UNDERGROUND4VALUE

#3 U4V Newsletter

May 2020

Notes on the First Year of Underground4value

By Giuseppe Pace

One year has already passed. Our COST Action, our challenge, was born that April 9th in Brussels, where we first met in a formal kick-off organised by the COST Association, establishing rules, fixing dates on our agenda, and deciding responsibility and tasks. In less than three months the first Working group meeting was held in beautiful port city of Ancona, with more than 60 people dialoguing about underground built heritage definitions and classifications, technologies for investigating, monitoring, and visualising cavities, caves, and archaeological sites. And after that, a local workshop introduced us to concrete needs and experiences. The website was set up and the logo was chosen, designed by an artist from Novi sad. After the summer, the number zero of newsletter was published and we started our mission of interacting with local communi-

ties characterised by underground resources not fully valorised. Four case-studies opened the way to define a methodology for developing living lab experiences. Naples, Göreme, Postojna, and La Union became niches of experimentation, visited by our experts. Then, it was the time of the Naples Training school, with the challenging experience of 30 trainees dealing with concepts and methodologies, still under-construction, and all together working passionately on real cases-studies in a cold castle hall. At the same time, the second working group meeting and Naples workshop were held. It was the last face-to-face opportunity before the covid-19. Nonetheless, this second year, thanks to limitations for meeting, will be a great opportunity for developing our digital approach and repository.

IN THIS ISSUE: Report on the First Annual Grant; Scheduled for the Annual Grant; Report on conferences (Rome, Vienna); Abstract of the Training School Lectures; A glossary of definition for underground4value; The Underground in the literature

Looking over Covid-19
by Renata Salvarani

This issue reports on activities, lectures and researches finalised during the acute stage of the pandemic spread in many countries.
Next pages are the outcome of the collective effort of the scientific group involved in the Cost Action, shared and published when we are glimpsing a general improvement in Europe: they are an incentive to look to the future with hope.
The strength of U4V is the network of scholars and professionals engaged in the challenge to deal with the heritage's valorization, matching experiences and innovative approaches. The uncertain situation due to Covid-19 makes it so necessary to enhance bonds, contacts and exchanges. Thus, keeping and fostering our research group is a major objective polarizing efforts and energies. This newsletter, as a tool to keep in touch people and ideas, is growing thanks to the contributions in the COSTS Action and is improving in contents as the activities are carried on.

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Footprints of identities in the urban space

Between archaeology and valorisation

By Renata Salvarani

Underground4Value has been introduced during the conference "Religious groups anf urban space: symbols, interactions, transformations" held in Rome on March 2 and 3. The event has been promoted by the European University of Rome and the Pontifical Institute of Christian Archaeology just before the Italian general lockdown, with the scientific coordination of Renata Salvarani and Lucrezia Spera. It was focused on the relationships between cities and identity groups, analysed in a historical perspective. Signs and symbols impressed in the urban texture have been considered as elements of cultural and political processes of semantization of the space. At the beginning of the session on the valorisation of historical places, Giuseppe Pace, the coordinator, described the Cost Action 18110 as a model for an interdisciplinary approach to the underground built heritage and as an example of scientific and operative strategy including cultural heritage in the urban management for contemporary global societies.

The congress programme included a visit to the Christian sites in the area of the Roman Forum and to the underground spaces of the Palatine hill.

Looking over Covid-19 *[Continues from page 1]*

Some scientific issues introduced during the Naples training school, synthesis of lectures and discussions originated by workgroups are published in this issue, but we are looking forward next events as well. Deliveries scheduled in the programme are described in these next pages; some information about next events are provided. Seminars and scientific discussions are scheduled in the coming months: a blended modality will be adopted in this transitional period. The centrality of research is the most important lesson we have learned in this critical situation: now our priorities are ensuring the continuity of the activities as well as meeting scheduled deadlines, counting on the collaboration of everyone. As soon as possible, the pleasure to meet in person again and to discuss together will be greater.

Introducing a Underground4value Taxonomy

By Elisa Bellato and Giuseppe Pace

Developing a multi-disciplinary COST Action means a big effort of sharing different concepts and meanings for arriving to state a specific cross-fertilised group of definitions, which can better represent it. In our case, the underground has significance for at least three set of meanings, if we want exclude culture, politics, literature, and music. The first set is related to Heritage, the second to Geology, and the third to Planning. Without defining the context of study, it would be exceedingly difficult developing scientific approaches, methodologies, and outcomes. Therefore, some members of our network started proposing definitions, acronyms, and concepts in their presentations, papers, and articles. It is maybe time to open a common reflexion and fixing some common definitions.

The starting point is, obviously, our initial definition:

Underground Built Heritage (UBH): Three types of building activities, namely architectural, urban and landscape heritage beneath the surface of the earth, which the contemporary generation resolves have "cultural values" (U4V, 2019)

UBH is related to the following definitions:

Underground: *below the surface of the earth; below ground* (Cambridge Dict). Earth's surface is continuously evolving and is the result of the complex interactions between Earth's internal (endogenetic) and external (exogenetic) processes. Endogenetic and exogenetic interactions result in landforms and landscapes that are the product of numerous different processes, and thus are 'polygenetic' in origin (U. Kamp, L.A. Owen, in Treatise on Geomorphology, 2013) → what is over ground today could be underground tomorrow (archaeological sites)

Built Heritage: *archaeological, urban and architectural heritage* (UNESCO); *cultural buildings, historic landscapes and archaeological sites*: a quantitatively minor part of the built environment: that part which the contemporary generation resolves has "cultural values", and accordingly merits special protection from the chances of erosion, in order that it can be better enjoyed by the current generation, and passed on to the future (ICOMOS); *architectural, urban and landscape heritage,* which includes assets already listed for preservation, as well as the potential heritage that still awaits evaluation and recognition (Built Heritage, 2017) → **Built environment**: the collection of man-made structures and surfaces in the place (ICOMOS).

Built Heritage (or Cultural Built Heritage) is a sub-category of:

Cultural Heritage: *monuments* (architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of outstanding universal value from the point of view of history, art or science); *groups of buildings* (groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of outstanding universal value from the point of view of history, art or science); *sites* (works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view) (UNESCO, 1972).

Heritage: Heritage means any asset or group of assets, natural or cultural, tangible or intangible, that a community recognizes for its value as a witness to history and memory, while emphasizing the need to safeguard, to protect, to adopt, to promote and to disseminate such heritage (ICOMOS).
Important is also the need to separate tangible from intangible:

Tangible cultural heritage: physical artefacts produced, maintained and transmitted intergenerationally in a society. It includes artistic creations, built heritage such as buildings and monuments, and other physical or tangible products of human creativity that are invested with cultural significance in a society (UNESCO 2003).

Intangible cultural heritage: oral traditions and expressions, including language as a vehicle of the heritage; performing arts; social practices, rituals and festive events; knowledge and practices concerning nature and the universe; traditional craftsmanship (UNESCO 2003). Intangible cultural heritage is: 1. Traditional, contemporary and living at the same time; 2. Inclusive: we may share expressions similar to those practised by others; 3. Representative: it thrives on its basis in communities and depends on those whose knowledge of traditions, skills and customs are passed on to the rest of the community, from generation to generation, or to other communities; 4. Community-based: heritage when it is recognized as such by the communities.

To be continued….

U4V Lecture Series

1. Unstructured Data Analysis for UBH Knowledge Base

by Pinar Karagoz (Middle East Technical University, Turkey)

A knowledge base is a collection of structured and unstructured data to provide information about and to analyze a certain topic. In a knowledge base, in addition to structured data such as databases and and forms, a large amount of data is unstructured, mostly textual, in the form of documents, web sites, and social media messages. The knowlede based aimed in Cost Action18110, which is **Underground Built Heritage (UBH) knowledge base**, will include a variety of unstructured data such as descriptions of underground built heritage, surveys conducted, information collected from social media and web resources. The automated analysis of textual data provides a considerable potential for extracting the information from the content and to facilate the use of and hence to increase the effectiveness of the knowledge base.

The most basic functionality that is commonly provided on knowledge base is **keyword based search**. This functionality is familiar from popularly used web search engines. For knowledge bases, a similar keyword based searching software mechanism, yet generally in smaller scale, is installed. Another analysis type that can be complementary to keyword based search is **automated classification of the documents**. Once a classification system is defined for UBH, including classes such as *Urban UBH*, *rural UBH* or *UBH related to social interactions*, then the documents in the UBH knowledge base can be automatically annotated with such class labels. This is considered as a computational task generally solved through **Artificial Intelligence (AI) methods**. Automated classification of the documents can be augmented with similar analysis on images. Hence unstructured data of both text and image can be automatically classified and searched according to the class labels.

As another automated unstructured textual data analysis task, **sentiment analysis** (aka opinion mining) provides high potential for extracting valuable information for UBH on subjective textual content. Sentiment analysis aims to automatically detect the orientation of the subjective information from the text as **positive** and **negative**. Within UBH knowledge base context, sentiment analysis can be applied on **transcripts of the interviews** and **open-ended responses of survey**s. In addition to general subjective orientation, **sentiment polarity for particular aspects** of the topic mentioned in the text can be extracted as well. For instance, in a stackholder interview on a particular UBH asset, the opinion on economical aspect and safety aspect of the UBH could be discussed.

In addition to the overall sentiment orientation, the subjectivity value for economical and safety aspects can be automatically extracted, as well. For search engines, the trend and one of the research focus is to improve user experience for search through AI-supported interactive solutions. Hence, rather than keyword based search, a user directly type the question.

Such a user interface may enable UBH knowledge based user to drectly get answers for questions such as "In which countries are there social intection related UBH assets?", instead of keyword based search. Furthermore, such automated question answering systems can be enhanced towards chatbots to answer a series of questions or to improve the information retrieval performance.
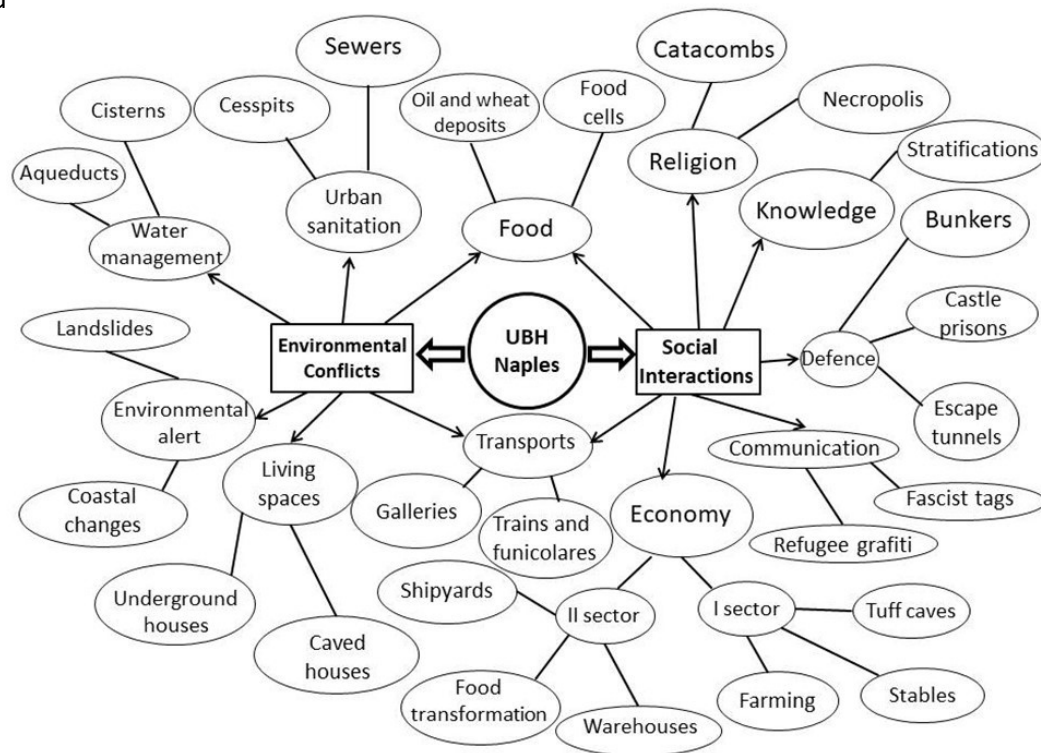
2. A Methodological Framework for UBH classification

by Roberta Varriale (ISMEd-CNR, Italy)

This presentation deals with the definition of a standardized methodological framework to be adopted in the analysis of selected case-studies, for the evaluation of ongoing valorisation plans or to address future projects regarding UBH. The cutting edge introduced in the paper, is based on several published articles on this topic by the author and involves three steps. The first concerns the definition of the class of elements identified on the basis of the historical role played by those artefacts within urban and

Starting with an analytical review of the hypotheses introduced by the speleologist Padovan (2005) and the geologist Parise (2013), related to the adoption of the pre-existent classifications for artificial cavities, the author develops a new definition for UBH. The new classification encompasses all historical artefacts realized in the underground, that have become significant elements of local material and cultural heritage with the aim to manage several urban and rural functions. Those elements, according to the given definition, detain a potential narrative regarding their historical uses that can be at the core of valorisation actions. The second step is the introduction of a chart to be adopted for the analysis of ten different functions. The third step is the definition of a RE-USE chart for the evaluation of ongoing and future projects addressed toward the valorisation of those spaces. After the introduction of the theoretical approach, the author lists and illustrates several worldwide selected case studies for each class. Finally, the paper focuses on two selected case-studies in the city of Naples: Pizzofalcone hill and Fontanelle Cemetery are described in detail.

3. Design Thinking Methodology

By Tony Cassar (University of Malta , Malta)

Innovation is recognized as one of the principal driving forces behind growth. Countries that embrace innovation usually fare much better than ones which do not (Grossman & Helpman, 1991). Museums are looking at innovation as the key to help them adapting to major changes affecting the cultural heritage sector. The three main forms of innovation happening in museums are: 1. Technological innovation in museum-visitor experiences; 2. Museum management, and 3. Organizational innovation (Vicente, Camare-ro, Garrido, 2012). Innovation is fueled by the insights gained through the understanding achieved from observation of what visitors want and need.
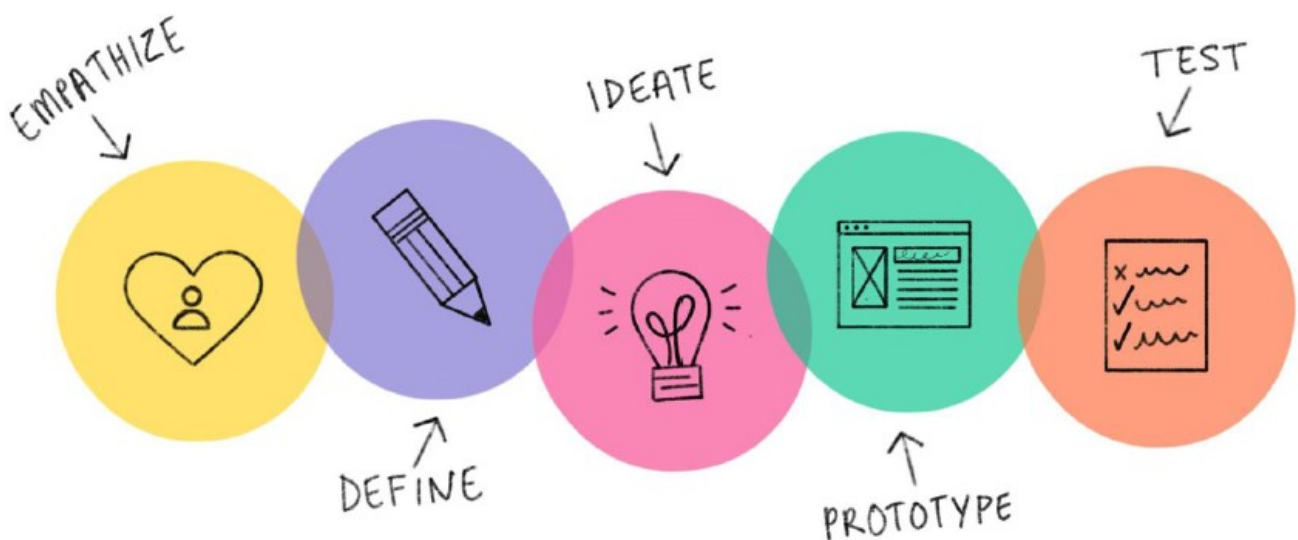
Design Thinking, described as a methodology, a culture and even a philosophy is a system that insures all forms of innovation activities are inspired by a human-centered focus (Brown, 2008). It is an approach that uses creative problem-solving as a driving force for human-centered innovation (Kelley & Kelley, 2013). John E. Arnold was one of the first authors to write about "Design Thinking". In his "Creative Engineering" seminars at Standford University, he identifies four particular outcomes of design thinking. These include: Novel functionality" relating to innovative solutions for old problems or solutions for new needs, improved solution performance levels, reduced production costs and improved profitability (Clancey, 2016).

The earliest education teaching research institutes about Design Thinking was introduced in 2005 at Stanford University, the Hasso Plattner Institute of Design, which is commonly known as the d.school. In "Theoretical Foundations of Design Thinking" (von Thienen, Clancey, Corazza, & Meinel, 2018) one finds an overview of the historical development of Stanford University's design thinking programs starting from the first innovation curricula of creative thinking, visual thinking and ambidextrous thinking that shaped today's Design Thinking methodology.

Design thinking is spreading world wide in many different sectors that require innovation. More educational institutions, appreciating the positive benefits of this methodology, are implementing it in their curricula with their own design thinking schools, following the University of Stanford and Potsdam's d.schools. Design Thinking revolutionizes the way people, companies and organizations look at innovation. The process of innovation becomes truly dynamic, continual, reflective, detectable and most importantly human centered. Those organizations that adopt design thinking as fundamen-

tal catalyst of their innovation process will be able to sustainably and continuously design completely new processes, services and products (Plattner, Meinel, & Leifer, 2012) .

Design Thinking for Museums

In the last decade, museums have also started using design thinking to help them innovate the way they manage themselves and communicate their collections to visitors. In fact the process of design thinking can literally be applied to any settling, challenge or problem within the museum. Design thinking helps museum to see issues as challenges that can be tackled and solved rather than just problems. There are five main steps in the Design Thinking model proposed by d.school of the Hasso-Plattner Institute of Design at Stanford University. These are Empathize, Define, Ideate, Prototype and Test.

Phase 1: Empathize

The design think process starts with gaining an empathic understanding or the issue or problem that needs solving. In a human-centered design approach such as that being proposed by Design Thinking, empathy takes a central and very important role. Empathy allows designers to set aside their personal assumptions and understand or feel what the other person is going through. Empathy is crucial in obtaining a valuable insight into the museum visitors' profile, needs and underlying problems that need to be addressed.

Phase 2: Define

Identifying the challenge is often one of the most important steps in the whole process. During this stage, all the information and insight collected in the first stage (Empathy) is analyzed and synthesized to be able to define the core problem that needs to be addressed. The problem needs to be clearly defined from a human-centered point of view rather than simply from the museum's point of view. This stage will help designers to collect idea on how to create features and functions that will allow them to target and solve the problem.

Phase 3: Ideate

By this stage the designer has understood the users and their needs in the Empathize stage, analyzed these observations in the Define stage and based on this information ready to start coming up with ideas to solves the issues in question. There are many approaches and techniques to deal with the ideation stage. The ideation phase will allow the designer to shift through all the identified ideas to find the ones which best solve the problem at hand.

Phase 4: Prototype

Prototyping involves the creation of an early sample which is inexpensive simplified versions of the service or product to be able to test the concept or identified solution. This prototype would allow users both from within the museum but also from outside to test and evaluate the proposed solution. This stage will help the designers to have a clearer view of how users would react to the solution being proposed. Prototyping offers many disvantages to designers hese include the possibility to make practically same time changes and test new iterations which takes us to the next stage.

Post 5: Test

Prototyping will allow Designers to meticulously test the final solution based on the solutions identified in the prototyping phase. Although this is considered as the final stage one would also see a loop between the last stage and previous stages until the testing is successfully completed. This is because results from the testing phase are then used to fine-tune the proposed solution and prototype in phase 4. Prototyping and testing re very powerful tools for museum and used well will save the museum from very expensive mistakes and encourage innovation.

The Design Thinking Process is not a linear one and the five different stages are not always sequential, the different stages may sometimes occur in parallel or be repeated iteratively. Rather then sequential steps each phase must be understood as a component or node that contribute to a successful development process of innovative problem solving design. Each museum design project will be different but the Design Thinking process identifies the 5 different stages of development that need to be carried out.

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4. The construction of meaning: an historical perspective

by Renata Salvarani (European University of Rome, Italy)

Body, rite and city are interacting elements in order to create a syntax of meaning into a community. They generate a living symbolic space that mirrors and influences mental images, behaviours of individuals and groups, ideas and models. At the same time, they are also the points of a debate that, during the last fifty years, have interwoven different lines of analysis now composed in a problematic way in the context of Historical and Religious Studies and in the debate around new forms of social cohesion.

The same interpretative and methodological tools can found cultural valorisation's strategies based on historical coherence links and on a community vision of the society inspired by values of cohesion, inclusion and positive dynamism.

The body, considered a hub of cultural signification, is the fulcrum of any discourse about space and spatial interactions. As place of experience and conscience, the body is both a constitutively open space, and as a border permeable to pain, pulses, sensations, stimuli. It is the boundary limit of the self and a contact area, an interpenetration with the outside world and with others. At the same time it is presence, force, organic consistency. In the act of staying, just existing, it marks, fixes, determines. His movement, when it is perceived and acted as a gesture, has a creative power: it gives life to reality, displays, performs and, what's more, makes it present.

The word "liturgy" can be used not only in a strictly religious way, but also with a large meaning, as system of symbolical gestures giving a sense to a group or a space, as a codified community experience creating a specific meaning or marking an identity and a belonging.

A definition of space borrowed from Henri Lefebvre focuses on the human being, who perceives the world and gives sense and meaning to things. By doing so he builds an interpretative narrative interspersed with topological interrelations, distances, hierarchies between places.

Three terms, body, liturgy and city mutually interact, giving life to a cultural syntax based on the experience, specifically on the religious and identity one. The genesis of a sacred symbolic space is dynamic, open to changes and overlapping meanings. Its centuries-long development is rooted into liturgical actions and devotional paths, both centred around the body, considered as an actor of change and, at the same time, a subject open to transformations, even at a neuro-perceptual level.

Contemporary global cities are both places of coexistence and spaces of creation and re-creation of meaning.

The great migrations and the emergence of multicultural society unfold their effects in creative, open and problematic ways: generating deep changes, originating identity and religious conflicts, or composing new processes of integration. This latter kind of transformations involves directly also sacred and sacralised spaces, rites and gestures, considered as chances to build, to deconstruct and re-build meanings. Acts of semantisation and re-semantisation impact on shared memories, open identities, forms of identity and cultural belongings including their differences, but composing them in a common higher belonging. Similar processes are evident also in the past. Today migrations, overlapping and re-placement of different populations can be associated with new establishing of symbolic codes in a perspective of coexistence. This process of building of meaning, oriented by common shared values, passes also trough the valorisation of cultural heritage.

Therefore the study of the space's implications appears more and more relevant: a reading key for a cultural discourse. On the side of valorisation, these processes and the key concepts which they are based on, are crucial to overview contemporary uses and reuses of Cultural Heritage, considered as an active element of our global society.
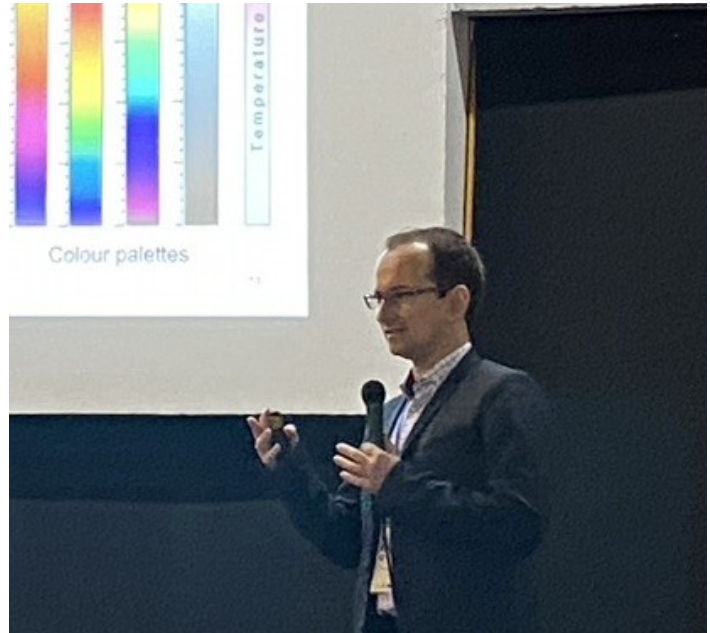

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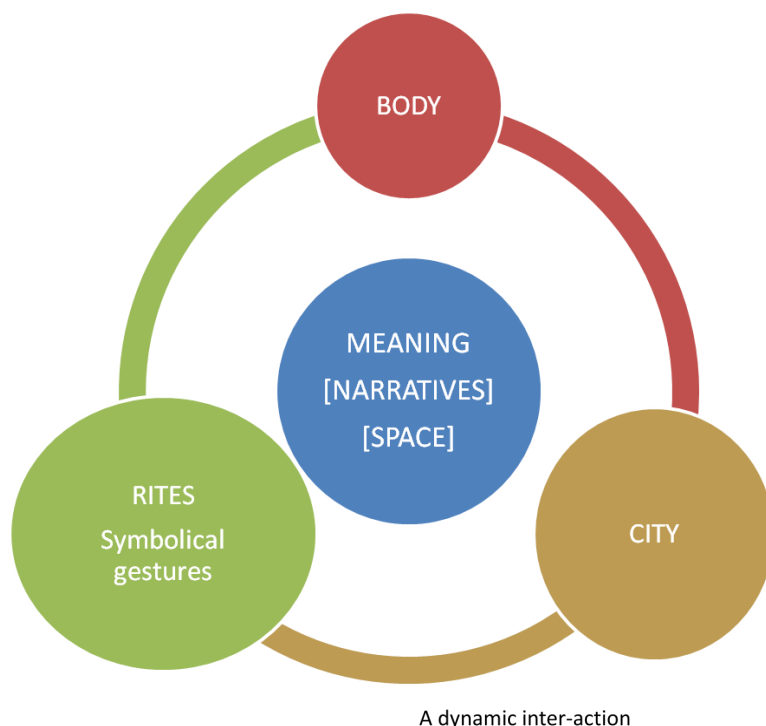
REFERENCES: Salvarani, Renata (2019), The body, the liturgy and the city. Shaping and Transforming Public Urban Spaces in Medieval Christianity (Eighth-Fourteenth Centuries). Venezia: Ca' Foscari University press, https://edizionicafoscari.unive.it/libri/978-88-6969-365-6/; Hulsen, Christian (2018), The Roman Forum and its monuments. Glasgow: Sagwan Press; Kalas, Gregor (2015), The Restoration of the Roman Forum in Late Antiquity: Transforming Public Space. University of Texas Press. JSTOR, www.jstor.org/stable/10.7560/760783. Accessed 7 Feb. 2020; Ficacci, Stefania (2016), "Tor Pignattara nella "lunga durata" contemporanea. Le identità multiple di un quartiere popolare romano". In: Dimensioni e problemi della ricerca storica, n.2, pp. 139-156; Ficacci, Stefania (2017), "Le fonti orali come metodologia di ricerca per la ricostruzione di un patrimonio culturale comunitario. Il case-study dell'Ecomuseo Casilino a Tor Pignattara". In: Proposte e ricerche, anno IL, n. 78, pp. 87-100; Greco, Cristina–Mari, Elia Cornelio (2016), "Spazi ibridi e riscritture urbane. Il caso MAAM - Museo dell'Altro e dell'Altrove di Metropoliz_città meticcia". In: Street art and its languages, "Interartive n.87", ottobre 2016, pp. 1-10.

5. Infrared thermal imaging – principles and applications for civil engineering inspection

by Robert Olbrycht (Lodz University of Technology , Poland)

Infrared thermal imaging is a technique for acquiring images in the infrared spectral range. It is well-established in many branches of the industry and science. Civil engineering inspection is one of the fields, where thermal imaging cameras are commonly used. Inspection of buildings' thermal insulation is one of the common applications in this domain. Another one is visualisation of subsurface features thanks to the solar loading or heat excitation coming from another source. Thermal images can bring valuable information about the inspected objects, however, one needs to interpret this information correctly. This chapter is an introduction to physical principles of infrared thermal imaging. One of the most important factors for thermal imaging is emissivity, which affects not only the amount of emitted but also reflected radiation, assuming that the surface is not transparent. There are examples presented in this chapter, showing potential applications of infrared thermal imaging in inspection of modern and historic interiors and exteriors, with comments on interpretation of the results.

6. Assessment of Design Characteristics of UBH Sites from Engineering Perspective

by Kerim Aydiner (Karadeniz Technical University, Turkey)

UBH openings constructed in rock can generally be accepted as designed without any sound engineering concept. However, some openings have been standing for centuries. After a preliminary evaluation it can be said that these openings were constructed not ignoring some basic principles used in the design of underground openings. Although the selection of the opening dimensions and cross sections has not been done with a very professional approach, it is compatible with the basic opening design principles. This study examines the engineering design features of well-known UBH openings formed in the rock. In addition to dimensional properties of openings material properties of rock environment and the location and orientation of the openings are analyzed. Potential threats for these threats are also discussed for the future. Conditions that could create a threat to these sites in the future are also evaluated.

# 7. Use of Innovative Slam Solution for UBH fast acquisition

by Roberto Pierdicca (Università Politecnica delle Marche, Italy)

Surveying is the starting point for every project in which the knowledge of a certain site is required. Management, conservation, restoration, documentation, just to mention some. Three-dimensional (3D) digitization of Cultural Heritage (CH) sites have increased remarkably in recent years. Such method consists on the acquisition of billions of points (Point Clouds) allowing a very accurate virtual reconstruction of sites or buildings. The growing availability of novel and affordable surveying techniques made possible the data collection of a wide variety of objects. Among the well-known, and widely adopted, acquisition tools like Photogrammetry or Terrestrial Laser Scanner, Mobile Mapping Systems (MMS) are promising, since they allow the collection of huge amounts of data, reducing time and with sufficient accuracy. MMS rely on Simultaneous Localization and Mapping (SLAM), visual Odometry, GeoSLAM and the main advantage is that data can be collected very easily, without the need of post-processing procedures. In other world, their use is very agile, since they not need registration; their relative geo-referencing is made automatically by the tool itself, when the operator walks along his path. In the context of UBH, MMS could provide a fundamental aid for documentation and surveying. UBH environments in fact, are very challenging to be surveyed, for several reasons: spaces are narrow, illumination is scarce, geometries are irregular, and the distribution of spaces is irregular as well. The adoption of State of Art solutions, albeit more precise, would represent a bottleneck, especially due to the above-mentioned complexities of UBH environments. Emerged thus the necessity to assess novel methods to perform fast and agile acquisition campaigns, providing restorers and public administrations with efficient solution to document our valuable Underground CH. U4V Cost Action will be the playground where such methods will be experimented, to assess and validate MMS for Underground Heritage.

SLAM - Simultaneously Localization And Mapping
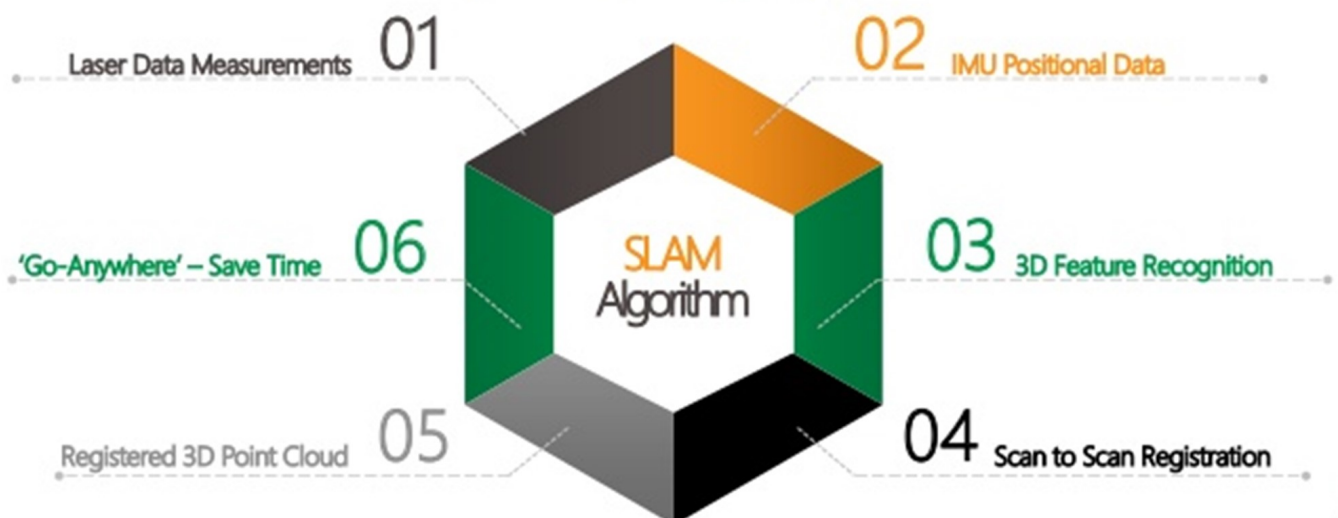
8. Underground Heritage Prehistory to 20th century. Management and valorisation

*By Shirley Cefai (University of Malta, Malta)*

The presentation dealt with the evolution of conservation in the 20th century and how the vision of conservation was developed in such a way that both values and society are more intrinsic to the way conservation decisions are taken.

The definition of what was considered worth preserving in the beginning of the 20th century was the individual monument. Over the 20th century this definition morphed into considering cultural heritage not only as tangible heritage but intangible heritage were incorporated in what was considered worth conservation to be passed on to future generations. This wider definition of what is to be conserved is also mirrored in the way the definition of authenticity changed in the end of the 20th century and the beginning of the 21st century. Authenticity in the end of the 20th century was no longer only linked to material authenticity but included also the authenticity of the experience of space and form which is the result of the Asian influence on how authenticity is defined.

The presentation leads to the need of a statement of significance which is customary carried out to help in the decision making process.

The case studies are typical examples of the varied underground heritage which exists in Malta – from prehistory to the 20th century.
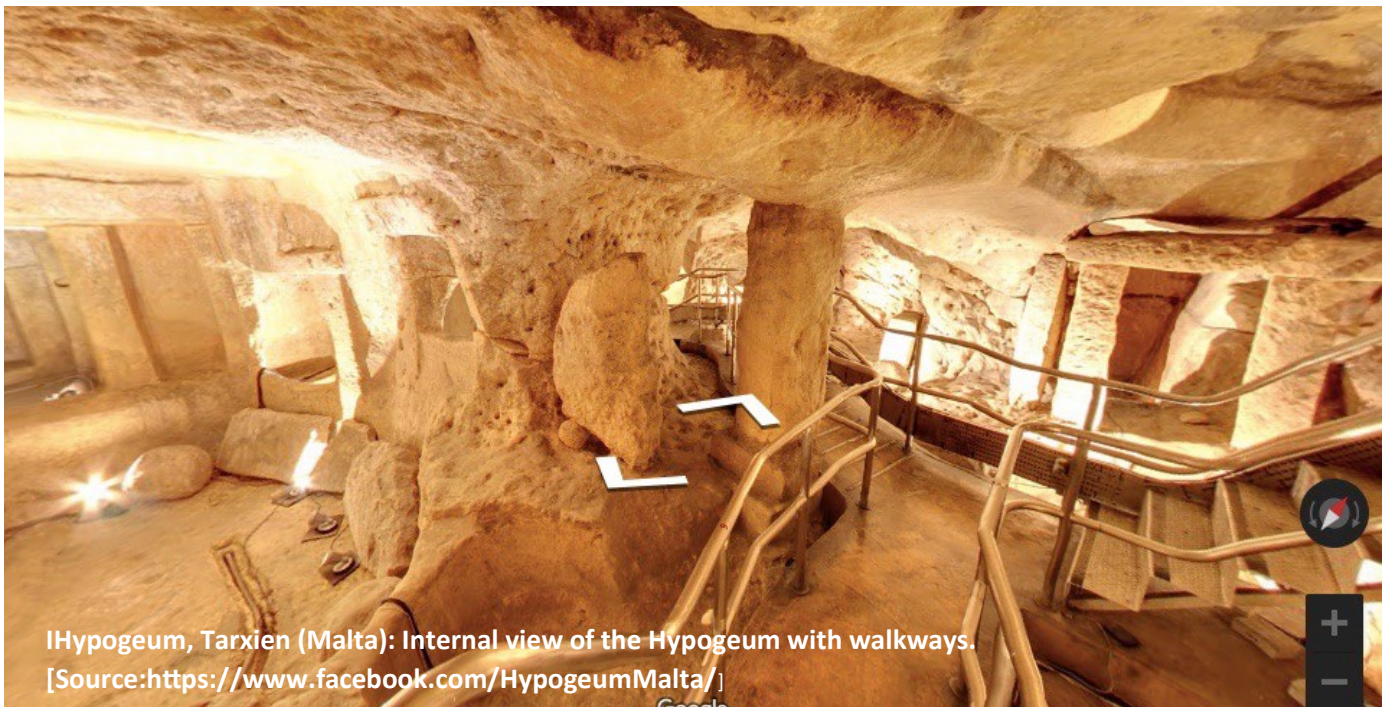
IHypogeum, Tarxien (Malta): Internal view of the Hypogeum with walkways.
[Source:https://www.facebook.com/HypogeumMalta/]

9. Strategies in hazard zones: a case in central Italy

By Antonello Alici (Università Politecnica delle Marche, Italy)
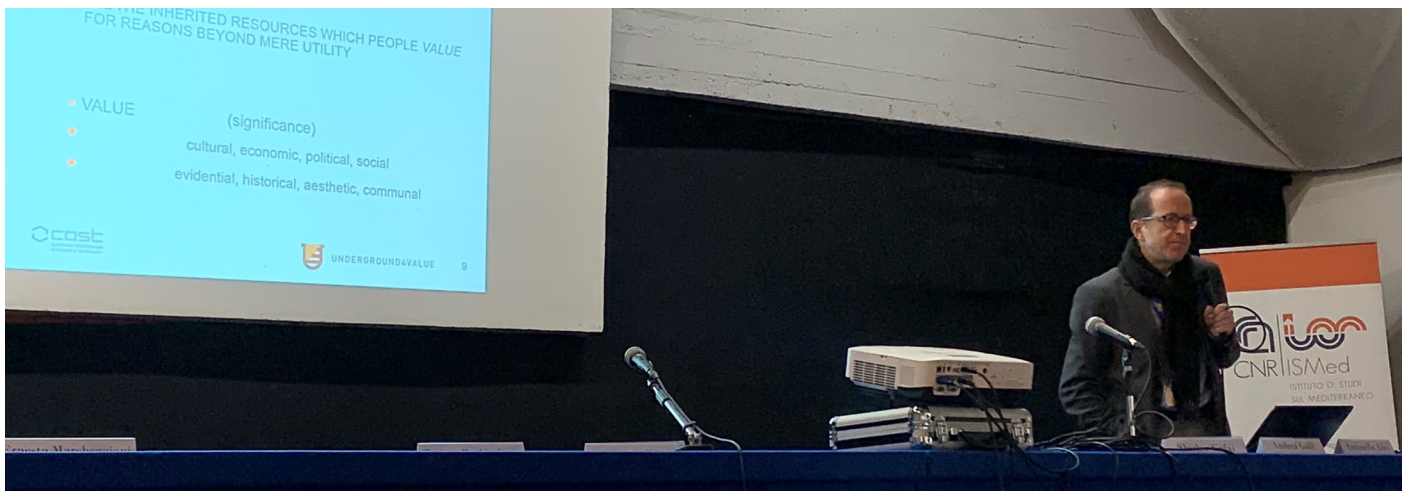
My contribution in the section 'Strategies for Underground Built Heritage reuse and valorisation' opens with the definition of 'cultural heritage' and with a focus on the history of this term in the European culture as well as with the role played by the International Charters. The pioneering experience of the British culture, due to the campaigns by William Morris that in 1877 founded the Society for the Protection of Ancient Buildings (SPAB), has evolved into the leading role of the Historic Buildings and Monuments Commission for England (Historic England). They published very useful guidelines for recognition, protection and conservation of cultural heritage. An important action towards a wider awareness of the value of the heritage was in 2018, when the Council of Europe launched the campaign 'European Heritage Days' aimed at 'promoting *diversity* and *dialogue* through access to heritage to foster a sense of *identity*, *collective memory* and *mutual understanding* within and between *communities*'. The action following the assessment of the value of a place is its 'conservation', intended as the process of managing change in way that will best sustain its heritage values. To 'sustain' embraces both 'preservation' and 'enhancement' to the extent that the values of a place allow. Such a delicate process of understanding the limits of the changes in a significant place should be a shared responsibility of the scientific community and of the decision makers together with the citizens. The concept of the 'Historic Urban Landscape' (HUL) is central in

this process. As Jukka Jokilehto wrote, HUL – which had its origin in the international conference of Vienna in 2005, calls for a systematic approach to an 'urban area understood as the result of a historic layering of cultural and natural values and attributes'. The above concepts and strategies are the base of an ongoing experience of Università Politecnica delle Marche in the Apennine areas in Central Italy, affected by recurrent earthquakes, the last in 2016-2017. The earthquake, shaking a large area in the territories of four regions, has revealed the weakness of our heritage. The loss is not only physical but mainly human and social. The immediate question is why such dangerous territories should be still inhabited, why not move the villages in more safe places. The answer is evident: these places preserve an immense value for their historical layered history. Our answer to those questions lays in the title of our research project : 'Living with earthquakes', an interdisciplinary research and educational project for a larger scale strategy for the prevention of future damages. The project has been the base for a summer school in the Province of Fermo, south of Marches region. The chosen area is characterised by a really rich landscape, raising from the sea to hills and mountains, pointed by towns and villages on the top of the hills. Each place has a unique urban pattern woven into the forms of the territory and to the colours of the geology. The notion of 'Historic Urban Landscape' is perfectly matching to it.

10. Valorisation of rural heritage and benefits to local community
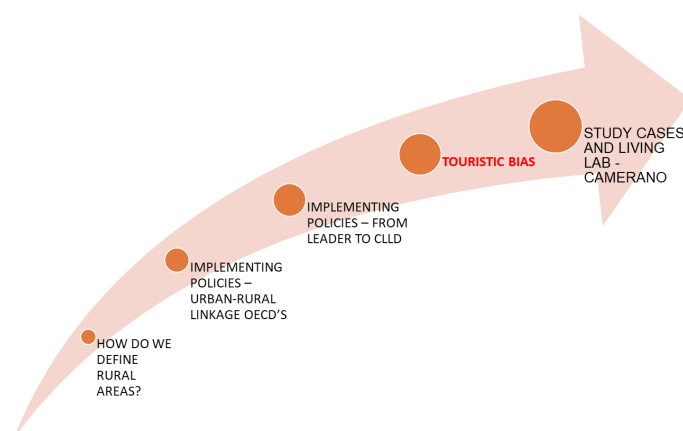
By Ernesto Marcheggiani, Andrea Galli (Università Politecnica delle Marche), Ilaria Fioretti, Marco de Seris (Camerano Municipality)

Our contribution to the first training school in Naples aimed at encouraging trainees to reflect on the overtones entailed into the close relationship between local communities and the places of their daily life. In other words, their surrounding landscape. At the cutting edge of the debate on the sustainable transition towards more sustainable living standards for the local communities, we have put the attention on the enhancement of the local heritage.
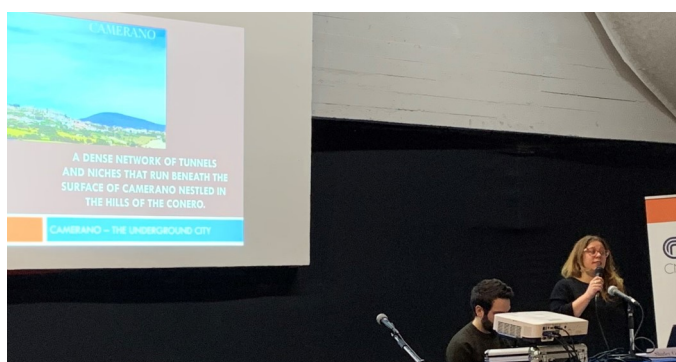
Quite apart from the need to raise trainees awareness on the critical of concepts entailed in the scientific debate (the landscape as a whole, the European Landscape Convention or Florence Convention 2000, the historical evolution of sectoral policies and the critical EU programmes). We focused primarily on the rural and mar-

ginal territories, being these latter the natural place for small local communities.

As well as a key target for the overall Cost Action. And given the peculiar nature of the present cost action, the audience could listen to a first-hand account from a delegate of the local authority of a study case in Central Italy, The Camerano's caves. Exposing the trainees to a direct testimony on a site which has proven to be a suitable candidate to blow life for a living lab into the local community since the beginning, was of great interest in our opinion.

 The small town name comes from "Camburàn" (cave, room) or "Cambre" (tunnel), testifying the close link between the underground heritage and the local populations.

11. Creative tourism as a strategy for the UBH promotion

By Álvaro Dias (Universidade Lusófona and ISCTE, Lisbon, Portugal)

This article aims presenting a framework to increase the competitiveness of a underground heritage site competitiveness. Considering that a business model consists of a plan for the successful operation of a business, establishing the value proposition and identifying sources of revenue, the intended customer base, products, and details of financing. Figure 1 shows a useful model named Canvas Business Model.
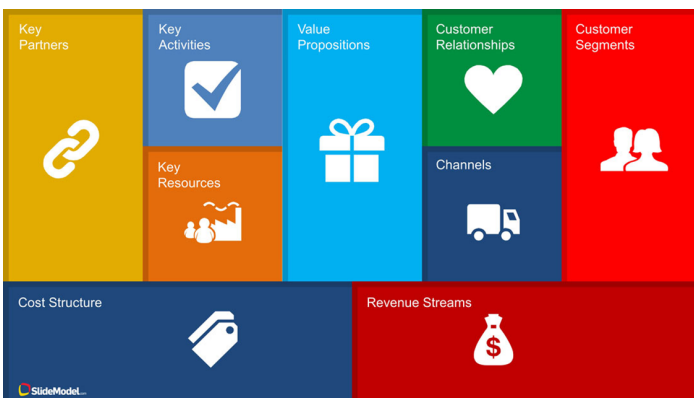

The central dimension is the value proposition defining how companies differentiate themselves from competitors. On the right side are the activities need to reach the market and on the right side the resources, partnerships and organizational activities that support the value proposition. The lower part consists on budgeting. Considering the definition of the value proposition an underground heritage site must think about the differentiation arguments. Today, competitive parity is too common, and cultural heritage is commoditized into experience modules in the form of museums, festivals, or tours. Creativity is one path to differentiation, and has become one of the essential elements for the transformation of traditional cultural tourism into creative tourism.

Creative tourism can be defined as the travel directed toward an engaged and authentic experience, with participative learning in the arts, heritage, or special character of a place, providing a connection with those who reside and create this living culture (UNESCO, 2006). Adding value experiences should include: (i) Creativity in its relationship with the cultural and human elements; (ii) Differentiated experience should rely on the cultural environment of that specific place; (iii) Co-creation of innovative products, through a heritage and creative artistic conjugation.
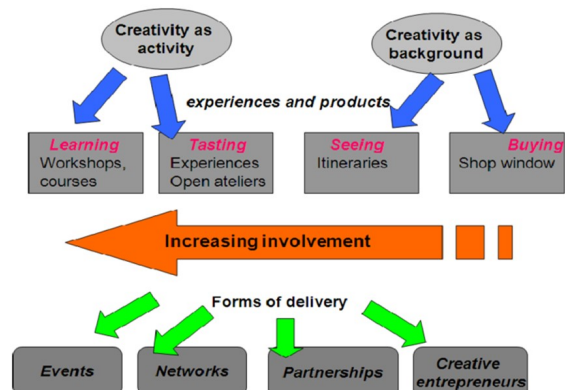
REFERENCES: UNESCO (2006). Towards Sustainable Strategies for Creative Tourism. Retrieved on Mars 23rd 2020 at https://unesdoc.unesco.org/ark:/48223/pf0000159811

12. Co-creation and Inclusiveness of Public Spaces with Heritage: Case studies from UK and Greece

By Tatiana Ruchinskaya (J T Environmental Consultants Ltd, TVR Design, Cambridge, UK)

This essay is based on the presentation for the Underground4value Training School, organised by the COST Action CA18110 in Naples (Italy).

Social construction of public places with heritage is referred to the active process of connecting communities and relating them to locations in order to make places meaningful for their lives. In this Essay the author is providing an opinion that valorisation of public places with heritage should capitalise not only on their identity and distinctiveness but also the social functions of the place, with inclusiveness as a main function. It is proposed that the inclusive opportunities in public places can be facilitated by employing co-creative practices. It highlights that co-creation is a tool to create a new public value and to contribute to more inclusive decision-making, bringing new voices and issues into the public arena and building a stronger sense of community ownership to the public place. This Essay provides a short overview of co-creation tasks in the context of public place with heritage and describes a related Case Studies from UK and Greece. The Case Studies describe how employing co-creation practices facilitate the inclusive opportunities in each project. The Essay presents challenges of implementing effective co-creation including time, space and costs required to effectively engage stakeholder groups and to create accessible representations for participation and engagement. This Essay analyses types of avail-

Focus on Identity and Diversity

How should heritage decisions be made? Increasing participation from where you are → **Appropriation & Identification by different communities.**

able digital tools for co-creation which support either the whole process of co-creation of public spaces or its specific activities. It argues that digital tools provide logistics to the co-creation process and can be useful to overcome challenges of co-creation, facilitating inclusiveness of public spaces and connecting people, places and local history.
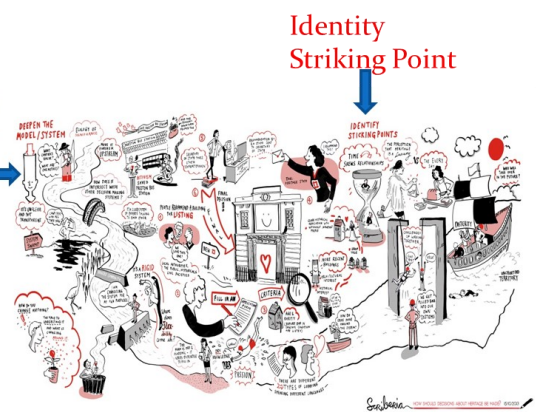

How should decisions about heritage be made?

Manchester workshop to explore a 'systemic' approach to heritage decision making

- To create a hub for wider public democratic engagement in current issues facing York.
- Use the idea of local democracy as a living tradition to develop a visitor experience

Identity Striking Point

Deepen model

13. Informal Planning Approaches in Activating UBH

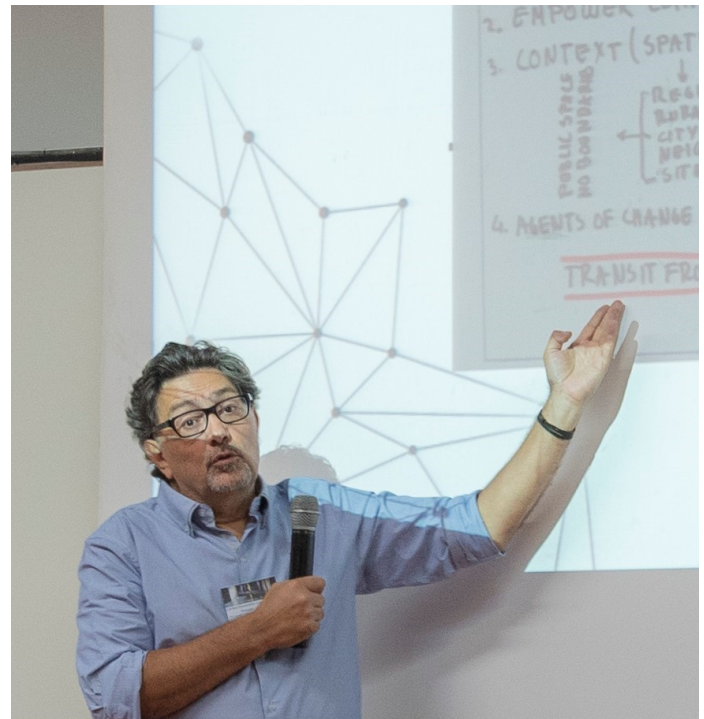*By Carlos Smaniotto Costa (Universidade Lusófona, Lisbon, Portugal)*

As a landscape architect and urban designer my research interests are spatial transformation of urban spaces - in particular of ecological systems and open public spaces; places that spots nature in cities and where the public life takes place.

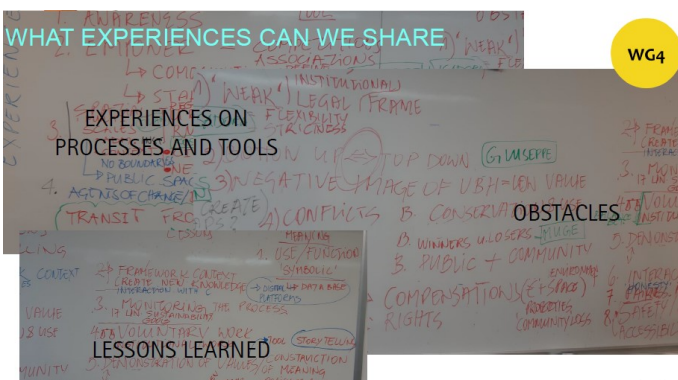The Underground Build Heritage (UBH) introduces the
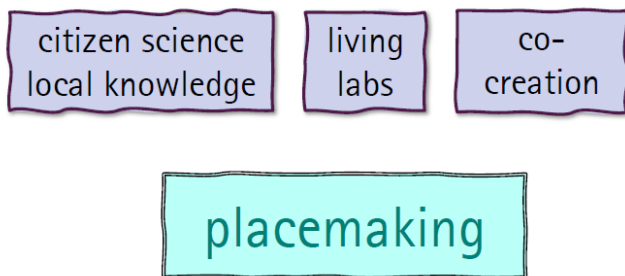
aspect of heritage - a unique but in many cases not valued asset. This is especially true for underground build heritage. Activating UBH, in the sense of managing its transformation from a hidden/forgotten place to a valued asset, raises the challenge how to design and guide the transition.

Such transformation requires in turn a reflection on suitable approaches to initiate and establish a stable take-off process, one that is simple, effective, flexible and open to accommodate correctional changes.

To tackle both, ecosystems and public spaces, in a holistic and sustainable way, there are some recognised key approaches which have such characteristics, and additionally are able to generate innovative outcomes. I refer to informal approaches, such as citizen science and local knowledge, living labs, investigative participation and co-creation. More than being buzzwords, these approaches have proved to be effective in placemaking, and placemaking is what one seeks when it comes to activating UBH. Placemaking means transforming a space into a meaningful place by capitalising the local assets and the community.

Placemaking has the potential to re-engineer processes, lower costs and enrich the experiences. And this is the aim of this contribution, to address informal approaches that can be put in place to establish a take-off process and aid a sustainable development, considering also the digital advancements and culture change. Indeed, the top challenge to achieving sustainable goals is the management of changes. Informal planning approaches are also useful in managing changes.

14. Partnerships and community empowerment Tools for Living Labs

By Giuseppe Pace (ISMed– CNR, Italy)

Nowadays, new heritage-led approaches demand for establishing community participation and collaboration. However, participation does not guarantee development and sustainability, nor does it automatically lead to either community involvement or local development. The success/impact of participation, especially in terms of community empowerment, is critically dependent on the processes followed during its establishment and implementation. This paper introduces the concept of partnership, such as a dynamic and complementary relationship between diverse actors, where benefits are achieved by working together rather than alone. Compared to the cooperation concept, whereas stakeholders participate in decision-making by exchanging information or resources and supporting one another in a relationship dependent on individual rather than collective efforts, the partnership involves diverse stakeholders collaborating as a group to achieve a common goal while sharing "mutual responsibility for their joint endeavour" (Austen & Baldwin, 1991). Partners collaborate

Informing	Consulting	Cooperating	Partnering	Empowering
Providing stakeholders with adequate information to enable them to make decisions and take action.	Obtaining feedback from stakeholders in order to make decisions and take action.	Involving stakeholders in decision-making processes and development of activities.	Collaborating with stakeholders to ensure that decisions and activities are appropriate.	Decision-making and activities initiated and undertaken by stakeholders.

Passive → Stronger commitments / More interdependence / Greater risks and rewards / More specific deliverables / More horizontal accountabilities → Active
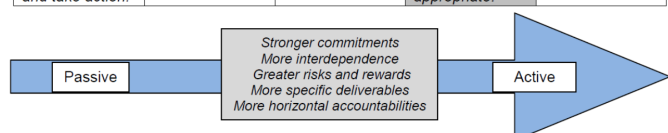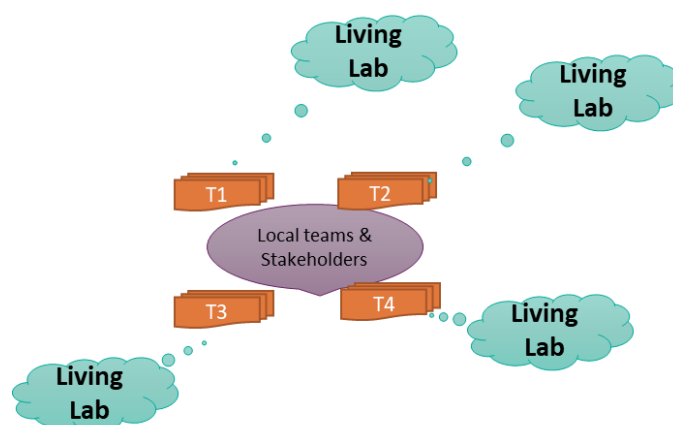
Table 1: Degrees of stakeholder participation
Source: Adapted from Caplan & Stott (2008), INBAS GmbH & ENGENDER asbl (2010a), Johnson (2013) and PPS (2007)

in decision-making processes and the ownership of outcomes, enhancing democratic governance by ensuring that public sector decisions are relevant and effective. The presentation introduces the Recommendation on the Historic Urban Landscape (HUL) and its suggested tools: a) Knowledge and planning tools; b) Civic engage-

ment tools; c) Financial tools; d) Regulatory systems. Starting from the HUL, it describes an innovative approach for partnering communities and integrating UBH values and their vulnerability status into a wider framework of local development. The process where 'partnerships' put in place sustainable mechanisms to realise and manage the 'place' product is called Place Management, which demands for an innovative approach of community engagement. In general, to be effective a Place Management program must have: a) a

plan and a vision that enjoys the support and commitment of all stakeholders; b) clearly defined roles and scope prior to the engagement of the manager; c) position, credibility, respect and authority. As all places are different, the Place Management needs to be tailored to reflect the specific scale, status, role, and resources of the place. Finally, the paper describes two management tools, the Strategic Stakeholders' dialogue (SSD) and the Transition management (TM), and how they could be integrated in a single integrated approach, The Strategic Transition Management (STM), based on local communities' experiments and empowerment and a multi-level strategic dialogue. STM promotes a local community's positive evolution, building capacity in the involved regions, among public bodies, communities, private companies, practitioners, academics and any other stakeholder. STM should be developed and experimented in protected places, the Living Labs, and then promoted to external landscapes. The presentation provides a scheme for developing Living Labs for the UBH valorisation, where to encourage new forms of collaboration of key actors and to develop a more favourable environment for culture, talent, entrepreneurship, creativity and innovation. The scheme considers four phases. A first, preparatory, where the UBH is studied and analysed and stakeholder mapped. The Start-up phase, dealing with the Living lab establishment and organization, is followed by the Operational phase, where the knowledge is deepened and becomes interactive, new technologies for UBH conservation and monitoring experimented and applied, and developed Business and Management Models for public/private built heritage. Finally, there is a Reflexive phase with storytelling and assessment. This process activates a continuous reflexive learning cycle between experiments and innovations (learning-by-doing). The acquired knowledge, then, empowers the pioneering community, which develops long-term strategic visions and goals (doing-by-learning), at the heart of Sustainable Development. It could generate positive and self-sustaining 'natural' interdependencies, a place of identity and attractiveness, and activate a favourable environment from both social and economic point of view.

1) Preparatory Phase

1. **Study and analysis of the selected topic (2 months)**
   a. Historical framework and selected bibliography
   b. Ecological framework
   c. Social analysis
   d. Territorial and regulatory framework
   e. Legal framework

Creating a knowledge base and developing local culture

2. **Stakeholders mapping (1 month)**
   a. Institutional stakeholders
   b. Not institutional
   c. Other stakeholders (by interviews)

Defining a potential partnership, work with TM for empowering stakeholders

2) Start-up Phase

3. **Living lab establishment and organisation (3 months)**
   a. Goals definition
   b. Approach and rules structure and sharing
   c. Stakeholders empowerment and leaders choice
   d. Meetings' plan and organisation

Organising the partnership, with specific aims, objectives and governance procedures

3) Operational Phase

4. **Deepening the knowledge (interviews and assessments)**
   a. UBH Classifications
   b. Oral and written narratives
   c. Comparison with similar cases

Linking UBH to local identity and to global community

5. **New technologies for UBH conservation and monitoring**
   a. Technological topic defined and analised
   b. Expert network knowledge exchange and decision-making support (webinar)
   c. Comparison with local solutions

Providing technical support and stimulating local creativity

6. **Business and Management Models for public/private built heritage**
   a. Definition of the context
   b. Models' selection
   c. Possible alternatives

Supporting partnership to be sustainable

4) Reflexive Phase

7. **Living Lab's Storytelling (STSM e network, 3 months)**
   a. Screenplay writing
   b. Materials collection (video, audio, photo, etc..)
   c. Production
   d. Post Production and finalisation
   e. Collective event

Developing sense of belonging and providing a positive attitude towards partnership

8. **Living Lab evaluation and learning (STSM and Host Institution, 1 months)**
   a. Questions evaluation and standardisation (WGs)
   b. Indicators (WGs)
   c. Evaluation (STSM)
   d. Report (STSM)

Supporting local and global collective learning
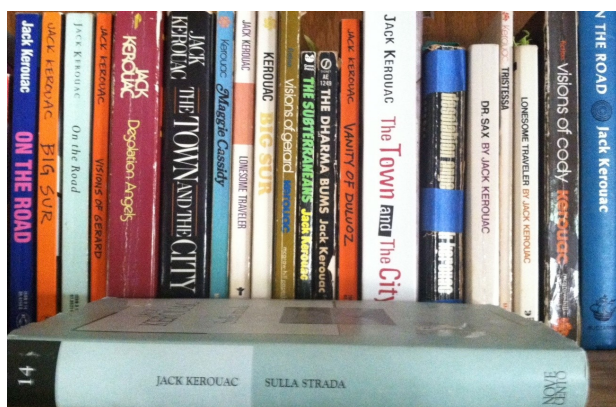
Underground in literature
Images, texts, suggestions

by Giuseppe Pace

The concept of Underground goes beyond its physical and territorial meanings. It is deeply rooted in the humankind, in its philosophical and cultural evolution, in art and collective imaginary. In literature, the first relevant underground for the western imaginary is certainly the Plato's cave, as described in the VII book of the Republic, a fictive world that the dull senses of men perceive as authentic. The underground becomes the prison of the intellect, from which only the wisdom of the philosopher can free the individual. This negative vision of the Underground evolves and changes to positive in the modern age, where "…occult, hidden, deep places, whether geographically determined or peripheral and inaccessible areas of the mind" (Bombara, 2018) become the sites that welcome life, authentic also if squalid, painful, oppressive. The world above, limited by law and convenience imposed by society or by ourselves, develops in a space destined for the wayward perception and consciousness. On the contrary, the Underground symbolises the irrational, the shapeless with all its chaotic, uncontrolled, cynical, resentful spontaneity. In literature, the representations of the Underground become icons of modernity and freedom, as a rejection of essential rules, of a depth not only topological but of thought (Bombara, 2018).

In his Memories of the Underground, Dostoevsky remarks that the authentic man of the contemporary age is precisely the one who chooses to live below the surface, avoiding contact with others and taking refuge in solitude (Dostoevsky, 1864). As a place of identity, the Underground is a potentially infinite theme. It is real and virtual place: hell, unconscious, turned image of ourselves. In the modern era, the Underground becomes an extension of the contemporary city above, which is a place of contradictions, from the one side expressing the highest degree of civilization, but on the other side producing an unspeakable lowness, deviating from the law, breaking the morality, and gathering disinherited, marginalized, rebellious masses. In that sense, the underground city appears the authentic core of the city, an expression of the real and vital essence of its inhabitants.

With his ruins, caves, foundations, alleys, hypogea, Naples could be considered the city/Aleph. It seem to contain every aspect of humanity, from the sublime to the miserable, and its underground inspired writers, from Strabo, Virgilio to Pasolini, La Capria and contemporary (Lucia, 2018)

This short repository on the literature on the underground does not pretend to be comprehensive but only stimulating a further reading on the Underground.

Giacomo Leopardi (1827), Small Moral Works (Italian: Operette morali), Italy

Fyodor Dostoevsky (1864), Notes from Underground (Original title "Çàïèñêè èçú ïîäïîëüÿ"), Russia

Eugène Sue (1842/1843), Les Mystères de Paris, Paris

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Jules Verne (1877), *The Underground City* (Extraordinary Voyages #16), France

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Jack Kerouac (1964), *The Subterraneans*, Grove Press, US

Italo Calvino (1972), *Invisible Cities* (Italian: *Le città invisibili*), Giulio Einaudi Editore, Turin.

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Mick Jackson (1997), *The Underground Man*, Faber & Faber, UK

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Colson Whitehead (2016), *The Underground Railroad: A Novel*, US, Anchor Publisher

Nathan Englander (2017), *Dinner at the Center of the Earth: A novel*, US, Knopf.

Important reference for the Italian Literature is the special issue "Tematiche del sottosuolo nella letteratura e cultura italiane" RIVISTA DI STUDI ITALIANI Anno XXXVI, n 2 Agosto 2018, edited by Daniela Bombara.

"Seeing Calvino" is an art project performed by Matt Kish, Joe Kuth e Leighton Connor: they have re-interpreted the 55 fantastic cities created by the Italian writer, one for week, publishing paintings on line [https://seeingcalvino.tumblr.com/]

UNDERGROUND4VALUE

In the next issue:

2020-21 Case-studies,
plus calls, webinars and
new publications

Camerano (IT)

Paros (EL)

Dolmen of Antelas (PT)

Agia Salomoni Paphos (CY))

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