

Excavating the Past: Incisions, Labyrinths and Introspections as Design Actions for the Underground Archaeological Spaces

The condition of atopy that characterizes the underground strata of the contemporary city is an interesting starting point for exploring the potential of architecture to dig into the past to reappropriate the archaeological spaces by weaving new relationships vertically and horizontally. The excavation is interpreted as a cognitive device for investigating primitive spaces, but also as a design tool for reconnecting them back to the city above, emphasizing the continuity between layers. These issues are investigated with a theoretical-experimental approach, making use of three areas of the city of Naples, the hill of Poggioreale, the Materdei-Sanità districts, and Mount Echia, as demonstrative cases to derive a design methodology for those places where the presence of an archaeological underground, disconnected from the above, constitutes the potential trigger point for an urban overturning. Excavation is interpreted in the three cases as an incision, that is cutting into the ground to give new centrality to the excavated space, as an intercommunicable labyrinth to experiment with hybrid archaeological plots, and as an archaeological introspection, to emphasize the intracorporeal travel into the earth that opens new archaeological narratives, reanimating the dialogue between the two worlds of above and below, which have never been divided.

Keywords: *excavating the past, underground archaeological spaces, stratified city, urban and architectural design, Naples*

Introduction

Between Soil and Subsoil: Urban Overturnings and New Continuities between Subterranean Archaeological Strata

Starting from the condition of atopy and fragmentation that characterizes the archaeological spaces in the urban underground, the contribution intends to explore possible design solutions, to excavate within the "current terrain", to rediscover new plots between levels and to determine new relational systems that extend both along the vertical axis of the urban stratigraphic section and along the horizontal axis, involving significant parts of the city.

The research, developed under the Ph.D. in Architectural and Urban Design at the *Federico II* University in Naples, explores these issues both theoretically and experimentally, focusing on the study of three specific cases in the metropolitan city of Naples. The hill of Poggioreale, the Materdei-Sanità districts, and Mount Echia have been identified as valid demonstrators of the thesis, namely that the archaeological undergrounded space, due to its remarkable connective potential and its historical-archaeological value, can take on a strategic role in the contemporary dynamics of the above city, proposing innovative interpretations capable of triggering urban overturns and

new configurations of continuity between the layers that follow one another within the city's diachronic palimpsest.

The coexistence of the two cities determines the intersection of numerous opposing meanings, which meet at the point of intersection between the above and the below: real and imaginary, light and darkness, outside and inside, conscious and unconscious, visible and invisible, memory and oblivion, presence and absence, "on the one hand is connected with the supreme danger; on the other hand, burial ensures survival more than anything else" (Hollein, Steiner, 1999, p.5). The city, as a unique system of strata, is the space of coexistence of numerous antinomian pairs, through which to read the evolving relationship that connects the stratigraphic interfaces of the urban palimpsest.

In this perspective, the surface of the earth is understood as a *space of tension*, of opposition between what is hidden below and what is above, a meeting plane between dual meanings, and the excavation as a device for breaking through the surface, which allows the entrance to the underground world, to unveil the most ancient part of the city.

And it is precisely the archaeological ruin, to quote Salvatore Settis, that concretely embodies the sense of the dual, constituting both a presence and an absence (Settis, 2004), that is, the intersection between what is visible and what is invisible, between the present and the past city, the meeting of two distant but complementary worlds.

Starting again from the deepest layers, thus not only enhances the value of archaeology by reinforcing the memory of the past that must not fall into oblivion but also allows us to inhabit again the ancient hypogeal space, reinforcing the sense of duality that leads us to think of the underground as a logical continuation of the above.

Paradoxically, the buried city expresses the truth of the existence, the origin of the city above, which is why man cannot help, quoting Freud, digging into the repressed Earth, to unveil what "should have remained secret and hidden, and instead resurfaces"¹ (Freud, 1978, p.562).

"In his excavation, the archaeologist finds tools whose destination he does not know, pottery shards that do not fit together, deposits from other eras than the one he expected to find there: his task is to describe piece by piece even that which he cannot finalize into history or use, to reconstruct into a continuity or a whole. It will come to this later, perhaps, or one will realize that not an external motivation for those objects, but the mere fact that such objects find themselves in that place already says it all" (Calvino, 2002).

Italo Calvino emphasizes the need to move away from the study of archaeological fragments considered in their individuality, but rather he proposes to start again from the context, from the archaeological space understood in its complexity, to be reinterpreted both through the understanding of the individual fragments found in it and through the analysis of the actions and uses.

The importance of digging into the past is clear to fully understand the origins of a place, reordering the archaeological fragments that intermittently

1 surface within the urban scene, generating new narratives that make use of the
2 archaeological ruins until then concealed within the space of the underground,
3 and therefore invisible.

4 The design experimentation for the three areas of the city of Naples makes
5 it possible to derive a methodology and strategic tools useful for triggering
6 urban mutations starting from the underground archaeological strata through
7 various declinations of the excavation, context specific.

8 "The archaeology of excavation and the principles on which it is based can
9 be taken as references for architectural design [...] There is a clear inner
10 similarity between the study with which the excavator attempts to understand
11 the units and differences, revealing the secrets of their formation and the
12 procedures that the architect develops in order not to inhibit his need to
13 investigate among the fragments of history" (Torricelli, 2002, p.218).

14 In this sense, the archaeological excavation project is the trigger of an
15 architectural design, which does not intend excavation as a technical-scientific
16 procedure, but as a structuring action, capable of extracting information
17 (Schnapp, 1995) from contexts rather than from single works and organizing
18 them into a historical narrative (Carandini, 1986), proposing interpretative
19 solutions that move the mechanism of knowledge forward by proposing
20 unedited narratives.

21 Narratives made up of "chance encounters" between temporal
22 concatenations: through excavation actions, it will be possible to define
23 unpublished stories, in which what advances the narration is in itself "more
24 significant than what concludes it, or intermittent, understood as a construction
25 by fragments that nevertheless retain their semantic autonomy" (Ricci, 2006,
26 p.151).

27 The space of encounter/clash between the contemporary city above and
28 the ancient city below is the space of the project (see Figure 1), which, in a
29 unified vision, must hold together the layers of the diachronic urban system.

1 **Figure 1.** *Between the above and the below*



2
3 Source: Franco Purini (1983) Ink on cardboard, *Untitled*.
4 Drawing reworked by the author

5 6 7 **Literature Review**

8 **About excavating into the past**

9
10 Walter Benjamin in *Scavare e ricordare* suggested that those who seek to
11 approach their buried past should pay attention to the excavation: "It is
12 certainly useful, in the excavation, to proceed according to a plan. We must
13 equip ourselves with a squinting gaze, capable of holding together the present
14 ground and the objects found. Each layer generates a new design" (Benjamin,
15 2003, p.112).

16 The topic of archaeological excavation highlights that the layer of the city,
17 which is protected by the *current ground*, risks remaining in a condition of
18 invisibility.

19 From this perspective, the Earth's surface is understood as the contact
20 between present, past, and future, and the excavation as a device for breaking

1 through the superficial layer, leading to the entrance to the underground world,
2 and consequently the gradual unveiling of the invisible ancient heritage.

3 Returning to investigate the ancient hypogean layer and the heritage
4 concealed within, it is fundamental for a thorough understanding of how the
5 man in the past appropriated the space of the subsoil in order to inhabit it on
6 daily uses: taking refuge beneath the Earth's surface, digging deep into the
7 primordial material, gives a sense of protection and security, which reassured
8 man against the dangers of the outside world.

9 In the past, therefore, man inhabited an underground space created by
10 excavating: the act of construction, resulting from the extraction of the raw
11 material, seems to fix itself in the soil, establishing a lasting relationship over
12 time between man and the environment, which allows us to look at the past but
13 which can also guide contemporary design.

14 Excavating the past, in metaphorical terms, allows us to carry out a careful
15 archaeological exploration of the underground, to get to know the invisible
16 traces, continuing an action that has been interrupted and that only the design
17 project can continue by favoring the progress of the archaeological research
18 and the interpretation of ancient spaces through a contemporary gaze.

19 "Matter has the same root as mother, *mater*, therefore rock is the mother of
20 underground architecture. How can one hope to find something stronger than
21 this in architecture and in the genesis of the city? It is something extraordinary,
22 something powerful. This is the ultimate sense that drives me to investigate the
23 underground as the generator of the topsoil"².

24 The architecture of the subsoil is an architecture that arises from negative
25 work, for the removal of matter from a primordial volume, and that through
26 subtraction generates the form of space.

27 This concept has very ancient origins: these are spaces built *by force of*
28 *removal*, taking away what is superfluous, to make a form appear, that was
29 previously hidden in matter, *in power*. What is generated is an internal, closed,
30 introverted space, an *inhabitable invaded* (De Fusco, 2004), delimited by a
31 condition of reciprocal exchange with the earth, which constitutes its physical
32 limit, but which at the same time is the matrix of the spatial void.

33 A careful exploration of the ancient actions within the space of the
34 underground is useful for understanding the genesis, symbolic values, and the
35 uses, and for outlining design trajectories capable of acting in the
36 archaeological space.

37 For this reason, the archaeology of the excavation and the principles on
38 which it is based can be taken as references for the contemporary architectural
39 project "revealing the secrets of their formation and the procedures that the
40 architect develops" (Torricelli, 2002, p.218).

41 In these cases, the design has a key role, making it possible for the
42 contemporary city to coexist with what lives in its subsoil, operating a true
43 reorganization from within and investing the pre-existence with a fundamental
44 role in the composition of the urban context and its layers.

²See: Chipperfield D, (2019). Archiportale: https://www.archiportale.com/news/2019/03/professione/vincenzo-latina-dall-ipogeo-alla-volta-celeste_69113_33.html.

1 "Never would an ancient man have allowed the city to split into a top and
 2 a bottom: instead, he would have proposed the logical-creative idea, therefore
 3 useful, of reassembling the top and the bottom in a multi-faceted unity [...] in a
 4 project that no longer has a top and a bottom, where the ground level stops to
 5 be a dependency to become a complement. The city, weighed down by the
 6 historical burden [...] *splits into two*: an above and a below. Above, urbanistic
 7 parallels where streets, having lost their narrative, no longer communicate;
 8 below, channels for people and things" (Giancotti, 2015, p.56).

9 As Giancotti suggests, taking up Sacripanti's words, the re-appropriation
 10 of the underground for a return to the ancient idea of the city as a *continuum* of
 11 layers, implies the coexistence of two cities, currently split into two and
 12 carrying numerous opposite meanings: the intersection of the two worlds takes
 13 place precisely on the contact surface between the above and the below, a
 14 space of coexistence of antinomian pairs (Grimaldi, 2013).

15 The semantic duality that distinguishes the two worlds is also strongly
 16 accentuated by the value of use: if in the past the space of the underground
 17 accommodated multiple uses of everyday life, configuring itself as a space
 18 with recognizable architectural characteristics, over the years man has begun to
 19 move away from the underground space to live mainly in the city above,
 20 contributing to the development of a sense of terror towards an increasingly
 21 foreign and unknown world.

22 There were many architectures, both public and private, that occupied the
 23 underground in the past, creating increasingly complex spaces. Undoubtedly,
 24 the most important underground public architectures were the primitive
 25 residential spaces, such as caverns, underground shelters, funerary or religious
 26 spaces, as tombs, catacombs, nymphaea and mitraneum, necropolis and crypts,
 27 common spaces, as baths, amphitheatres, cryptoporticus, water infrastructures,
 28 as cisterns, aqueducts, cloacae, or even underground tunnels, and lastly,
 29 military spaces, with trenches and fortified lines that provided protection.

30 Not only public architectures were equipped with hypogeal spaces: private
 31 ones also provided for the development of several rooms at the underground
 32 level. An example of this is the ancient city of Pompeii: the data concerning the
 33 *subterranean domus* seems to suggest that Pompeiians considered excavation
 34 solutions from above to be suitable for creating functional rooms, probably due
 35 to the resulting difficulties with ventilation and lighting, which made it more
 36 difficult to use the space. Expanding one's dwelling by digging underground
 37 was not, however, within everyone's reach, and having such rooms was
 38 therefore a sign of economic and social relevance; it was precisely the high
 39 representative value of underground rooms that led to an increase in the
 40 amount of underground space needed to create more *artificial subsoil*. The
 41 basement level resulted as a "duplication" of the ground floor; the result was a
 42 "house beneath the house", a demonstration of the fact that "roman civilization
 43 had never renounced an underground life, parallel and convergent with the
 44 subaerial one" (Basso, Ghedini, 2003, pp.118-120).

45 This information, although only indicative of the importance of hypogeal
 46 spaces for past eras, shows how each layer, of different thickness and

consistency, collects the material evidence of different times and societies, which must be investigated to fully understand the origins, organizing the archaeological fragments that can only emerge again from an excavation operation within the urban scene.

Over the years we have stopped digging into the Earth to inhabit it as the ancients did, resulting in a buried and unknown city that lies beneath the contemporary city, and that awaits to be reinterpreted and reused for the grafting of contemporary uses, assuming ever different roles within a completely modified urban space, in transition.

"History and project, in short, are made of the same conceptual essence: they take shape and change over time because of the interactive bond that binds everything in the world, recording, both in the final balance (history) and in the preventive one (project), the complex matter of that relationship and, that is, of how the fundamental function of man's adaptation to the changing environment is enveloped and takes place, in our need/intentionality to live it, inhabiting it"³.

In this framework, excavating the past takes on a dual metaphorical and physical meaning, in the will to investigate the underground space to recompose the emerging fragments in a logical order that allows the story to be told, but also to reinterpret the spatiality and ancient uses and to propose a continuation through the grafting of contemporary practices.

"Excavation was intended as a tool for recovering buried objects. The form of the excavation changed when, in the intention of the excavators, the objects were joined by the ancient structures, the remains of buildings, with their architectural decorations" (Manacorda, Zanini, 1988, pp. 7-9).

As Manacorda suggests, over time, it is not only the form that changes, but also the practice of excavation: the focus is no longer on the objects to be extracted from the earth, but rather on analyzing and questioning the ground, from which one tries to extrapolate information about the stratification and traces left by man over time. The shape of the excavation, i.e., how the ground is cut vertically, leaves significant marks.

"Many excavations, following older interventions, have revealed the way of investigation of predecessors [...] The excavation is always initially emptying the fills from previous interventions by archaeologists or fossors. The vertical cuts themselves must be considered as true stratigraphic units" (Carandini, 1991, p.49).

This implies that new excavation actions and vertical cuts would still result in the overlapping of new stratigraphic units, the most recent ones of an archaeological site.

Identifying cuts due to old investigations, soil erosions, backfill excavations, and sedimentations is an effective way to fully understand the history of the subsurface and its diachronic transformations, in a process of changing collaboration that hollowed-out architecture has woven with the Earth.

³See Manieri Elia M, (2014). Attualità dell'archeologia urbana, [http:// www.treccani.it/enciclopedia/attualita-dell-archeologia-urbana_\(XXI_Secolo\)/](http://www.treccani.it/enciclopedia/attualita-dell-archeologia-urbana_(XXI_Secolo)/) [consulted in May 2023].

1 It is necessary to explore strategies for the appropriation of the
2 archaeological space in the underground using a squinting gaze capable of
3 holding together the "present ground", the ancient fragments, and the excavated
4 form of the void that contained them.

5 The excavation, understood as the extraction of matter, gives rise,
6 topographically and architecturally, to a complex organism: new architectural
7 forms are generated, spaces that are not much explored yet, capable of grafting
8 new and potential relationships between inside and outside, between the above
9 and below the city.

10 11 **Method and research tools**

12 **Experiments for underground archaeological spaces as a laboratory of** 13 **imagination**

14
15
16 Both because of the need to safeguard the historical, artistic, and aesthetic
17 values of the underground heritage, and to reintroduce it into a more articulated
18 network of archaeological public spaces, it appears important to make use of a
19 multidisciplinary and multi-scalar methodology, which allows the potential of
20 the underground to be investigated in a global vision that characterizes the
21 contemporary city.

22 Excavation in the past is a dual tool of investigation, as it explores the
23 potential of the archaeological subsurface both to increase historical knowledge
24 and to foster a renewed continuity between the layers of the urban palimpsest.

25 On the one hand, the archaeological excavation is understood as a research
26 practice, a process of reconstruction that renews the close collaboration with
27 the Earth, to break down the individual layers formed by erosions and
28 sedimentations, which have followed one another over the years, to investigate
29 the primitive spaces that are sometimes still unknown, both in terms of
30 architectural form, and in the uses and ways of inhabiting them; on the other
31 hand, the excavation is also understood as a design practice, capable of
32 operating significant overturn of the public space, favoring the unveiling of
33 ancient layers concealed beneath the contemporary city, and defining new
34 spatial relationships between the levels of the urban palimpsest.

35 "Archaeological excavation is a practice of historical research; it produces
36 knowledge through a process of disassembly of the stratification" (Manacorda,
37 Zanini, 1988, p.4).

38 Using a scientific approach, in which theory and practice are constantly
39 intertwined through architectural design, the aim is to trace possible
40 configurations of the hypogeum space and its relationship with the city above,
41 understanding how the condition of transition, of passage between below and
42 above, can become structuring in the design process.

43 Through the intersection between hypogeum space as a real physical place
44 and the empathic, perceptive, and sensitive condition generated in man, it is
45 intended to identify a series of modalities and design actions, also deduced
46 through project references, that allow us to open the field to design exploration.

1 While the research makes use of the design references, to explore strategic
 2 intervention possibilities to overcome the condition of atopy of the subsoil, the
 3 field of investigation is limited in geographical terms, through the choice of
 4 specific areas of Naples, which allow to immerse in a real space, and,
 5 therefore, to verify, what has been studied in a theoretical key.

6 The research makes use of bibliographical sources, the study of surveys
 7 and projects relating to the cavities of the Neapolitan underground,
 8 participation in conferences, but also the study of places, through interactive
 9 knowledge tools such as interviews and field trips, which allow for a thorough
 10 understanding of the project areas and their context, not only as a physical
 11 space but also as a space with a cultural, social, anthropological, and political
 12 dimension.

13 Aldo Loris Rossi states that "among the cities whose radiography is most
 14 extraordinary [...] emerge Naples" (Liccardo, 2019, p.19).

15 The design experimentation carried out on Naples is a valid demonstrator
 16 of the research thesis and a useful support to derive a methodology and
 17 investigation tools to experiment projects starting from hypogeal
 18 archaeological spatiality. The project is not a mere exercise, but research that
 19 confronts reality by ratifying procedures, from which it is possible to result
 20 from a method for similar contexts. In addition to this, the objective of the
 21 comparison with real case studies is to seek concrete and possible answers,
 22 useful above all to stimulate the architectural and urban planning of the city in
 23 the future time, tracing new and continuous relationships between the layers.

24 The excavation of the past and the disassembly of the layers that make up
 25 the underground take place through the construction of interpretative maps, in
 26 which the design of the archaeological cavities is superimposed on that of the
 27 settlements of the contemporary city⁴.

28 In this way, the choice of the three Neapolitan areas is a logical
 29 consequence of the will to investigate more stratified contexts, in which the co-
 30 presence of multiple elements belonging to different times determines an
 31 interesting condition for experimenting with new archaeological textures that
 32 relate to the city in different ways.

33 Punctual spatialities, monumental hypogeal spaces, or cavities with
 34 capillary and diffuse development, allow us to explore different approaches
 35 based on the consistency of the underground architecture and its relationship
 36 with the city above, "offering themselves as extraordinary *laboratories of*
 37 *imagination* to learn about the beauty of the soil and the reasons for its care"
 38 (Lambertini, 2022, p.39).

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 41
⁴See: <https://www.digging-up.net/>.

Results and discussion

Strategies for archaeological spaces underground: incisions, labyrinths and introspections as design actions for the city of Naples

The fascination of the caves of Naples lies in their value as a negative space of the built city. To manifest this fascination is to reinforce the understanding that what one encounter below constitute the counterpart of what one finds above (De Sola Morales, 1988).

There are numerous cavities and underground archaeological spaces that characterize the city of Naples, both below the historic *intra-moenia* center and in the more peripheral and hilly areas, where the underground is less investigated and sometimes completely disconnected from the space of the city above.

The research intends to test strategies for the enhancement of the undergrounded archaeology, through the in-depth study of three areas located on the margins of the historic center of Naples (Melisburgo, 1979), which share the characteristic of a dense palimpsest, concealed below the city's current level.

Starting from these considerations, it is necessary to clarify some interpretations of the complex relationship existing between architecture, the contemporary city, and underground archaeological spaces, which constitute the theoretical basis of the design experimentation.

Firstly, there is the interpretation of the city as a multi-layered entity, as a complex of overlapping layers that, concealed below the ground level, constitute a unique system, which holds together the diachronic times of the place.

In addition to this interpretation of the city, there is also the reading of the underground archaeological spaces as introverted architectures, generated by an ancient excavation, which is potentially capable of driving a new planning, understood as a continuation of the primitive excavation aimed at reconnecting the above with the below, the outside with the inside of the earth.

Deepening the existing relationship between the above and the excavated voids, submerged in the ground, implies experimenting with strategies for overcoming the disconnection of archaeological spatialities, breaking the "present ground" through operations of soil erosion, of removal of material such as cuts, excavations, incisions, which favor the reading of new continuities between the layers of the city.

"In the material of buildings, there is a substantial connection with the skin of the Earth. [...] *Geological architecture* activates a process of correspondence: not the imposition of a form with a preconceived strategy [...] but the drawing out or giving realization to the potential immanent in a *world in the making*" (Navarra, 2022, pp.134-135).

Taking up what Marco Navarra says, the role of the design is precisely to bring out, to extract the potential hidden in the geological stratum, which collects the material evidence of different times and societies, and which is

1 configured as an archive of past testimonies, in continuous becoming, opens to
2 the future.

3 The design works aim to "dig into the ground", to bring to light the
4 relationships between submerged elements, paying attention to the excavated
5 terrain, understood as project space.

6 In this sense, the three areas of Naples, identified as study areas, the hill of
7 Poggioreale, the Materdei-Sanità districts and Mount Echia, allow us to
8 experiment with different ground conditions, proposing excavation actions that
9 intercept the invisible plastic space by relating to the elements submerged in
10 the earth (see Figure 2).

11 Deep explorations and vertical prospecting interrogate the underground
12 beyond the superficial observation that "does not go beyond a depth of four or
13 five meters" (Liccardo, 2019, p.24).

14
15 **Figure 2.** *Experiencing the underground: a vision for the hill of Poggioreale,*
16 *the Materdei-Sanità districts and Mount Echia in Naples*



17
18 *Source:* drawing by Chiara Barone

19
20 The will to explore the city by design arises from an interesting
21 architectural debate that began as early as the 1980s. In 1988, on the exhibition
22 *SottoNapoli* and the international workshop *Napoli Sotterranea* (Lampugnani,

1988), held to enhance the Neapolitan underground, seven professional architects were called in to develop strategic proposals for the chthonian city. This design exercise turns out to be truly useful and interesting, providing a range of solutions that, although specific to the site, preserve a degree of generality that makes them methodologically translatable into possible actions in the space of the urban underground.

Also, Francesco Venezia surprised by the dialogue that the city of Naples experiences between the ground and the underground, proposed for the *XVII Triennale di Milano* in 1987, entitled "*The Imagined Cities: A Journey through Italy. Nine projects for nine cities*", the city of Naples.

Starting from these, now-distant, design considerations, the research moves on, proposing a deepening of what started in the past, to seek new strategies and design solutions. The aim is to demonstrate that the invisible space of the underground can constitute a space from which to start an urban transformation, weaving new relationships between the urban layers.

An example is the double city of Naples, "made up of cavities, passages, caves, aqueducts, cisterns and archaeological remains", which is waiting to be interpreted in continuity with the above (Varriale, 2004), through possible experimentation of excavation, reinterpreted, through the project, as an *incision of the ground*, as an *intercommunicable labyrinth* and as *archaeological introspection*.

Incisions in the ground of the hill of Poggioreale

The area of the cemetery hill of Poggioreale, complex and multi-layered, is currently at the center of the debate concerning the future urban planning of Naples due to its condition as a cultural landscape at risk: the suspension and the isolation that characterizes this place, foreign to the transformative dynamics concerning the contemporary city of Naples, determine a rather complex situation.

The contemporary city with the new exits of the subway that crosses the hill at the underground level, the monumental cemetery, the Sant'Alfonso district that stretches along the southern edge, the subsoil that contains numerous stratified signs, such as the ancient railway line, or the excavated spaces dating back to the Greek period, are some of the levels that characterize the palimpsest of the Poggioreale area.

The design strategy intends to start from the elements diffused in the subsoil space to favor a reinterpretation of the stratigraphic *continuum* through multilevel intersections capable of reconnecting the different urban levels.

Excavating the ancient ground, to bring to light "the fascinating Greek cave of Poggioreale, in the area below the cemetery of Santa Maria del Pianto, discovered by Enzo Albertini⁵ in 1982, where everything has remained as it was two thousand years ago and on whose walls thousands of graffiti, some

⁵President of the *Napoli Sotterranea Association*, the first association dedicated to the study of the underground of Naples. It was founded in the late 1960s. For more information, see: <https://www.napolisotterranea.org/>.

1 Greek “cavamonti” markings and other indecipherable signs are still clearly
 2 visible” (Liccardo, 2019, p.25), is certainly the trigger point of a broader design
 3 strategy, capable of reverberating on the public space of the upper level. The
 4 presence of graffiti inside the Greek caves induces us to conceive of this space
 5 as a museum, within which it is possible to come into direct contact with
 6 history: the strategy tries to reason on new accessibility to primitive spatiality
 7 and the narration of the past, to offer visitors and citizens the opportunity to
 8 discover the ancient uniquely, revealing a sense of wonder and mystery that
 9 always accompanies the entrance to the chthonic world.

10 The Greek caves, as museum rooms below the hill of Poggioreale, whose
 11 walls are characterized by ancient graffiti, are a place of cross-media narration,
 12 in which the oral form is integrated with the visual one. This combination of
 13 senses nowadays takes place through digital experimentation: an example is
 14 the project for the *LascauxIV* museum by Snøhetta + Duncan Lewis Scape
 15 Architecture in Périgueux⁶ (2017), where the museum narrative is centred on
 16 the experimentation of digital technologies that merge with aspects of
 17 theatrical narration, capable of generating a sensitive atmosphere that
 18 completely involves the user. The visitor inhabits the ancient space like a
 19 primitive man, through the experience of sensory knowledge, moving between
 20 curiosity and fear towards a world that arouses interest, but that is not fully
 21 known. Digital storytelling in museum communication favors a remarkable
 22 paradigm shift of the archaeological museum space, which from a container of
 23 objects becomes a container of narratives, where “everything revolves around
 24 the idea of combining the art of storytelling with a media and digital variety in
 25 terms of the confluence of images, audio and video” (Robin, 2006).

26 However, the archaeological cave spatiality alone does not constitute a
 27 form of visual narration but becomes such through an architectural design
 28 capable of reinforcing the narration of the primordial spatiality: visual, sound,
 29 and atmospheric suggestions, emphasized by internal design grafts favor a
 30 hybrid narrative capable of reoccupying the spaces. The ancient dimension,
 31 now uninhabited and incomprehensible to modern man, is contaminated for
 32 contemporary fruition capable of divulging history and favoring the interactive
 33 immersion of the visitor.

34 The walls of the Greek caves of Poggioreale are reinterpreted as an ancient
 35 visual work, a *speaking image* from which to start an interactive design, which
 36 interprets the subsoil as the rooms of a continuous museum, which goes on to
 37 the upper levels, linking to the monumental cemetery park.

38 This connection between the strata is grafted at the level of the
 39 Sant'Alfonso district, a residential neighbourhood to the south of the cemetery
 40 area, manipulating the pre-existing retaining wall, reinterpreted as a design
 41 element: the wall understood as an “inhabited” element with variable thickness,
 42 defines, on the one hand, access to the underground system from the urban
 43 level, and on the other, allows the reconnection between levels.

44 The objective is twofold: to make the ancient cavities accessible and
 45 usable, to narrate the history and the archaeology, but also to explore new

⁶See: <https://www.archdaily.com/868408/lascaux-iv-snohetta-plus-casson-mann>.

1 forms of crossing and permeability of the hill of Poggioreale, vertically and
2 horizontally, hybridizing the textures characterizing the different levels of the
3 underground.

4 "Historical topography becomes [...] not a landscape museum, but an
5 operational notion for organizing public space. Public space is thus the great
6 ordering element of both diachrony and synchrony" (Tsiomis, 2002, p.174).
7 Gradual squares, punctual accesses, open-air expositions, and resting spaces
8 constitute design elements capable of predisposing urban space to build
9 knowledge, memory, and identity of places, without compromising them.

10 The combined action of the project generates new public space, connected
11 to the submerged archaeological world, through the primitive action of
12 "excavation" in the ground, which guides the process of subtraction of matter,
13 more specifically of incision in the soil, so that the "cuts" of the project can
14 encourage new entrances to the chthonian world.

15 In the case of the hill of Poggioreale, the incision takes the form of a cut in
16 the ground: the project picks up the traces of recent geological prospecting, by
17 extending a previous hole that crosses the stratigraphic thickness of the ground
18 vertically, proposing a continuation to favor a new continuity capable of
19 making the archaeological caves accessible from the different urban levels.

20 As Marco Navarra states, "it's necessary to practice the art of cutting to
21 reconnect the air to the deepest layers of the Earth" (Navarra, 2022, p.196).

22 Thus, the project for the hill of Poggioreale is interpreted as an *incision in*
23 *the ground* capable of reconnecting the urban elevations to the underground
24 museum rooms, which show themselves. The project uses the action of incise
25 not only at the urban scale but also at the architectural-archaeological scale,
26 one of the ancient cavities, proposing to start again from the graffiti (see Figure
27 3), from the visual works engraved on the walls to activate a strategy of
28 narration of the past and exhibition of the places once inhabited.
29
30

1 **Figure 3.** *Incisions in the ground for the hill of Poggioreale*



2
3 Source: drawing by Chiara Barone

4
5 *Intercommunicable labyrinths among the underground rooms of Materdei-*
6 *Sanità districts*

7
8 If, in the Poggioreale area, the development of the large cemetery park at
9 the upper level is closely related, from a semantic point of view to the subsoil
10 of the hill, where the presence of Greek archaeological cavities used for
11 funereal purposes as a place of burial and necromantic practices led one to
12 think of the possibility of the entrance to the beyond, within the second area of
13 interest, the Materdei-Sanità districts, the connection between the "world of the
14 living" and the "world of the dead", although very present, remains latent.

15 Naples had a dense network of underground cemeteries that developed
16 mainly on the slopes of the Colli Aminei, in the suburban area of the Materdei-
17 Sanità districts, the "valley of the dead", as it was called from the time of the
18 Greco-Roman *Neapolis*. In this way, the archaeologist Giovanni Liccardo
19 describes this area as the ancient "valley of the dead", a place with a high

concentration of sepulchers, many of which have been lost to this day and of which only literary evidence remains.

In this regard, several causes, both man-made and natural, have favoured the loss of many of these ancient hypogeal spaces: many have been reshaped and used as stone quarries or transformed into environments for different use by man, while others have been profoundly destroyed or concealed by the forces of nature, the so-called “lave dei Vergini”, which descended, after storms or torrential rains, from the Fontanelle valleys and the Cristallini area, forming rivers of water and debris, which have contributed to the loss of historical memory. The latest discoveries in this area date back to recent times, to 1888, when explorations from Traetta Street continued towards San Gennaro’s Gate, bringing to light several tombs in the Cristallini hypogeum, four continuous rooms completely dug out in the tuff, consisting of a vestibule and a subterranean hypogeum.

Thus, by following the traces of the “lava dei vergini”, i.e., the floods that naturally eroded the city's soil, it was possible to bring to light some of the many hypogea present in the Sanità and Materdei undergrounds. The hypogea of the Cristallini, the Togati, the Melograni and vico Traetta, re-join, along the historic axis of the Sanità district the catacomb complexes of San Gaudioso, San Severo and Santa Maria della Vita, religious archaeological spaces in Materdei district, belonging to different eras, excavated within the Neapolitan tuff, whose excellent mechanical characteristics made it possible to carry out excavations without danger of landslides or mudslides.

These archaeological spaces, completely submerged in the underground, are disconnected from the dynamics of the contemporary city above.

The project aims to reconnect the levels through dual reasoning both physical and figurative, a hybrid path that oscillates between the above and the below, ensuring continuity between the spaces widespread in the archaeological underground, the contemporary city of the above, and its monuments.

The will to reconnect spaces at different levels, both horizontally and vertically, recalls the legendary intercommunicability of the Neapolitan catacombs, recounted in the adventurous tales of many writers between the 16th and 17th centuries: “from the Catacombs of San Gennaro one could pass to those of San Gaudioso, or San Severo, or Santa Maria della Vita, and even to the far-off ones of Sant'Efebo. [...] This immense underground city is said to have been created by the Cimmerians, a people who loved darkness and caves and were afraid of the eruptions of Vesuvius” (Liccardo, 2019, p.109).

Starting from the *intercommunicability* of the spaces below with the spaces above, it’s possible to trace new archaeological and urban concatenations, opening up strategic visions for this stratified and complex area (see Figure 4): on the one hand, the need to unveil archaeology, to break down the existing separation between the city's strata, through widespread outposts of archaeological exhibitions capable of creating interactive cultural networks; on the other hand, the need to encourage the coexistence of different uses

1 embedded in the districts, which inevitably open up to functional
2 experimentations.

3 Archaeological underground metro-stations, churches, exhibition and
4 museum spaces, theatres, commercial galleries, and spaces for care, are just
5 some of the functional declinations that the underground world can host, to
6 favor an opening to the needs of contemporary man, and thus, to the expanding
7 city.

8 Archaeological plots and hybrid use trigger complex design strategies,
9 capable of involving the entire community, through relevant socio-cultural and
10 economic processes, which are activated over time, establishing new urban
11 relationships, starting from the knowledge of the place and the widespread
12 awareness that, beneath the city's feet, lies a heritage of inestimable value to be
13 enhanced.

14 The archaeological underground is not only the seat of the historical
15 vicissitude of the objects it exhibits, but also the history of itself, of the
16 cultural, artistic reasons that generated it: the aim is to provide the visitors with
17 the tools and methodologies necessary to interpret a widespread heritage,
18 which in some cases is intangible.

19
20 **Figure 4.** *Intercommunicability between strata in the Materdei-Sanità districts*



21
22 *Source:* drawing by Chiara Barone
23

The proposed archaeological plots are articulated about the movement of the body and the visitor's travel in the space of the city, also making use of *mediating tools*, such as technology, to facilitate the process of interpretation and understanding of the past.

The project logic, that guides this strategy is that of the opening archaeology to the city (Volpe 2020), defining new concatenations of archaeological spaces, *multiple and labyrinthine paths* that allow for the reactivation not only of the submerged ruins, but also of the surrounding urban context.

In this sense, Toni Gironès' project for the enhancement of the "Illa De La Pietat"⁷ is an interesting example. Illa De La Pietat is an agglomeration of stratified ancient architecture, in the center of the city of Vic: the Roman temple, the remains of the Montcada castle, the baroque churches and chapels are superimposed, resulting in a very complex stratification, similar to that characterizing the Materdei-Sanità districts.

The project proposes a transversal vision, to facilitate the experience of the whole, enhancing the diachrony of past times, activating them in continuity with the urban context. Multiple and labyrinthine design paths link the interior and exterior spaces, generating narrative itineraries that guide the visitor in understanding the place.

Archaeology is the only way to access the present (Agamben, 2017), because of its intrinsic capacity to permeate "every level of stratification, but also to stand outside in order to grasp them all together and discern the tangle of reciprocity and correspondence relationships that bind them together and with what is around them" (De Carlo, 1995, p.19).

The architectural design is the only tool capable of permeating every level of stratification, through punctual grafts that penetrate the underground, generating a continuous path, an archaeological-urban itinerary, connecting the different underground rooms: from the courtyards of the historic Neapolitan, it is possible to access the underground level through architectural elements that favor the high/low connection and stimulate the curiosity of inhabitants and tourists alike, towards the knowledge of a completely unknown "other" world.

In this way, the underground will no longer be understood as a space of oblivion, of fear, or even as a space of technical volumes serving the city, but as an extension of the above, a *continuum* of urban stratification, as it was in the past, permeable through the excavation of *intercommunicable labyrinths* that move between the underground archaeological spaces.

Archaeological introspections for the diachronic experience of the hypogea of Mount Echia

The third area of interest, with common characteristics to both Poggioreale Hill and the Materdei-Sanità districts, is that of Mount Echia. The subsoil of Mount Echia, which is tuffaceous and porous like the other Neapolitan areas described above, has been used in very different ways over the years, according to the needs of those who lived there: in the Greek period, the area,

⁷See: <https://tonigirones.com/proyecto/vic/>

known as the “megarense region”, i.e. an area where yellow tuff was quarried for construction purposes, was characterised by the presence of the “Platamonie” caves, used as baths and places of worship of Mithras and Serapis; then, in the Augustan period, followed the excavation of the Roman Serino aqueduct and cisterns, expanded between the 16th and 17th centuries by the Neapolitan Cesare Carmignano, hence the aqueduct of the same name; later, in the 16th century, extraction campaigns were started in the San Ferdinando area in the Carafa Caves to find tuff useful for the construction of the State Archive and Palazzo Carafa; finally, in the 19th century, there was the construction of the bourbon tunnel, never completed, designed by the architect Errico Alvino under the rule of Ferdinand II of Bourbon. Over the years, the bourbon tunnel has performed various functions, first as a royal tunnel, then as an air-raid shelter, then as a car depot, and finally as an underground car park.

With the advent of the late twentieth century, the underground of Mount Echia once again became the subject of numerous studies, which tried to imagine the continuation of Alvino's work, to rediscover an "intimate part of the other city" (Rossi, 1988), experimenting with excavation projects in continuity with the past.

The possibility of giving continuity to the existing excavated spaces, belonging to very different eras and disconnected from each other, starts a design reflection aimed at constituting a single system that cuts through Mount Echia at the underground level: the connection between Plebiscito Square, through the hypogeum of the Church of San Francesco di Paola, by means of the continuation of the bourbon tunnel, could allow Morelli's street to be reached, and the nearby Vittoria Square, onto which the great public Neapolitan Villa, a very important urban park, is grafted.

In this way, Errico Alvino's original idea, to build a tunnel under Mount Echia to connect the east and the west of the city, could be implemented through micro-drilling between the pre-existing excavated areas.

"An obstacle to better and easier ways is Mount Echia, which is like an insurmountable rock. So, while I studied any route, I could only imagine one that would arise from tunnelling of this mountain, i.e., by drilling where the shortest and most opportune pierce would be" (Bruno, De Fusco, 2019).

With these words, Errico Alvino outlines the intentions of his project, which involved the construction of a double tunnel, starting from Carolina Square, behind the Church of San Francesco di Paola, connecting on one side to Vittoria Square and on the other to Martiri's square.

The excavation was started only on one side, where the two tunnels were opened in the tuff, which, once they met the Carafa Cave, would continue for another 200 meters, until they intercepted the cisterns of the Carmignano aqueduct. The excavation work stopped abruptly in 1855, with the death of Ferdinand II of Bourbon, in correspondence with the Church of San Francesco di Paola.

There were other hypotheses for underground connections in the 20th century, but none were realized until 1929, when the Civil Engineering Office

1 built the current Vittoria's Gallery, a driveway that cuts across Mount Echia, in
2 a parallel route and heedless of the previous excavations carried out.

3 Although the construction of Vittoria's Gallery provided an answer in
4 functional terms, facilitating the connection between the two parts of the city,
5 the ancient, excavated spaces are not set aside and removed.

6 Starting in the 1980s, a flourishing design season began, involving the
7 Neapolitan underground, as demonstrated by the projects carried out as part of
8 the experimental workshop "*Sottonapoli. Idee per la città sotterranea*" (1988),
9 already described: functional hybridizations, architectural grafts between above
10 and below, new excavated elements try to imagine different relations with the
11 city above.

12 So, it appears interesting to reinforce the complementary relationship
13 between below and above: underground cavities, spaces intended for
14 contemporary uses, and urban public spaces are linked in a unified vision,
15 oscillating between the soil and the subsoil (Santarelli, 2015, pp.113-119).

16 The user freely explores the hypogeum by passing through very different
17 spaces: archaeological exhibits, spaces for events and concerts, underground
18 rooms that can be used for temporary exhibitions, liturgical spaces linked to the
19 Church of San Francesco di Paola, and contemporary parking.

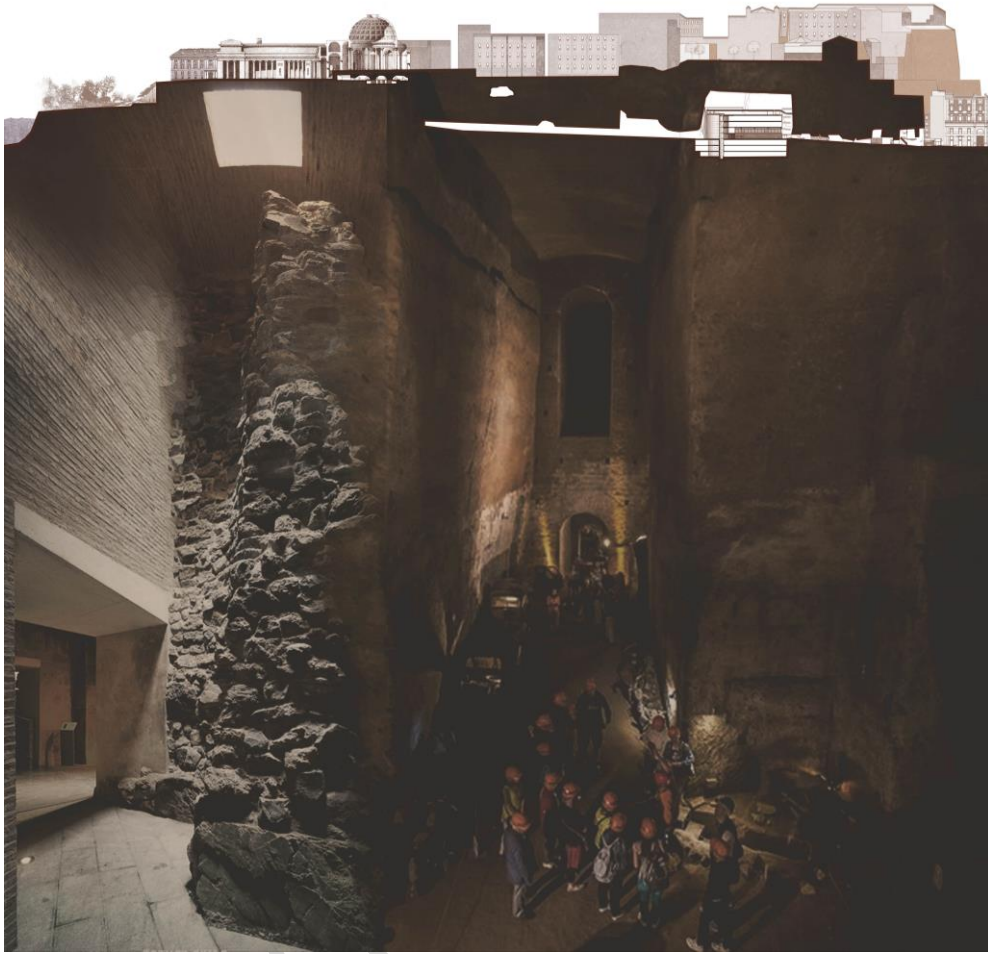
20 The idea of overcoming the typological and formal paradigm of the tunnel
21 understood as a crossing space, functional only for urban mobility, leads to
22 new correlations with the forms of living space and exhibition space, to show
23 the archaeology submerged in the ground.

24 The adopted design strategy is the one described by Moneo for the
25 Museum in the archaeological areas of Cartagena. "The project proposes to
26 incorporate and connect existing buildings and voids in the urban fabric,
27 creating a museum itinerary that [...] leads from low to high altitudes,
28 unfolding through exhibition spaces illuminated by a complex system of
29 skylights, and developing by serving the visitor with mechanical elevators,
30 which serve as a guide to the presentation of the remains found in the
31 excavation campaigns. It is a *museum promenade*" (Moneo, 2005).

32 The idea that the crossing route can be configured as a *museum-*
33 *promenade* allows for the overcoming of the formal paradigm of the tunnel for
34 the urban connection: the excavation project carries out a systematization of
35 the existing hypogeal spaces, through connections, deviations, micro-drilling,
36 necessary to re-connect the excavated spaces through new project grafts (see
37 Figure 5).

38
39

1 **Figure 5.** *Museum-promenade* through Mount Echia



2
3 Source: drawing by Chiara Barone
4

5 The project aims to carry out an *archaeological introspection*: if in
6 psychology with introspection techniques it is possible to access a state of
7 mind to understand the past and the emotional processes linked to the person,
8 in architectural terms, the archaeological introspection can be understood as a
9 *deep look into the earth's removed*, re-appropriating forgotten spatialities as
10 open-air archives able to speak of the past by narrating the transformations that
11 have characterized this place.

12 Paths, tunnels, and galleries for urban crossing connect hollowed-out
13 spaces belonging to different eras: from the narrow section of the crossing
14 space, one enters very large spaces, in which, as in a process of catabasis, the
15 user loses contact with the outside world, entering a state of *sensory*
16 *deprivation* (Ustinova, 2009, p.154), that is loss of senses.

17 Archaeological introspection allows one to become fully aware of the past
18 of the place, emphasizing the entry into another dimension that allows one to
19 strengthen the intracorporeal bond between the user and the space.

20 The *museum promenade* is understood in this perspective as an
21 introspective crossing through the body of the earth, a continuous path that

reappropriates the archaeological cavities as nodes of a diachronic space telling a synchronic story, in continuity with the contemporary urban scene.

Conclusions

Archaeological undergrounds as a *palimpsest of opportunities* for the design of the contemporary city

"Naples is not only what one sees in glory or decay. One can almost feel, underfoot, the breath of an invisible or hardly visible world that has been building the present city for many centuries. A huge, fragmented foundation of many layers, many times overlapping materials, placed by people from different regions and religions. Thus, magnificent monuments emerge, which men sometimes uncover by digging. This accumulated material conditions and directs what is built today" (Siza, 2005, p.24).

As Alvaro Siza states, it is the sedimented matter in the subsoil that guides contemporary architectural design, reviving the dialogue between the soil and the subsoil" (Venezia, Petrush, 1987), which, as demonstrated through the three case studies in the city of Naples, although not fed for years, is still very strong.

The project intends to experiment with the ancient spatialities in the subsoil starting from the primitive excavation, working in those interstitial spaces between above and below, which over the years have led to a fragmentation of the different urban layers.

The contribution interprets the action of *excavating the past* as a cognitive tool but also as a design tool, on the one hand, it deepens the archaeological and historical knowledge, investigating often unknown primitive spatialities, on the other hand, it provides the project with the tool to unveil and reconnect them back to the above city, emphasizing the continuity between the urban layers (Dell'Aira, Grimaldi, Guarini, Lambertucci, 2015).

In this regard, the urban and architectural strategies for the three areas of Naples propose alternative excavation processes, open and in progress, capable of triggering a process of transition of the archaeological underground space into the city.

Excavation as an incision of the ground, in the case of the hill of Poggioreale, experiments with the possibility of generating an empty space available for new narratives that feed on the exchange between reality and the imaginary, a cutting of the ground layer that allows the excavated spatialities submerged in the earth to be brought back into play, making them the protagonists of a narration of the history of the place.

Excavation as a founding action of new inter-communicable labyrinths, in the case of the Materdei-Sanità districts, explores the potential of grafting hybrid archaeological plots, capable of involving the user and the local populations in the rediscovery of the urban "removed", urging the enhancement of the socio-cultural and historical characteristics of the place and the physical connection between the underground archaeological rooms.

Finally, the design of the *excavation as an archaeological introspection*, which guided the strategy for the underground of Mount Echia: the project makes possible an intracorporeal itinerary into the Earth, through a continuous crossing that accompanies the user in the experience of knowledge of a new world, which destabilizes the senses, but which possesses in its spaces the very origin of the place. The sensory deprivation and emotional charge of the underground world become a design tool that enhances the narrative character of these places.

In conclusion, the excavated city is to be interpreted as a *palimpsest of opportunities* and of new principles, of new looks towards the future, which make use of the archaeological spaces of the chthonic world as "project material capable of generating the archetypal and pre-existing layout of the city that evolves" (Conte, 2014, pp. 1-2), through a topographical and archaeological method capable of keeping different times and materials together" (Navarra, 2022, p.VIII).

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