Giuseppe Pace
Renata Salvarani *Editors*

# Underground Built Heritage Valorisation

## A Handbook

Proceedings of the First Underground4value Training School

*Heritage and Community Identity*, 1

A series of:

UNDERGROUND4VALUE

*Series Editor:* Giuseppe Pace

*Scientific Committee:*
Muge Akkar Erkan, *Middle East Technical University, Ankara (TR)*
Alfonso Bahillo, *University of Deusto, Bilbao (ES)*
Tony Cassar, *University of Malta, Msida (MT)*
Shirley Cefai, *University of Malta, Msida (MT)*
Nasso Chrysochou, *Frederick University, Limassol (CY)*
Szilvia Fábián, *Hungarian National Museum, Budapest (HU)*
Beata Joanna Gawryszewska, *Warsaw University of Life Sciences, Warsaw (PL)*
Laura Genovese, *Institute of Sciences on Cultural Heritage, National Research Council (IT)*
Klodiana Gorica, *University of Tirana, Tirana (AL)*
Pinar Karagoz, *Middle East Technical University, Ankara (TR)*
Konstantinos Lalenis, *University of Thessaly, Thessaloniki (EL)*
Zili Li, *University College Cork, Cork (IE)*
Ernesto Marcheggiani, *Polytechnic University of Marche, Ancona (IT)*
Susana Martinez-Rodriguez, *University of Murcia, Murcia (ES)*
Sanjin Mihelić, *Zagreb Archaeological Museum, Zagreb (HR)*
Montserrat Pallares-Barbera, *Autonomous University of Barcelona, Barcelona (ES)*
Preston Perluss, *Grenoble IAE. Grenoble (FR)*
Renata Salvarani, *European Universtiy of Rome, Rome (IT)*
Carlos Smaniotto Costa, *Lusófona University, Lisbon (PT)*
Alice Tavares Costa, *University of Aveiro, Aveiro (PT)*

# Underground Built Heritage Valorisation

## A Handbook

Proceedings of the First
Underground4value Training School

*Edited by*

Giuseppe Pace and Renata Salvarani

edizioni
Consiglio Nazionale delle Ricerche

This is an open access work distributed under the Creative Commons Attribution-NonCommercial-NoDerivatives 3.0 (https://creativecommons.org/licenses/by-nc-nd/3.0/). Users can redistribute the work for non-commercial purposes, as long as it is passed along unchanged and in whole, as detailed in the Licence. Consiglio Nazionale delle Ricerche must be clearly credited as the owner of the original work. Any translation and adaptation of the original content requires the written authorisation of Consiglio Nazionale delle Ricerche.

© Cnr Edizioni, 2021
P.le Aldo Moro 7
00185 Roma

ISBN digital version: 978-88-8080-450-5
ISBN printed version: 978-88-8080-451-2

IT manager for CNR-ISMed digital publishing services Antonio Marra

*This article/publication is based upon work from COST Action CA18110 "Underground Built Heritage as catalyser for Community Valorisation", supported by COST (European Cooperation in Science and echnology).*

COST (European Cooperation in Science and Technology) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation.
*www.cost.eu*

Funded by the Horizon 2020 Framework Programme of the European Union

# Contents

Preface v
*Giuseppe Pace and Renata Salvarani*

List of Contributors ix
List of Figures xiii
List of Tables xxi

1. Introduction. Underground Built Heritage as Catalyser for Community Valorisation 1
*Giuseppe Pace*

PART 1 LECTURES ON METHODOLOGY

2. Symbolic Implications of Use and Re-use of Underground Urban Spaces An Historical Interpretative Framework 21
*Renata Salvarani*
3. A Methodological Framework for UBH Classification 31
*Roberta Varriale*
4. Unstructured Textual Data Analysis for Underground Built Heritage (UBH) Knowledge Base 43
*Pinar Karagoz*
5. New Museology and Design Thinking Methodology 59
*Tony Cassar*
6. Infrared Thermal Imaging. Principles and Applications for Civil Engineering Inspection 67
*Robert Olbrycht*
7. The Use of Innovative SLAM Solution for a Fast Acquisition of UBH 77
*Roberto Pierdicca*
8. Security Considerations on UBH Sites 89
*Kerim Aydiner*
9. Management and Valorisation of Underground Heritage from Prehistory to 20th Century. The Maltese Scenario 103
*Shirley Cefai*
10. Valorisation of Rural Heritage and Touristic Bias. Potential Benefits to Local Community 121
*Ernesto Marcheggiani, Andrea Galli, Ilaria Fioretti, Marco de Seris*
11. The Underground Cultural Landscape as an essential component of local identity. An implementation solution of the UNESCO Recommendation of Historic Urban Landscape 133
*Laura Genovese*

12. Conservation and Valorisation of Cultural Heritage. Strategies in Hazards Zones: a case on Earthquake area in central Italy 141
*Antonello Alici*
13. Developing Underground Heritage Business Models. Creative Tourism as a Strategy for the UBH Promotion 159
*Alvaro Dias*
14. Planning the Invisible. The Sustainable Use of the Underground Spaces and Places 163
*Pietro Elisei*
15. Co-creation and Inclusiveness of Public Spaces with Heritage 173
*Tatiana Ruchinskaya*
16. Informal Planning Approaches in Activating Underground Built Heritage 185
*Carlos Smaniotto Costa*
17. Heritage Conservation and Community Empowerment. Tools for Living Labs 197
*Giuseppe Pace*

PART 2 CASE STUDIES

18. Place for the Dead, Place for the Living. Transformations and Heritagisation of the Fontanelle Cemetery in Naples 237
*Elisa Bellato*
19. Naples: A Living Lab for the Management of the Fontanelle Cemetery 247
*Juan Valle Robles*
*20.* Case study: Göreme in Cappadocia, Turkey 253
*Müge Akkar Ercan*
21. Göreme: The Case-study Storytelling 269
*Daniela de Gregorio*
22. Murcia: Valorising the Mining Heritage of La Union 285
*Susana Martinez-Rodriguez*
23. Green Karst Region: Between Natural Caves and Alpine Wall Fortifications 299
*Luisa Errichiello*

PART 3 RESEARCH GROUPS

24. Creative Tourism. Connecting Fontanelle Cemetery to a Larger Touristic Route 319
*Pamela Bartar, Gresa Calliku, Sara Morena, Francesco Paci, and Mia Trentin*
25. H2H Heritagisation of a Place of Worship: Frictions and Solutions 339
*Elisa Bellato, Amber Keurntjes, Andrea Murzi, Felicia Peronace, Tuğçe Sözer, and Sacid Yildiz*

26. Karaya is Calling. Business Model Canvas for Developing Eco-Tourism Project in Karaya 351
*Pelin Aytekin Aslaner, Oren Ben-Shlomo, Daniela De Gregorio, Lillie Leone, Antonio Pelegrina, and Sasa Zecevic*

27. #InTransientKaraya: Approaches for Developing Knowledge, Meaning, and Community Identity in Abandoned UBH 363
*Muge Akkar Ercan, Meryem Bihter Bingul Bulut, Bernard Bugeja, Yasemen Kaya, Jorge Magaz-Molina, and Sabrina Shurdhi*

28. Deep Down into the Green: A Strategic Pathway for the Sustainable Re-use and Valorisation of the Underground Military Heritage in the Green Karst Region 373
*Luisa Errichiello, Lucilla Paola Favino, Matej Krzic, María del Carmen Solano Baez, and Mireille Tabone*

29. A Plan for the Valorisation of a Mining Park in La Union (Spain) 399
*Tony Cassar, Marija Jovanovic, Susana Martinez-Rodriguez, Maria Murillo-Romero, and Tommasina Pianese*

General References 415

CHAPTER 27

# #InTransientKaraya

## Approaches for Developing Knowledge, Meaning, and Community Identity in Abandoned UBH

*Muge Akkar Ercan, Meryem Bihter Bingul Bulut, Bernard Bugeja, Yasemen Kaya, Jorge Magaz-Molina, Sabrina Shurdhi*

### 27.1. **Introducing Karaya**

Karaya is an underground built settlement located in a canyon in the NW of Göreme (38°41'03.5"N 34°47'55.8"E), parallel to road D-300 connecting Nevşehir to Avanos. Karaya was abandoned in the 1960s. Along the years, it has become a suggestive historical site where recent memories have overlapped with a forgotten past related to monastic movements. Karaya offers an unexplored archaeological complex, surrounded by a plateau of traditional vineyards and fruit trees complemented by a scenic backdrop (Fig. 27.1).

*Figure 27.1: Karaya valley.*
*Source: Google Street View (above), Ahika Regional Development Agency, 2020 (below)*

Over the nearest hills, a land-art park was created by the Australian artist Andrew Rogers between 2007 and 2009. Activities related to agriculture have long taken place in the site. Recently trekking tours have been introduced into this valley as a touristic activity.

The Living Lab, held in the context of COST Action CA18110 Underground4value, revealed that Karaya has been suggested by local and regional administrations as the place of opportunity to develop alternatives to mass-tourism. In Karaya, eco-tourism could be given value and educational facilities unfurled. It could also be considered an affordable site for the promotion of domestic tourism. In this sense, stakeholders expressed their desire of outlining a cultural approach to local heritage like gastronomy, traditions, and local manufactures.

*Figure 27.2: Perspectives of Karaya UBH settlement.*
*Source: AHILER Regional Development Agency, 2020*

The U4V Training School held in Naples offered the statement of Knowledge, Meaning and Identity of Karaya to study a case by first analysing, and second by proposing strategies, steps, and measures. The goal was to propose a set of ideas to allow for a smooth implementation of new cultural and touristic activities. The expected research results from our proposal should support an empathetic cultural management plan with the local community and should be sensitive to the conservation, accessibility, and security of this UBH site.

Our approach was based on the principles of sustainability, diversity and community participation and technology support. Taking a cultural landscape approach offers the opportunity to explore the territory as it is perceived by its inhabitants [1] and should overcome the large-scale problems of cultural management. Applying the Landscape Character Assessment as a scientific and methodological research guideline offers a multidisciplinary progressive investigation to define the baseline for a Management Plan.

The abandonment of Karaya by its inhabitants was considered an opportunity, instead of a weakness (Fig. 27.2). Learning the recent past from the elderly people could be a strength of the project, which can be implemented by the inhabitants of the nearby towns. This idea can also provide the opportunity to reinforce intergenerational relations with a diversity approach. Meanings, desires, and expectations of younger generations could contribute new ideas to those provided by stakeholders and promotes multi-representative communitary roundtable decisions.

## 27.2. **A Search for a Local Identity**

The identity of a place is often assumed to remain consistent over a long period of time. Identity does not only consist of the tangible heritage, morphology and place dynamics but also consists of the intangible heritage, such as traditions and practices which are passed down generations.

During the Training School, our group explored and debated several key aspects which were found to be important to the site (Fig. 27.3). The group first began researching where Karaya is located and the identity (or identities) which the valley possesses, and which could have previously had. Although the group did not have the opportunity to physically visit Karaya, research concluded that the site has laid derelict for many decades, resulting in the loss of memory and the identity. It was also noted that since the site is derelict, truly little amounts of information were gathered, and few research projects were carried out on the area. This lack of knowledge requires archaeologists, historians, and other researchers to study Karaya's past and identify the values of the site.

*Figure 27.3: Word cloud developed during the research process of Group*

We debated whether the values and identities which were present on site should be retained or whether they could be altered. It was also debated whether it would be correct to recreate the same identity which was lost along the years or create a completely brand-new identity.

We also carried out a research on the adjacent locations, giving a good indication of the identity, vernacular architecture, and values which Karaya once possessed. One of the adjacent locations which was chosen to study was Göreme, which is associated with similar vernacular dwellings dug in rock formations as those in Karaya. Göreme was studied due to its proximity and similar heritage. Research about the site uncovered that before the tourism boom, Göreme was inhabited by several farmers who resided in the UBH settlement (i.e. the "fairy chimneys" and the houses connected to caves), and worked the nearby agricultural lands. However, Göreme is at risk of losing its identity due to the tourism boom which occurred in the Cappadocia region during these past decades. It was noted that this boom has led to gentrification as well as the loss of practices and values which the residents

held for many years. It was also identified that touristic activities were being promoted in the destination such as "fairy chimney" hotel experiences, quad-biking, balloon-trips, horse-riding, and trekking.

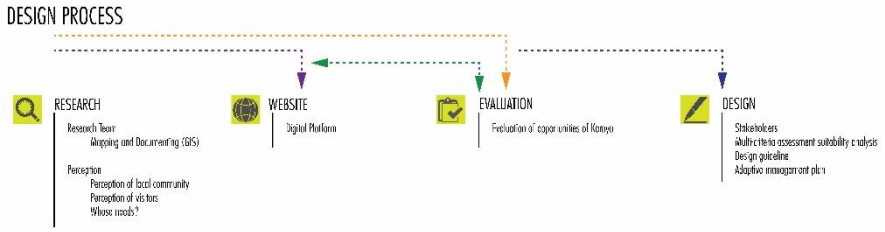


*Figure 27.4: Stages of design and identity-building process*

From this analysis and research, it was clear that the path for Karaya should be different to that which was taken for Göreme. Our group proposed a more sustainable approach towards the regeneration of Karaya. Allowing Karaya to be re-inhabited means that the community could identify with the area, and thus help maintain the physical and social dimensions of the space. Our decision was to re-situate Karaya as a territory of opportunity, memory, recognition, and future for the local community. Continuous co-creation of the identity with the help of both locals, visitors and tourists would also be beneficial as this promotes collaborations (Fig. 27.4). Another proposal involved the depiction of the past traditions using the latest digital tools such as videography and VR tools. In this way, visitors would be able to gain a small taste of Karaya's past identity.

## 27.3. **A multiscalar and multi-disciplinary approach to analyse Karaya**

A successful process of valorisation focusing on a place's identity cannot be achieved without determining first 'what the place wants to be', a question raised initially by Louis Kahn [2]. Answering this question will instigate the course of actions required to discover and rediscover collaboratively the identity of Karaya, an 'abandoned place' located in Cappadocia. Thus, there needs to establish a strong connection between the notions of 'intransience' or 'permanence' and 'place identity'. New layers of identity of the place should be incorporated by the local community and visitors, once the abandoned Karaya would be resettled and reused. In this way, new meanings and experiences would continually create new layers of identity for Karaya.

The process of identity transformation of Karaya should consider the perceived meanings of both the local community and visitors. This is an essential fact, because at present Cappadocia's images predominantly include tourists' imageabilities. In the context of meaning and identity, this transformation should highlight the uniqueness of the site and its heritage and not take place in a 'copy-paste' manner. While placing a great importance in the uniqueness of the location, one must not forget the

integrity of Karaya as a component of a larger system. To address the issue of "Intransient Karaya", we should suggest a multiscalar approach in which Karaya will be considered at the microscale, Göreme will be seen at the mesoscale, and the region Cappadocia at the macro scale.

Understanding how Karaya fits in the above-mentioned system will improve the valorisation of tangible and intangible resources. Overlapped on the abandonedness of Karaya, a place's identity is created during a mutual ongoing process of both spatial and socio-cultural milieu as elements with their respective independence in an integral totality. Identification pertaining to both locals and tourists has a strong association with the 'intransience' of 'life-situations' in a place. Besides a multiscalar approach, there also needs information and knowledge provided by different disciplines and perspectives to discover 'identities' and 'meanings' for the abandoned settlement of Karaya. This is also important especially in managing the local multiple resources.

| Diversity Approach | I Emphasize | II Participate | III Involvement |
|---|---|---|---|
| Children<br>Gender<br>Immigrants<br>Older people<br>Local promoters etc. | Memory<br>Expectations and desires<br>Visits and approaches to territory | Involved in valorization and conservation<br>Participatory process of take decisions | Local employment<br>Iterative process<br>Adaptive process |

*Figure 27.5: Draft of the development process*

A multidisciplinary analysis will aim to consider a variety of perspectives such as historical, archaeological, environmental, geological, planning, economical, morphological, architectural, social, and cultural. The following objectives should be considered:

- Learning "what the place wants to be" to bring forth the uniqueness of Karaya and manage the resources such as: the community, agricultural land, artefacts, and memory
- Interconnecting the scales of the system in a meaningful way and efficient way so that the users, namely the locals and the tourists would experience 'orientation', and accessibility as a physical connection with the place.
- Centring on the local community and their memory to help establish a psychic connection, 'identification' with the place.

Based on this multidimensional and multi-scalar approach, our research proposes four steps (Fig. 27.5). First is the initiation of research about Karaya's history. It would be relevant to discover recent memories of the last inhabitants of Karaya and their descendants. The second step will be to analyse the current conservation situation, define the characteristics of the UBH settlement and point out its values and risks. Physical and spatial issues should be included in the development of a management plan: functions provided, prevision of impacts, zonification of preserved

areas or caves, tourist capacity, waste management and supplies, accessibility, parking, cyclo-pedestrian routes, adaptability of the caves for new uses, conservation needs, spatial limitations, security measures, new material criteria, etc. Finally, this research should also include the economic, social, and cultural dimension which will support the sustainable development of both local community and local businesses.

We suggest adopting a holistic approach about the whole physical, environmental, and cultural dimension displayed in Karaya, rather than focusing on certain significant features. As part of a major work of landscape characterization [3] a research work should describe an accurate approach to this territory considering a local community empathetic approach. Historic cartography, old photos, memories, and oral heritage could integrate socio-cultural considerations. The spatial framework should be translated to cartographic data developing an infrastructure for spatial information and services with the aim to offer useful and transparent information [4]. UBH inventory should be developed. Results of caves-security and stability, flows-charge impacts, or tourist affluence research can provide actualized monitoring data accessible online.

## 27.4. **Knowledge as valuable process**

Virtual dimension cannot be forgotten in the strategy of rebuilding the meaning and identity of an abandoned place. Digital devices and social networks have a significant role in the twenty-first century production of common imaginaries that must be considered. Considering social networks, digital devices and virtual contents could amplify not only possibilities of participation, including visitors in the building of meaning and identity of Karaya, but also a way of diffusion of research.

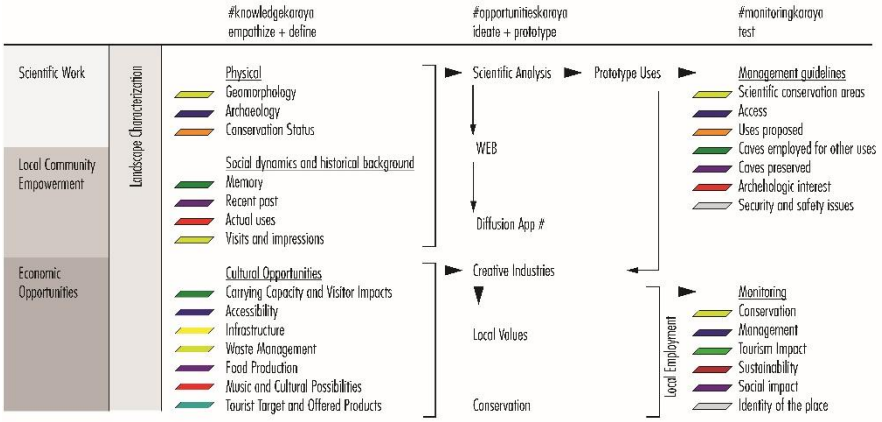


*Figure 27.6: Draft of the platform structure*

A centralized platform could combine the research script, scientific results and all the contents related to the communitary process of identification and cultural management policies displayed (Fig. 27.6). Local community events, organizers'

facilities, educational programmes, and fests calendars displayed in Karaya could be considered as new intangible values, but also, they could provide important contents as visitor's information. A collaborative platform could offer the possibility to put in contact potential visitors and stakeholders, offering different tour plans. Also, a collaborative tool could offer to the visitors sharing opinions, photos and routes of the complex.

Results of the different researches should be shared online offering an exemplar case study to be replicated. Knowledge not only means a valuable growing resource, but also it represents a tool for displaying a participatory process of management held by the community. To make possible a participatory process of supervision and control of the site, transparency contents should explain investments displayed, agents and stakeholders involved, monitoring data about security and stability, affluence impact, management measures.

## 27.5. **Karaya Eco-Museum**

Eco-museum is an idea that integrates nature and culture through the leading role of the local community. The components of the eco-museum concept are territory, heritage, memory, and community [5]. Our research intended to re-situate Karaya as a territory of opportunity, memory, recognition, and future for both the local community and tourists. Therefore, establishing Karaya Eco-museum will help us to co-create the identity of Karaya through interactions between the local community and visitors who have deepened their understanding of the value of such UBH. Eco-museum ideas are not a fixed structure; thus, each eco-museum has distinct and unique elements. Karaya Eco-museum has its own characteristics and we have listed tangible and intangible heritages of Karaya (Fig. 27.7).

| | Tangible Heritages | Intangible Heritages |
|---|---|---|
| Natural and Ecological Values | · The rock caves<br>· Stream<br>· Natural view of the valley<br>· Pigeons<br>· Vineyards | |
| Cultural and Social Values | · Cultivating vineyards<br>· Using caves as a storage | · Lifestyle at the cave houses<br>· Traditional dishes<br>· Customs and traditions |
| Historical Values | · Cave Houses | |

*Figure 27.7: Karaya Eco-museum*

The proposed eco-museum will comprise Karaya Valley's significant locations and attach those sites with new actions to preserve the underground heritage as well as community legacy. The main goals of the eco-museum are (Fig. 27.8):

- The development of sustainable landscape management to protect all-natural components of the region and wise use of resources
- The development of sustainable tourism based on the concept of Eco-museum through a co-operation of local governments, related organisations, and local community (Fig. 27.9)
- Raising awareness about the values of the community and the area, enhancing the understanding of local people regarding these values, and contributing to development of the local community.

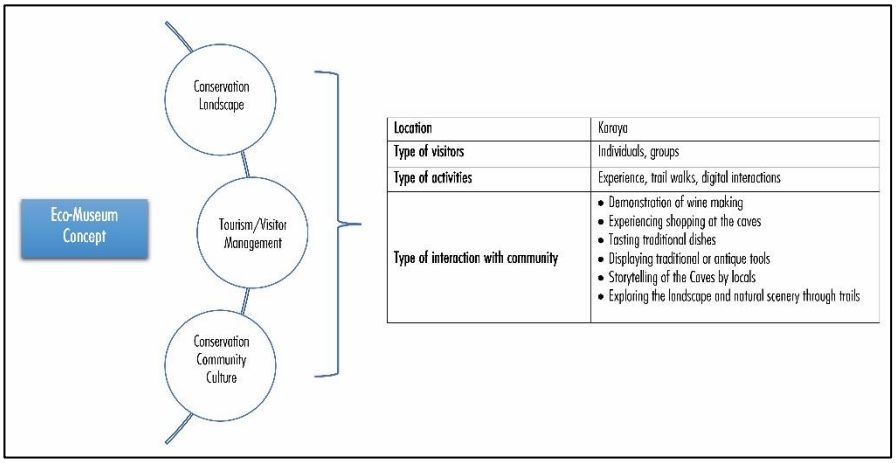


*Figure 27.8: The idea of Karaya Eco-museum*

## 27.6. **Conclusions**

UBH knowledge, meaning and community identity development process requires a multidimensional and multiscalar approach. Research should have two main goals: first, to discover its geomorphological, historical, archaeological, ecological and socio-cultural values and secondly, to identify regeneration, accessibility, conservation, security and safety measures that guarantee visitors' access in a sustainable way. An empathetic approach with the local community must attend not only to participation in decision-making and management processes, but also to propose previous research steps aimed at learning about recent memories, wishes and expectations of the enhancement of their heritage.

The feedback of tourists and visitors will be also used to the planning and management policy development of Karaya. Digital devices will support research diffusion and participatory processes and sustain the co-creation of new identities. These digital devices will also work as an assessment and feedback tool for the improvement of research, planning and management policies. The idea of Karaya eco-museum, considering the features of the area, is one of the solutions that must be taken into consideration for development of sustainable tourism in Karaya. The eco-museum will also maximize the benefits to be gained from the natural, cultural,

and historical features of Karaya and, at the same time, minimize the threats and impacts.

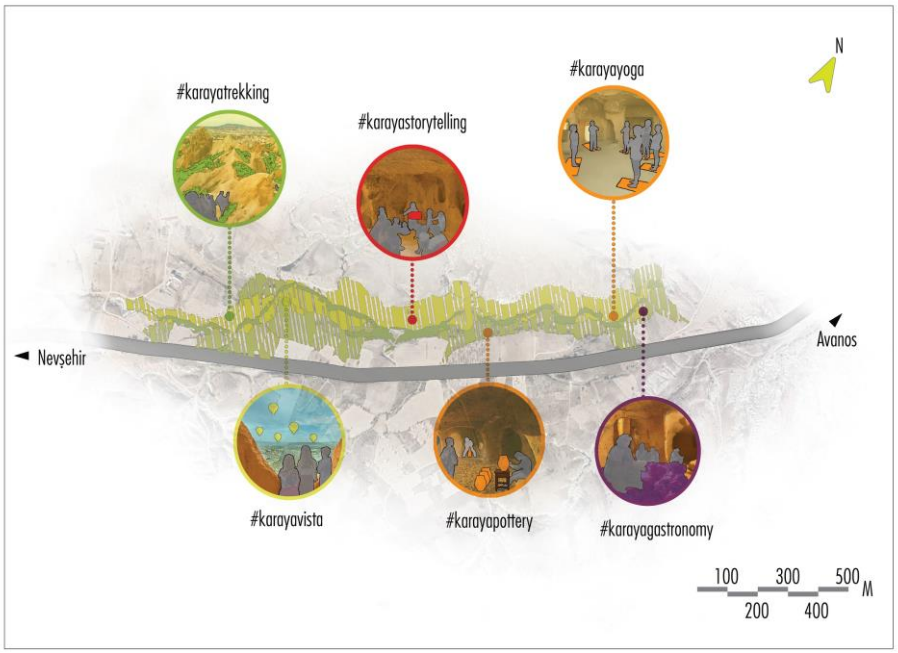


*Figure 27.9: Draft of the platform structure*

## REFERENCES

[1] Council of Europe (2000). *European Landscape Convention*. European Treaty Series - No. 176. 20.X.2000. Florence. Accesible on https://rm.coe.int/1680080621

[2] Norberg-Schulz, C. (1980). *Genius Loci: Towards a Phenomenology of Architecture*. New York, Rizzoli.

[3] Tudor, C. (2019). *An Approach to Landscape Character Assessment*. Natural England. Accesible on www.gov.uk/natural-england

[4] Chías, P., Abad, T., Echevarría, E., Da Casa, F., & Celis, F. (2007). *A GIS in Cultural Heritage based upon multiformat databases and hypermedial personalized queries*. In Georgopoulos A. (ed), *Proceedings of the XXI International CIPA Symposium*, 01-06 October 2007, Athens, Greece.

[5] Rivard R. (1988). *Museums and ecomuseums: questions and answers*. In: Gjestrum JA and Maure M. (eds.), *Økomuseumsboka – Identitet, Økologi, Deltakelse. Tromsø*: Norsk ICOM. 123–8.