracotta, Via dei Pilari, Vetralla (VT).
Photo Andrea Natali.

Figure 11.
Henhouse, Vetralla (VT).
Photo Andrea Natali.

Figure 12.
Agricultural shelter,
Vetralla (VT).
Photo Gabriella Decini.

Figure 13.
Pigsty,
Castel Di Salce (VT).
Photo Gabriella Decini.

Figure 14.
Air-raid shelter,
Palazzo Di Vico, Viterbo.
Photo Gabriella Decini.

Figure 15.
Hermitage of San Girolamo, woods of Monte Fogliano, Vetralla (VT).
Photo Andrea Natali.

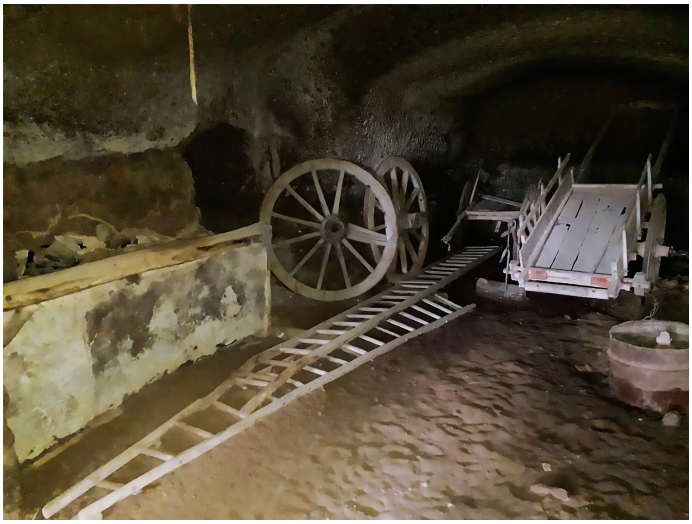

Figure 16.
Stable,
Vetralla (VT).
Photo Andrea Natali.

Figure 17.
Troscione del Confine, Bosco di Monte Fogliano, Vetralla (VT).
Foto Andrea Natali.

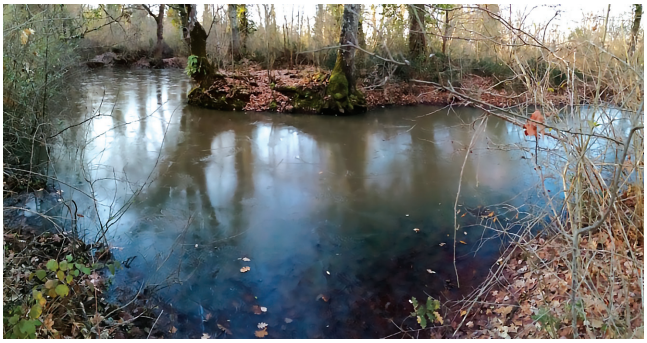

Figure 18.
Basin for agricultural work. Bomarzo (VT). Photo Gabriella Decini.

Figure 19.
Thermal basin dell'Asinello, Castel D'Asso, Viterbo. Photo Andrea Natali.

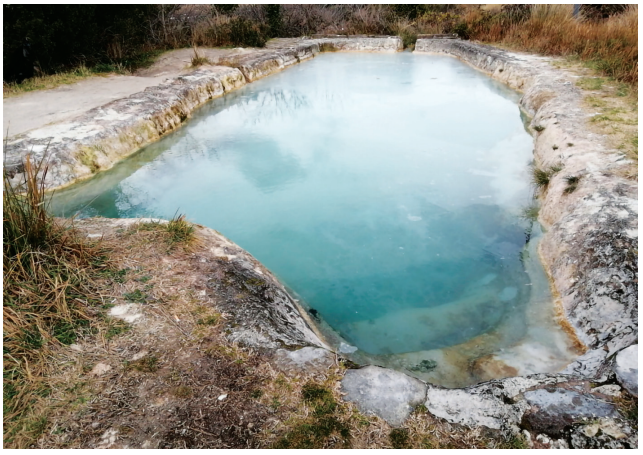

Figure 20.
Via Cava, Pitigliano (GR). Photo Aldo Paolelli.

7. Project for the conservation and valorization of the architecture of subtraction inserted in the rural landscape of Central Italy

Once attention has been called to this type of architecture and the economic importance it had for rural society has been highlighted, as well as the cultural relevance it still has today, a project should be drafted for the conservation and valorization of the architecture of subtraction that exists in the rural landscape of Central Italy, with the involvement of the local communities and administrations, an essential aspect if the project is to be successful.

A location in Vetralla (VT), on a road called *strada Volparo*, along the pilgrimage route of the via Francigena, has been identified as a suitable site for valorization. The Via Francigena is the route that starts from Canterbury in South England and travels through France and Switzerland to Rome. It was once the destination of pilgrims and crusaders and is today an important religious and cultural itinerary in Europe, covered every year by 35000 people (2018 data).

Just outside the twelfth and fourteenth century city walls of Vetralla [15] there is an excavated road where there are numerous excavated grottos, in a state of abandon and degradation, which are used for illegal dumping.

The project, presented to the Municipality of Vetralla (registered under protocol n. 0024525 of 23/08/2021), provides for the cleaning and reclamation of the sites and inside the spaces, the subsequent installation of an open-air museum displaying its rural cultural history with correctly illuminated and securely installed exhibits, that recall age-old crafts, such as breeding, transportation using carts drawn by animals, and artisans and farmers with tools relating to the rural life of the nineteenth and twentieth centuries, together with information systems and parking areas for tourists that pass along the road.

The open-air museum will enable visitors to learn about this particular architectural style, help to restore a road in a state of abandonment, and improve the image of the territory, in addition to raising awareness about its history, culture, traditions and local products. [16-21]

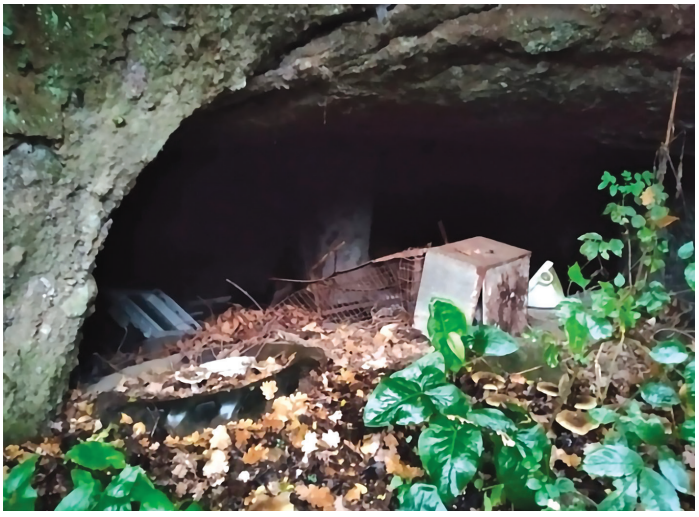

Figure 21. Grotto used as a dumping site, Strada Volparo on Via Francigena, Vetralla (VT). Photo Andrea Natali.

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Biographical notes

Andrea Natali carries out research activity, didactics and consulting in the field of Cultural Heritage Conservation.

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He has carried out didactic work and continues to do so in University, Academy and Master courses in sectors related to the field of conservation, restoration, art diagnostics, artwork authentication, management and valorization of cultural and landscape heritage, and planning and promotion of artistic and cultural events. He is the owner of the company Andrea Natali "Cultural Heritage Conservation". He is a mediator/moderator. He is the Editorial Secretary of the Journal "Conservation Science in Cultural Heritage" and a member of the Scientific Committee and works in the Scientific Coordination of the journal "Scienze e Ricerche". He has been an Expert in the Chamber of Arbitration for public contracts at the National Authority for Anti-corruption. He is the author and coauthor of more than 60 publications in the sector of conservation and valorization of cultural heritage which include scientific monographs and treatises used as university course textbooks. He has also been a speaker in more than 60 conventions and conferences.

Maria Letizia De Luca is an architect. She has been a member of the Order of Architects and Landscape Architects of Rome and the Province since 1995 (No.11038). She has collaborated with major architectural firms and has carried out general design activities, the development of executive design and has been responsible for the graphic elaboration of projects, and the development of architectural and constructive details for private commissions, including the prestigious Bulgari boutiques in Italy, Europe and America. Since 1995, she has worked in her professional studio in Castelnuovo di Porto (Rome, Italy), with a particular focus on building design, interior architecture and renovation, in historic centers. She performs technical appraisals for individuals and for the court of Tivoli as a court-appointed technical consultant.

Summary

The architecture of subtraction in rural landscapes is a type of architecture which was of great economic and cultural value for rural society until the twentieth century. Knowledge, cataloguing, conservation and valorization of architecture have therefore all become essential elements in protecting the culture and the rural landscape of Central Italy. The article presents and catalogues this type of architecture and proposes a project that aims at the recovery and valorization of several abandoned and degraded excavated sites, to set up an open-air museum that focuses on the rural and artisan life of the nineteenth and twentieth century.

Riassunto

L'architettura della sottrazione inserita nel paesaggio rurale è una tipologia di architettura che ha avuto, per la società rurale, una importante valenza economica e culturale fino al XX secolo. La conoscenza, la catalogazione, la conservazione e la valorizzazione dell'architettura della sottrazione diventano, quindi, fondamentali per preservare la cultura e il paesaggio rurale del centro Italia. L'articolo presenta e cataloga tale tipologia di architettura e propone un progetto, finalizzato al recupero e alla valorizzazione di alcuni siti scavati abbandonati e degradati, per la realizzazione di un Museo diffuso della civiltà contadina e artigiana dei secoli XIX e XX.