

COURSE ON INTEGRATED PROTECTION,
MANAGEMENT AND USE OF CULTURAL HERITAGE



Best Practice Handbook on Contemporary Use of Cultural Heritage



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CONTEMPORARY USE OF ARCHITECTURAL HERITAGE

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**Innovative uses in the revitalisation of heritage places
for sustainable development**

**Intercultural dialogue, travel and heritage:
elements of the design of architectural
and public historic spaces**

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I. Introduction

The city is a space characterised by the diversity and multiculturalism that lives within it, as Lewis Mumford said: ‘Cities are the place of mixing, of mobility, of encounters, of challenges and not just simple urban containers.’ When it comes to cities that are also tourist destinations, this feature is greatly accentuated, with national and international travellers visiting them.

To experience cultural and architectural heritage is one of the major reasons for travel for a multicultural mass of people that flows and congregates at the same site. Heritage sites can therefore become places where encounters are transformed into a dialogue among cultures. In order for the cultural city to become a generator of dialogue, urban and architectural characteristics are needed that enhance and communicate the local cultural identity and create welcoming spaces to meet. The design of spaces, both open and closed, for public use becomes strategic for intercultural dialogue—a practice that raises awareness and encourages respect and tolerance for diversity.

In this document, some basic definitions will be explained, including *cultural identity*, *cultural diversity* and *intercultural dialogue*, and some elements of the historic city, including its public spaces, architecture and monuments, will be analysed. Specific attention will be given to identifying the dynamics that must be considered in the urban and architectural project in order to favour meetings between the flows of residents and the flows of travellers. Spaces must be relevant to the purposes of a design, which in turn must be conscious of the importance of—and the opportunities available in—cities of art and culture.

2. The analysis and the mapping: methods for understanding and enhancing heritage

The opportunity to give greater prominence to the design process can be exploited by answering these questions: ‘What role do the architect and town planner play in creating opportunities for dialogue? What are the spaces that can favour this process?’

To start with, it is important to conduct an accurate analysis of the open and closed—public and private—spaces on a site in order to identify the prevailing functions, flows and services; to redress the deficiencies; and to re-balance the areas of attraction and service for both tourists and travellers. At the same time, it is necessary to map the activities that represent the local cultural identity, such as

artisanal workshops and small and medium-sized businesses, and those that connect to the local context. By mapping their presence, it is also possible to identify the system of relationships between activities and spaces, public and private, in order to protect them from the global market system and to enhance them for both citizens and tourists. Finally, the Green Plan of the site, the water system and, where present, the local agricultural and rural context must be taken into account. The project must have among its objectives the minimising of effects related to the consumption and pollution of resources, especially in the production and tourism sectors. The analysis phase is therefore very important for framing the real problems and challenges, which will then allow guidelines to be defined for a design that will be integrated with the local cultural, environmental and economic context.

The project that arises from an in-depth analysis of the context will therefore be able to offer answers to local problems; mitigate the negative effects of tourism, such as the overcrowding of popular historic areas, the loss of identity or pollution; and improve both the quality of life of the residents and the experience of travel and hospitality. This will lead to the creation of spaces and activities that, while respecting local identity and cultural diversity, create opportunities for dialogue and exchange between residents and travellers and between the travellers themselves.

A reference to consider is the UNESCO Historic Urban Landscape (HUL) initiative, which, since 2011, has offered an innovative approach to heritage management in changing contexts and environments. HUL recognises and identifies the international and local values present in each city, which are considered starting points for organic urban management and development. This allows for a more integrated and contextualised approach to conservation through the identification and understanding of local values and aspirations (UNESCO, 2011).

The sites on the UNESCO World Heritage List are places that are subject to great visibility and prestige and thus are visited by interested people from all over the world. These travellers find themselves both living in a space characterised by culture and knowledge and investing their money and free time in learning from that heritage. This exceptional predisposition is highly favourable to the exercise of tolerance and to respect for diversity and therefore also to engaging in an attitude of dialogue. The site that places dialogue opportunities among the objectives of its management plan must provide specific tools, including communication, the design of spaces and cultural and commercial products.

3. Notes on selected basic definitions

In the design disciplines, we do not always encounter definitions of words related to the protection of cultural heritage, such as *cultural identity*, *cultural diversity* and *intercultural dialogue*. It is therefore worth dwelling on these in order to create a common glossary and a main point of reference. UNESCO identifies a series of categories that are part of cultural heritage, including tangible cultural heritage, which is identified and protected by the *1972 World Heritage Convention* (UNESCO, 1972) and involves movable heritage (sculptures, paintings, coins, manuscripts etc.), immobile heritage (monuments, archaeological sites etc.) and submarine heritage (ruins, underwater cities, wrecks etc.). This is accompanied by intangible heritage, protected by the *Convention for the Protection of the Intangible Cultural Heritage* (UNESCO, 2003), which includes oral traditions, performing arts and rituals. Cultural heritage is flanked by two other categories: natural heritage, which includes natural sites with cultural aspects—that is, cultural landscapes—physical formations and biological formations, and finally heritage involved in situations of armed conflict.

Cultural identity defines, through both self-definition and external definition, groups or individuals in terms of cultural categories, including ethnic, linguistic, religious, nationality and gender characteristics. The diversity of the various groups introduces a concept of cultural diversity that is dealt with by the UNESCO *Universal Declaration on Cultural Diversity* (UNESCO 2001). In article 1, UNESCO defines cultural diversity as the common heritage of humanity. Culture manifests itself in different forms in both time and space, and this diversity is included in the uniqueness and plurality of the identities of groups and societies that make up the human race. Furthermore, cultural diversity is necessary, as it is a source of exchange, innovation and creativity; indeed, the Convention says that cultural diversity is just as necessary for mankind as biodiversity is for nature. The declaration also explains how diversity is a factor for development, as it allows the broadening of one's knowledge and horizons by enriching one's existence emotionally, intellectually, morally and spiritually. Article 4 highlights the right of everyone to cultivate their own culture while respecting and protecting cultural diversity.

On this issue, tourism, in its cultural meaning, is fundamental because, if properly structured and oriented, it can be an excellent tool to convey cultural diversity and to facilitate meetings. Heritage sites are essential for communication in a landscape characterised by cultural pluralism. This concept introduces the term intercultural dialogue, which is the recognition and understanding of diversity, respecting it and protecting it in an attitude of peace-building. Dialogue is an essential prerequisite for building social cohesion and reconciliation, and it is part of the UNESCO topics and

of the global framework of the Alliance of Civilizations launched by the United Nations.

4. Essential elements of urban and architectural design for intercultural dialogue

An urban and architectural project must be guided by principles beyond the merely technical and functional. The project must be led by a vision and mission for the space and place to be designed that encompass an ultimate purpose above simply carrying out a function and fitting into the context. One of these ultimate goals can be intercultural dialogue, which can stimulate the exercise of tolerance and respect for diversity and therefore, if applied at the scale of mass tourism, can have a positive effect on a global level.

A city and a space, in order to be generators of dialogue, must, in their own flows and spaces, bring people together and encourage them to meet; they must therefore be informed by an analysis of the places and urban elements that can host functions suitable for allowing travellers and residents to meet. Among such spaces will be those for the non-exclusive use of residents—that is, for mixed use—such as infrastructure and public transport; places of culture, such as museums, theatres and cinemas; markets; and catering spaces, such as bars, restaurants and dining points. There will also be spaces for use only by travellers, such as hotels, hostels and other hospitality places.

Infrastructure and public transport

The first experience that a traveller has with a site is with the means by which he or she arrives. Airports, stations, highways, toll booths and motorway restaurants therefore constitute the first impression of a city and the start of a visitor's perceptions, building an image of the place and of the local culture. In this phase, it is possible to get a first idea of the landscape, and in these places—often *non-places* (Augé, 2008)—one has one's first encounter with food, language, alphabet, rhythm, local education etc. The means of transport that connects the infrastructural hubs with the historic centre or final destination are the first real immersion in the context and represent fundamental places for communication. In fact, at that moment, the mind is highly receptive to the stimuli of the new environment. Also, in the case of green, shared transport, there are excellent opportunities for exchange and meeting, as the individual is very attentive to the functioning of the system and open to

dialogue, comparison and communication. These places are also often characterised by waiting for a vehicle, and the activities of dialogue and knowledge of the location might therefore be offered as a form of entertainment. Mobility hubs, at different scales, are precious spaces for communicating local culture and for possible dialogue initiatives with residents who are travelling or working in the area.

Green spaces

In World Heritage areas, green projects are often not valued as highly as those of architectural heritage and museums, and there is sometimes an imagined incompatibility between the historical fabric and new green additions. Historical gardens or green areas, when present, are important elements, as they allow improvement in the environmental quality (by intervening between heat islands, improving air quality, allowing better absorption of water with permeable soils etc.) of the historic centre. One of the elements that has been highlighted by isolation at home—as a containment measure during the COVID-19 pandemic—is the role of neighbourhood gardens and the benefits that can be drawn from a system of green and natural spaces in cities. Residents in historical centres, which mainly have paved surfaces, have suffered most from the lack of contact with nature. Even spaces equipped for families, with games for children, seats and sports equipment, are generally insufficient, but still support the liveability of the heritage. Finally, green areas of a city can become places where the overall improvement in quality of life leads to opportunities for dialogue and connections, both for their simple use for recreation and for the sports and cultural activities that can be organised in these spaces.

Places of culture

Museums, theatres, cinemas, exhibition spaces and cultural centres are places that, first of all, must be designed for the citizen, renewing their cultural offering and programming and making it always current. Yet they are also spaces for sharing and discussion and should therefore help the traveller to get in touch with the cultural life of the city and to enrich it with his or her own experiences. Unfortunately, some heritage sites tend to be managed for tourists; the places of culture are therefore conceived as iconic and representative places to visit once in a lifetime and are thus more for the traveller, while they are forgotten by the residents. To ensure active use of local cultural heritage, the programming of its symbolic spaces should be

renewed frequently, attracting residents and becoming active places in their daily lives. By creating reasons for residents to return to tourist attractions, the process of the re-appropriation of heritage can be facilitated. In this way, citizens can be led to take back their places of identity and to protect and preserve them. Interesting experiences of events of this type can include film reviews¹ and temporary exhibitions and installations.

Hospitality spaces

Upon arrival, the hospitality sector has the opportunity to relate to the traveller—at hotel receptions, at the entrances to short-term rental apartments and in the hallways of farmhouses and bed & breakfasts. The details of the architecture, in addition to providing security and services, can also favour a contextualisation that respects traditional local architecture and creates spaces and tools dedicated to interaction among travellers, such as common programmes and activities for visits and experiences that are an expression of local culture. The hospitality sector has a great opportunity; travellers rely upon and spend a large part of their time there, so it is important to invest in initiatives and policies that use such spaces to represent local identity for ethical and cultural purposes, as well as economic ones.

Catering spaces

Even catering spaces are places where meetings are possible, albeit for a shorter time. For example, bars, restaurants and dining points, with their offers of food and drinks, contribute to the creation of an olfactory and taste imagery that represents the city and its culture of conviviality. They are spaces that represent the rural, agricultural and productive culture of the area and that should comply with quality standards that reflect local culinary culture, without distinguishing between what is 'for tourists' and what is 'for residents'. These spaces, from hotel breakfast rooms to evening bars, should be equipped to encourage encounters with the locale and its culture and with other cultures.

¹ In the Florentine context, the 2020 open-air cinemas held in Piazza degli Uffizi, the Cloister of Santa Maria Novella and the garden of the Bardini Museum are particularly interesting.

The commercial sector

Trade represents a further element of encounters with local products and culture. Traders select the products to sell, introduce them and, particularly for artisanal products, explain their methods and history. Trade, through the choice of local and artisanal products and by enhancing the expression of local culture with new information, can act as a capillary retail form of communication.

Even supermarkets and markets constitute, for different reasons (the traveller for faster and more frugal purchases, the resident for daily shopping), spaces for possible meetings to be exploited. Globally, some markets have become important tourist destinations that represent the local food and wine culture yet remain points of reference for residents due to the quality of the products².

5. The meeting of tourist and residential flows

Tourist and residential flows sometimes meet. In general, residents tend to avoid spending time in and using shops on the main tourist trajectories, simply because prices are higher and the spaces congested, but the interconnectivity of the flows can be enhanced with specific projects, as the meeting places allow both new opportunities for dialogue and the regeneration of secondary areas through the decongestion of the main flows³.

Generally, this happens in squares where the passage of residents is forced but hasty, such as the most central tourist-filled places that are also close to workplaces, and in places dedicated more to recreational activities, should a tourist stay in the city for long enough. In the morphology of the city, some elements and typologies can generate conviviality and encounters. The most famous examples in the Mediterranean tradition are the big and small squares, arcades and galleries. It is possible to invest in the systems of these elements by creating activities for both tourists and residents, encouraging the decentralisation of flows and emphasising the network of secondary economic and cultural activities. It is precisely in the equipped public space that flows can be directed to overlap and thus establish a real dialogue between travellers and residents.

² For example, the Souk in Marrakech, La Boqueria in Barcelona, the Central Market in Florence and the fish market in Tokyo.

³ For example, the system of Florentine minor squares mentioned in the case studies text.

6. Conclusions

A correct use of heritage can create opportunities for encounter and intercultural dialogue. To this end, it is necessary to know—and know how to enhance—the cultural identity of a territory and, with this knowledge, to respond with specific designs to the issues that the context raises. Knowledge of a place is achieved through an in-depth analysis of the urban context conducted in parallel with a mapping of the local intangible cultural aspects that identify specific social and economic dynamics. A winning project takes both context and intangibles into account, sinking its foundation in the complexity of the context and aware of the opportunity to enhance cultural diversity.

Tourism that impacts cities and World Heritage Sites has often been poorly managed, creating a hasty and distracted mass tourism that pollutes the environment and dilutes the local cultural identity. Tourism processes have often led to the residents leaving the historic centre in search of more liveable, equipped and economical places.

Elements, spaces and places that extend across heritage cities can be incorporated into rethinking the tourism system with a view to reactivating, through the quality of the spaces and cultural offerings, the residents' interest in experiencing the 'Old Town'. Bringing locals back to live in the historic centre can also encourage encounters in dedicated spaces in which tourist and residential flows overlap. There are tools to seamlessly implement intercultural dialogue as a function, targeting improvements and the development phases of both public and private activities and monitoring the progress of the results. Over time, certifications have been created that allow the monitoring of multiple aspects and specific indicators, such as the communication of local heritage⁴.

In this complex process of regeneration and the reactivation of identities, the roles of architect, conservator and urban planner are of great importance. Those disciplines must guarantee a deep knowledge of the physical and intangible context in order to formulate proposals for the project that are rooted in and can contribute to the dialogue among the different cultures that meet in cities and places of culture.

⁴ Among these certifications, we draw attention to the Certification for Intercultural Dialogue DTC-LBT 2018. <https://www.lifebeyondtourism.org/join/certification-life-beyond-tourism/>

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Management Plan as a tool for protection and use of a historic city/site - assumption and structure

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The use of historical cities/sites cannot be separated from their protection and management. Such an assumption is the foundation of modern conservation theory. Therefore, the main task of conservators of monuments is to develop and implement tools that will combine the protection, use and management of historical sites. Such a tool is the Management Plan.

Managing (including protection and use) a historical site is a complex process that involves many elements. Therefore, the management process should be structured and planned. This can be achieved by preparing the Management Plan, a document that will analyse and organize all the main problems associated with the management of the historic site/city.

The Management Plan is not a standard document used in the management of historic sites. However, it is mandatory for UNESCO World Heritage sites. Therefore, the world heritage system has developed the assumptions and methodology (structure) of the optimal Management Plan. This model should serve as a reference for the management of historical sites.

In line with the assumptions made in the WH system, the Management Plan and the process of its development should be developed and presented as a series of separate problems, which should be developed by its authors (managers of historical properties). These are the following elements; the multi-faceted nature of the Management Plan; the idea of heritage management as a continuous process of planning, implementation and monitoring; the creation of the plan as a step-by-step process consisting of analysis of the facts, stakeholder consultation, public consultation, monitoring of implementation; the concept of HUL as the guiding idea of management of heritage sites.

The formulated requirements necessitate presentation of the methodology of developing the Management Plan divided into the following issues.

- 1. Substantive assumptions for the preparation of the Management Plan of a historic site/city.**
- 2. Structure of the Management Plan of a historic site/city**
- 3. Stages of the development of Management Plan**

I. Substantive assumptions for the preparation of the Management Plan of the historic site/city.

The Management Plan of the historic site/city should reflect the contemporary approach to heritage protection. This approach has evolved significantly since the beginning of modern heritage protection (after 70.) It should be based on a complementary analysis of formal documents and publications related to heritage protection (especially World Heritage), discussions and decisions made by international organizations (like ICOMOS), and actions carried out in the UNESCO sites. The sum of these analyses makes it possible to determine the general approach that should be implemented in the methodology of developing the Management Plan of heritage sites.

According to contemporary conservation doctrine, three complementary and interdependent perspectives should be taken into account in managing of heritage sites/cities.⁵

- Conservation perspective - the concept and problems related to the protection of the historic values of the site/city (problems solved by historical monuments conservators)
- Perspective of use - the needs and problem related to the functioning and use of the heritage site/city (problems of residents, tourists, other users who use but do not transform the site/area).
- Transformation perspective - the needs and problems connected with the development, adaptation, transformation of the heritage site (problems of: the municipality, facility managers, investors, owners who want to adapt facilities and the area, develop and invest).

Each of these three perspectives should be analysed and developed within the framework of the Management Plan. At the same time, all of them must be developed on a common basis i.e. the formal requirements formulated for the heritage properties (by State Service). In particular, the most important are the conditions that characterize a heritage site at the time of its inscription on the formal Monuments Register, as defined in the nomination documentation of the property.

The first perspective is the conservation perspective, i.e., one that results from the requirements set for the properties recognized as historic site.

⁵ The term „doctrine” must be understood in a positive sense, as a sum of assumptions, views, and theories commonly accepted in a given discipline.

The key step is the value determination methodology, which is a condition positive evaluation of a historic property. This methodology is characterized by the following elements (based on WH system).

Firstly, analytical determination of the value - it requires the definition of assessment criteria and reference groups/scale.

Secondly, linking historic values to their physical carriers/attributes - allows to identify elements that require absolute protection and to distinguish them from elements that can be transformed to some extent.

Thirdly, linking the value of an object with the state of its preservation and conditions of protection - recognition of the value is conditional upon meeting the requirement of *authenticity and integrity* and ensuring appropriate *protection and management*.⁶

These elements constitute the essence of the heritage evaluation methodology. Therefore, they should be recognized and taken into account in dealing with the heritage sites which are under the protection system. However, none of these elements is taken into account in the Polish system of monument protection⁷.

The Polish system of monument's documentation and conservation supervision is based on descriptive (non-analytical) determination of historic values. Therefore, in the protection practice, the possibilities created by the WH methodology (parameters more precisely describing the monument and its value) are not used. Therefore, it is difficult to objectively determine the permissible scope of interference. This is a particularly important problem in historic cities, where the protected areas are very large - it is necessary to make decisions about interference in tens or even hundreds of objects (tenement houses).

To sum up, the conservation perspective requires the Management Plan to include: precise determination of the *historic value* of heritage site (according to the formal documentation and survey) and linking them to attributes (material carriers); checking the conditions of *authenticity and integrity* and defining requirements for their further protection; checking the parameters and elements related to the *formal management of the property* (e.g. buffer zone, threats, financing, indicators, monitoring). Obviously, the analysis and evaluation of the management system of any

⁶ It is worth noting that there is a logical contradiction between defining the value (OUV) in WH system, making it dependent on authenticity and conditions of proper management. This does not, however, call into question the validity of linking the definition of the value with its protection within the formal system of monument protection.

⁷ By the way, it can be added that each of these elements should also be implemented in our system - and this is an important postulate resulting from the discussion about the World Heritage.

historic site/city will also cover the broadly understood national system of monument protection - including the activities of the municipality, the provincial conservator of monuments; Cultural Parks; Municipal Program for the Care of Monuments. This is of great importance because the efficiency of the local protection system will determine in practice the protection of any historic site.

The second perspective is that of the widely understood users of historic sites/areas. This notion covers various groups of stakeholders, including residents, people working in the area, clients and customers of the institutions located here, and tourists. These stakeholder groups use objects and space, but do not actively (materially) transform it.

From the users' point of view, particularly crucial are the various conservation restrictions, which affect the functioning and facilities of the historical area and the tourist traffic with its various consequences. Both factors generally limit the conditions of use of the historic sites and old town areas.

Restrictions on conservation lead e.g. to restrictions on entry, parking restrictions, lack of parking plots, lack of greenery, use of traditional surfaces on roads.

Tourist traffic results in, among other things, noise, price increases, displacement of certain services, overcrowding, accumulation of advertising, accumulation of cumbersome functions.

Both factors are connected with granting the city the heritage site status, which confirms its tourist attractiveness and justifies the conservation restrictions.⁸

The limitations and nuisances of the use of the historic site/area were generally not analysed from a conservation perspective. They were beyond the horizon of interest of the conservation theory and beyond the responsibility of the conservation services supervising the most valuable historic sites/areas.

However, the situation has been changing radically. The doctrinal and programmatic documents adopted in recent decades require taking into account the needs of heritage users. This group of stakeholders should participate in all phases of the process of conservation of historic sites. Such an approach has been written in the *Recommendation on the Historic Urban Landscape* (2011) - a document accepted in the World Heritage system, but also in many other international documents, including

⁸ It is worth mentioning that discussions and research are underway on the magnitude of the impact of the heritage site status (especially UNESCO) on the growth of tourist traffic - this impact has not been clearly defined.

the Faro Convention (2005), *Towards an Integrated Approach to Cultural Heritage* (2014), *Outline of the European Heritage Green Paper* (2020).

Recommendations of the doctrinal documents concerning the involvement of stakeholders in heritage management should be implemented in historic sites and old-town ensembles. Users of the historic sites/areas - the largest group of stakeholders - have the right to express their opinions and co-decide on solutions (position repeatedly confirmed during the *Congress of World Heritage Cities* in Cracow 2016).

These postulates find their implementation in the so-called social consultations. For this purpose, it is necessary to use primarily surveys and consultation meetings. Both forms allow users to express their opinions and postulates.

To sum up, the recognition of opinions and needs of the users of the historic sites and old-town areas should be a standard element of managing such heritage sites. Taking into account these opinions and needs, to the extent consistent with conservation priorities, should be an element of the Management Plan.

The third perspective is that of various transformations that take place in historic sites/areas. Many factors cause even the sites/cities of the highest value to undergo transformations. Changes in utility functions, technical standards, safety standards, ecological requirements, aesthetic standards, the needs of the disabled, the actions of investors, result in adaptations, upgrades, extensions, transformations, and new investments. Such actions are taken by a significant group of stakeholders, which consists mainly of the municipality, owners and managers of facilities, and investors.

The necessity of transformations results from irremovable practical and economic reasons. All historic sites/cities are a collection of objects that must perform modern utility functions and provide economic basis for their maintenance. The vast majority of these facilities are maintained on market principles. Therefore, the pressure to transform the objects increasing their broadly understood usability is justified and must be taken into account to some extent by the conservation supervision services.

In practice, the protection of the historic site/city does not consist in stopping all transformations, but in determining a compromise between protection and transformation. However, reaching this compromise requires precise indication of historic values, their attributes and material carriers. Only then can the elements subject to absolute protection be indicated and justified, thus determining the space for permitted transformations.

However, transformations in historical areas do not result only from the needs of stakeholders (users, owners, investors), whose role is not to represent conservation

needs. The conservation services and the local government - partners working together for the protection of historic values - may also make transformations. The interventions and changes may serve to consolidate and make historic values more legible. Revalorization understood as restoration of value is a recognized conservation activity, which often accompanies a broader revitalization program. Such an approach should be implemented in the Management Plan.

To sum up, transformations, as well as protection and use, are among the processes taking place in protected historic sites/cities. Therefore, this group of activities and the stakeholders representing it must be included in the discourse and plans for action in heritage properties. Within the framework of the development of the Management Plan, these needs will be identified and taken into account in the final document.

The sum of the presented processes, needs and expectations that intersect in the protected sites/areas makes managing them a very complex task. This is especially true for most important sites (European Label, WH UNESCO), which have to protect the values that determine their status. However, there is no doubt that isolating a protection program is not appropriate and possible. On the one hand, it is more difficult to carry out a conservation program, which does not include the processes of using and transforming the old town complex. On the other hand, the lack of the concept of using and transforming the historic properties, which is correlated with their protection, significantly limits the possibilities of their contemporary functioning. Thus, from both points of view, it is necessary to create a coherent concept of historic site/area management, which takes into account all three needs - protection, use and transformation. Such an approach is adopted in the contemporary policy implemented in the most valuable heritage sites.

Taking into account the three interdependent perspectives, which today should determine how to deal with historic cities recognized as World Heritage sites, it is possible to formulate conclusions which form the basis of the Management Plan.

- I. In a historic site/city, there are three processes simultaneously taking place – of protection, use, and transformation⁹. None of these processes can be eliminated. The processes are carried out by many entities/stakeholders with rights to the historic site/city. The goals of individual activities/stakeholders can be contradictory, which additionally hinders their planning and control.

⁹ The boundary between individual processes is not sharp, especially between use and transformation; transformation is often an effect of use. Nevertheless, for analytical purposes, these processes can be distinguished.

However, if the site/area manager has adequate resources, the course and form of the processes can be shaped.

Therefore, passive protection of the site/city - consisting in reacting to the proposals of transformations and control of the historic assets proposed by investors - is not sufficient to protect the values of a historic property.

2. In case of formally protected heritage sites the protection of historic values should be a priority, to which all processes taking place in this area are subordinated.

However, the needs of stakeholders related to the use and transformation of the site/area should also be taken into account in its Management Plan.

3. The methodology of determining the value of a historic property and to connect it with physically existing carriers is a very important element of the Management Plan. Analytical determination of historic values and their connection with attributes allows to indicate elements requiring protection and conditions and limits of intervention in the historic substance. Thanks to this, space is created for activities aimed at using and transforming historic sites/areas.
4. The tool that allows to plan and combine the implementation of the three processes taking place in the historic site/city is the Management Plan. The appropriate structure of the MP makes it possible to maintain the priority of conservation needs, and at the same time to coordinate individual processes - protection, use and development, taking place in the historic site/city.
5. The need to harmonize the processes taking place in the historic site/city and to take into account the opinions of many stakeholder groups makes the creation of the Management Plan a multi-stage process.

On the one hand, the preparation of the Management Plan should be based on broad public consultation (getting to know the opinions and needs of the stakeholders), and the already developed Plan should be consulted again, evaluated and possibly improved.

On the other hand, the implementation of the Management Plan should be monitored in order to support the units implementing the Plan and check the indicators that serve to evaluate its implementation.

6. In a historical site/city, the greatest opportunity to direct the processes of protection, use and transformation are in the hands of the local government cooperating with the conservation services. The local government has financial, legal, organizational, human resources, communication and promotion possibilities, etc. The conservation services are formally authorized to supervise historical buildings at all stages of their existence - transformation projects, their implementation and use.

Therefore, the active protection of the site/city - consisting in conservation activities (protection) and the direction of use and transformation, should be carried out by the municipality/local government cooperating with the conservation services.

In addition to the presented assumptions concerning the development of the Management Plan, one can also present key assumptions contained in the *HUL Recommendation*, which is indicated as a document presenting the current approach to dealing with heritage sites.

The close relationship between the HUL Recommendation and heritage cities results from the origin of this document. Its roots go back to the stormy discussion that followed the inclusion of the centre of Vienna on the WH list and the disclosure of plans to build a complex of tall buildings in its immediate vicinity. These discussions led to the organization of an international conference in Vienna in 2005 and the adoption of the so-called *Vienna Memorandum*, which tried to define a new balance between the protection of historical cities and the needs of their contemporary development. This document introduced the so-called landscape approach to historic sites/cities, through the concept of the *historical urban landscape*. The formal adoption of this idea took place after several years of intensive work, which led to the adoption of the "*Recommendation on the Historic Urban Landscape*" by the General Assembly of UNESCO on 10 October 2011.

In accordance with the provisions of the convention:

The historic urban landscape is the urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond the notion of "historic centre" or "ensemble" to include the broader urban context and its geographical setting.

Key to this definition is the understanding of the term "context". It is defined as follows:

This wider context includes notably the site's topography, geomorphology, hydrology and natural features; its built environment, both historic and contemporary; its infrastructures above and below ground; its open spaces and gardens, its land use patterns and spatial organization; perceptions and visual relationships; as well as all other elements of the urban structure. It also includes social and cultural practices and values, economic processes and the intangible dimensions of heritage as related to diversity and identity

The HUL Recommendation formulates a new concept of approach to the historical city. What is crucial is that, for formal reasons, it is a commonly accepted document. It was adopted by the General Assembly of UNESCO - the most important international assembly in the field of culture; it is a Recommendation - a document implemented by State Parties (this is clearly defined by the provisions of the Recommendation); it concerns historic cities - the most important group of heritage.

To sum up, it can be stated that the conclusions resulting directly from the HUL Recommendation and the conclusions coming from the contemporary approach to the protection of historical cities form a coherent whole.

Therefore, the presented approach to the protection of the historical sites/cities will guide and define the scope, structure and content of Management Plan.

2. Principles (manner) of treatment of heritage.

The Management Plan is a strategic document adopted for a period of a ca. decade (no clear time requirements have been formulated in formal documents), which programs activities in the historic site/city. The Management Plan is a document that is supposed to guarantee the protection of the heritage site values, therefore it should be obligatory for the most valuable or problematic properties.

The structure of the Management Plan is not clearly indicated in formally obliging international documents, which is due to the need to adapt it to the specifics of very different properties from around the world. However, many international documents and publications can be used to determine the structure and content of the Management Plan.

Despite the possibility of creating an individual Management Plan structure, the scope of discretion is limited by three basic conditions, which at the same time allow to assess whether the structure and content of the Plan are appropriate.

Firstly, the Management Plan should present and analyze all the parameters and conditions relevant to the properties recognized as heritage site. In general, the MP should first ensure the preservation of the heritage values, the conditions of authenticity and integrity, and the conditions associated with its management and protection. This means that the Management Plan should contain all the information on this subject, with a particular presentation of the protection system to guarantee the proper protection of these parameters. The source of information on the parameters of the property are documents adopted by Conservation State Service and field survey.

In addition, in the case of historic cities, the Management Plan should take into account the needs and scope of the use and transformation of the urban ensemble - the issues outlined in the chapter above.

Secondly, the structure and content of the Management Plan should take into account the provisions of the basic documents developed and recognized by main international bodies. In particular, this refers to documents such as: *Operational Guidelines for the Implementation of the World Heritage Convention (latest version)*, *Nara Document of Authenticity*, *HUL Recommendation*, *Global Heritage Management Guide*, ICOMOS and ICCROM publications and documents.

Thirdly, the structure and content of the Management Plan should take into account the records of a number of documents forming the local system of protection of the monuments. In particular, it concerns the documents constituting the local law, such as: *Urban Revitalization Program*, *Program of Cultural Development*, *Municipal Monument Care Program*, provisions of the *Local Spatial Development Plan*, objectives and principles of functioning of so called Cultural Parks.

The analysis and inclusion of these documents in the Management Plan is of utmost importance, as all activities aimed at protecting particular heritage site are programmed and implemented on their basis.

At the same time, the knowledge of the situation of the protection of local monuments, which the authors have at their disposal, will allow to confront the documents and practice, which will result in drawing conclusions as to the optimization of the city's cultural heritage protection system.

On the basis of the specified conditions, the general structure of the *Heritage Site Management Plan* can be determined.

Structure of the Management Plan

The main tenets of the Management Plan

/presented in points, principal information constituting the description of the MP and its main tenets; characteristics of the three thematic parts of the MP/

I. Characteristics of heritage property

I. General characteristics of heritage property

/General characteristics of heritage site and the context of its functioning/

I.1 Historic characteristics of heritage site

Basic information presenting the property; key events and dates in the history of the property

/source: materials on the history of the site/

I.2 Formal description of heritage property.

Basic information characterizing heritage site as a materially existing contemporary site/urban complex in the most important aspects:

- location (in the spatial context)
- material characteristics of the property (what elements it includes)
- defining the boundaries of the property and buffer zones (according to the documentation - maps)
- functional characteristics of the property
- ownership characteristics of the property

/source: property nomination documentation, retrospective documents and periodic reports + official documents on the property/

I.3 Characteristics of the functions and context of heritage site

Characteristics of the most important factors from heritage site surroundings, which are of importance and have influence on its management and protection.

- economic and environmental characteristics (properties and surroundings) (e.g. tourism)
- cultural characteristics
- social characteristics (including demographic characteristics)
- functional characteristics (environment)
- characteristics of the management system (within which heritage site)

/source: information and materials presenting the listed issues, including studies, development plans, strategies/

1.4 Information on documentation about heritage site

A list of documentation concerning heritage property, in particular the formal documentation.

/source: property documentation, retrospective documents and periodical reports + official documents concerning the property/

Conclusions and recommendations /point 1/

Conclusions and recommendations for possible actions related to the parameters of the property - e.g. ownership, boundaries, buffer zones, documentation of the property.

Conclusions and recommendations for completing formal documentation of the heritage property (without referring to the content of these documents).

2. Characteristics of heritage values (value +AI)

/Description of the property in terms of heritage parameters/

2.1 Characteristics of heritage site as the subject protection:

- Determination of heritage site as an element of one of the three main typological groups (object, group of buildings, site)
- Characteristics of the historical context of historic property (which is important for determining historic values - above all, characteristics of reference groups);

/source: property nomination documentation, retrospective documents and periodic reports on the property/

2.2 Determination of heritage property value

- Characteristics of the criteria for treating site as historic one
- Definition and characteristics of value attributes

/source: property documentation, reference to the literature on the subject, including publications by the authors of the study /

2.3 Determining the Authenticity and Integrity of heritage site (quality of the property)

- Analysis of authenticity
- Characteristics of attributes (and other elements) for which authenticity is determined
- Analysis of integrity
- Characteristics of attributes (and other elements) for which the integrity is determined

/source: documentation of the property - if it contains this information; in the absence of information, it should be specified for the needs of the Management Plan/

/attention: in determining authenticity, the scope and evaluation of past renovation, conservation work, etc. should be taken into account.

Conclusions and recommendations /point.2/

Conclusions and recommendations for actions to protect elements that are important for the authenticity and integrity of the urban ensemble in Cracow.

Conclusions and recommendations concerning the need for further research related to the cognition of the property (e.g. comparative, archaeological, architectural studies).

3. Characteristics of the technical condition of heritage property and the conservation tasks.

/Characteristics of the technical condition of the heritage property - as a material object - and description of other elements significant in the assessment of the state of the site and the conservation tasks resulting from these assessments/

3.1 Characterization of the technical condition of the heritage site as a material whole
- a description of the basic problems taking into account the factors influencing the condition of the property (e.g. use, repairs, maintenance, function).

3.2 Characterization of the technical condition of value attributes, with reference to the impact on the assessment of authenticity and integrity.

/source: technical condition assessment based on previously developed materials (e.g. periodic reports, monitoring reports) and analyses made for the Management Plan/

3.3 SWOT Analysis

Conclusions and recommendations /point 3/

Conclusions and recommendations defining conservation tasks resulting from the assessment of the technical condition of historic site (as a material whole), with particular emphasis on the attributes.

Conservation tasks concern the maintenance of the historic substance and form.

Conclusions and recommendations concerning the need to carry out further research to determine the technical condition of the property (e.g. structural assessments, geotechnical, humidity and strength tests).

II. Characteristics of management system of heritage site

4. Characterization of management and protection system of heritage site.

/Characterization of the protection and management system, which serves to maintain the heritage site, with particular emphasis on the clear distinction between the national and local system/

- characterization of the elements of the national protection and management system that directly affect the protection of the property /conservation supervision, law, finance, etc./
- characterization of the local protection and management system - created for the protection of the area/property

/characterization of the property administrator, system organisation, financing, stakeholders, local law/

Conclusions and recommendations /point 4/

Conclusions and recommendations concerning improvement and increasing the effectiveness of the protection and management system - for implementation reasons they should include actions that can be taken at the level of local protection and management system.

Conclusions and recommendations should separately define actions for the most important elements of the property management system - manager and management organization, law, financing.

/source: characteristics made on the basis of information obtained from the State Service, municipality, Department of Monument Conservation, National Heritage Institute and analysis of protection systems functioning/

5. Threats and monitoring of heritage property.

5.1 Attributes: Characterization of the attributes (elements and characteristics) that should be monitored for the value of the property and its characteristics (A+I). (point 2.2), (point 3.2)

5.2 Threats: Description (determination) of threats that should be identified and monitored.

The description should include the threats affecting:

- directly the attributes of heritage site (point.2),
- protection and management system (point 4)
- environment (in which heritage site is located)

Indicators (direct and indirect) should be defined for each of the specified risk groups.

/Note: special consideration should be given to the risks arising from the use of the property.

5.3 Monitoring: Characteristics of the monitoring system covering all the threats (direct and indirect) (point 5.2) and the dynamics of functional changes.

Note: Monitoring should be based on indicators (direct and indirect).

Conclusions and recommendations /point 5/

Conclusions and recommendations concerning elimination of threats (recognized) in all aspects - i.e. regarding the property, protection system, and use.

Conclusions and recommendations concerning implementation of monitoring concerning recognized and possible threats (recognized) in all aspects - i.e. regarding the property, protection system, use, and the environment.

/source: documentation on the property and research and analysis performed to assess risks in all aspects/

III. Description of the use of heritage property

6. Description of the stakeholders of heritage property

6.1 Characterization of key stakeholder groups that have a relationship with and influence the functioning of heritage site.

Presentation of their problems, opportunities for action and expectations related to the property (each of these areas requires separate characterization).

6.2 Identification of areas of cooperation with stakeholders (inter alia, educational and promotional activities, fundraising, protection programs implemented on the basis of the stakeholders).

Conclusions and recommendations /point 6/

Conclusions and recommendations concerning the identification of stakeholders' opinions, problems and opportunities to protect and use the heritage property.

(in particular conclusions and recommendations concerning the organization of specific actions for the benefit of heritage property in cooperation with the stakeholders)

/source: property documentation and analysis for assessing stakeholder cooperation opportunities/

7. Presentation, accessibility and tourism in heritage site

7.1 Characterization of the needs, possibilities and actions regarding the presentation and accessibility of the heritage property (information, exposure, securing the property) - with particular emphasis on the values that determine the status of heritage site.

7.2 Characterization of the needs, possibilities and activities related to the development of tourism based on the heritage property.

Conclusions and recommendations /point 7/

- Conclusions and recommendations concerning the presentation and provision of the property.
- Conclusions and recommendations concerning the identification of the needs, problems and opportunities for tourism use of the heritage property (with particular emphasis on limitations ensuring protection of the value of the heritage property).

/Source: documentation of the property, assessment of the condition of the property from the point of view of presentation and making it available, as well as any studies, analyses, statistics on the possibilities and limitations of tourist use of the property/

8. Use (and development) of heritage property

8.1 Characterization of the functional (other) functions of the heritage site (in case of historic city - e.g. residential, hotel, service, communication, religious) and factors connected with their realization (e.g. demography, political situation, transport accessibility, tourism development).

8.2 Analysis of the problems and possibilities of performing the specified functions (including the principles of sustainable development).

Conclusions and recommendations /point 8/

Conclusions and recommendations concerning activities related to the use (and development) of the heritage property - implementation of other functions of the property (with particular emphasis on the relations and limitations related to the protection of the value of the heritage property).

/source: documentation of the property and all studies, analyses, statistics, plans concerning possibilities and limitations of the use (and development) of the heritage property /

ANNEX:

1. A summary of conclusions and indications that should be developed in the Action Plans (based on the Conclusions and indications. Developed in respective individual points)
2. Surveys that were used in the public consultation and comments on their results.
3. List of bibliography

The individual chapters of the Management Plan will end with conclusions and recommendations that will formulate short-, medium- and long-term actions.

The conclusions and recommendations should be addressed to individual and institutional stakeholders who have the capacity to act within the framework of the heritage site management and protection System.

The conclusions and recommendations will also include promotional and informational activities addressed to stakeholders - primarily local communities.

3. Stages of developing the Management Plan of a historical site/city.

The elaboration and the implementation of the Management Plan should be divided into 4 stages. Within the framework of these stages, all substantive and organizational activities should be carried out in order to develop and formally accept the MP.

Stage I - Preparation of the Management Plan /ca. 6 -12 months/

- collection of all materials concerning the description of the heritage site (including the buffer zone) - heritage resources, national and local protection system, area management system, main stakeholders, local law documents, other materials and information relevant to the developed topic, etc.;

- analysis of documents concerning heritage site; development of materials for the Management Plan on this basis identification, establishing cooperation with and collection of information from institutional partners participating in the system of protection and management of heritage site /stakeholders/;
- field inspections and analysis of key areas *in situ*;
- analysis of collected information and materials concerning the characteristics of the protected historic site/area (including the buffer zone) - development of conclusions;
- development of questionnaires on the problems to be addressed in the MP;
- conducting 1st round of surveys among various stakeholder groups (including residents, local entrepreneurs, activists, tourists, property owners);
- developing a SWOT analysis;
- presenting and consulting the collected materials and conclusions with the managers of the historic site;
- development of the Management Plan (version for public consultation);

Stage II - Social consultations and preparation of the MP taking into account possible changes resulting from social consultations, according to the requirements /3 months from the completion of stage I/

- presentation of the Management Plan to the representatives of the main institutional stakeholders involved in the management and protection of the area (e.g. City Hall, Department of Monument Conservation); preparation of conclusions;
- presentation of the Management Plan during public consultation meetings
- developing questionnaires on stakeholders' opinions on the solutions proposed in the MP;
- conducting surveys among various stakeholder groups (including residents, local entrepreneurs, activists, tourists, property owners);
- developing conclusions and corrections resulting from public consultations;
- developing a revised version of the Management Plan

Stage III – Formal adoption of a Management Plan – if necessary /after the completion of stage II/

The action should be carried out by the body formally responsible for heritage site protection (e.g. City Council).

Stage IV - Monitoring of the implementation of the Management Plan /10-18 Months after completion of stage III/

The Management Plan will formulate the management objectives and related management activities; it will also formulate the so-called indicators to monitor and evaluate the implementation of the Management Plan.

Monitoring indicators related to individual activities will enable assessment of the plan implementation and will be the basis for future modifications of management activities.

The information presented in the 3 sub-chapters defines the detailed conditions and methodology for the preparation of the Management Plan. The presented material fully meets the conditions of contemporary management of heritage properties: the multi-faceted nature of the document; the idea of heritage management as a continuous process of planning, implementation and monitoring; the creation of the plan as a step-by-step process consisting of factual analysis, stakeholder consultation, public consultation, monitoring of implementation; the concept of the HUL as a guiding idea of management of historic sites/cites.

CONTEMPORARY USE OF ARCHAEOLOGICAL HERITAGE

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(Mis-) Use of Archaeological Sites and Ruins

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I Introduction

In addition to being a method of inquiry, 'archaeology' refers to physical remains, either those found buried or submerged, as well as to monuments and sites that are abandoned, forgotten, or even still in use.¹⁰ The use of archaeological sites and places varies considerably and can take different forms, such as being part of the continued use of a building, or transformation into in a museum-like setting.

A significant purpose of (archaeological) heritage is that it informs about the past, and it helps to better comprehend our identity and values. However, what is considered important regarding archaeological sites will differ depending on one's perspective: an archaeologist or heritage professional will likely assign different values than a site's descendants, cultural communities, or educators would.¹¹ Despite these diverse perspectives, a site's optimal value can be reached only if members of these different communities can relate to and empathise with a site professionally and /or emotionally.¹²

Before looking at the uses of archaeological heritage, the term 'heritage' itself merits a closer examination. Laurajane Smith and Emma Waterson argue that heritage 'is mutable and intangible and means many different things to many different people and communities'.¹³ In the context of site interpretation, the term 'cultural resource' is also employed to denote 'heritage', grounded in the phenomenon that 'heritage' can be emotionally laden, and which refers to historic tangible and intangible inheritance of Native or First Nation people(s). Contrastingly, 'cultural resource' includes also non-Natives and their inheritance.¹⁴ For this text, the terms 'cultural heritage' and 'archaeological heritage' should be understood as including inheritance of all people: Natives, First Nation, and Non-natives.

Heritage, and thus values assigned to it, will change over time, and will vary according to who will endow it with meaning. These values will overlap and perhaps even contradict each other; some will not be acknowledged or even disregarded. Heritage should thus be understood as a cultural process and an activity, rather than a *thing*.¹⁵

Buildings and places carry and embody memory. They help to raise awareness of its cultural significance, and they also act as repositories of memories of one's own

¹⁰ See also Carman, 2002, viii.

¹¹ Versaggi, 2008, p. 203.

¹² Versaggi, 2008, p. 204.

¹³ Smith & Waterton, 2009, p. 43.

¹⁴ Jameson & Baugher, 2008, p. 7. In addition, instead of employing the term 'heritage management', 'cultural heritage management' is more commonly used (Jameson & Baugher, 2008, p. 7).

¹⁵ Smith & Waterton, 2009, p. 45.

history, whether of a community or a nation state. Therefore, heritage sites foster identity, and promote cohesion within society. A sense of continuity can be demonstrated through buildings and places, and, depending on the situation, these buildings or, more generally, sites will therefore legitimise national, political, or dynastic claims and rights. In that sense, reconstructions of archaeological sites can also be employed to build a grand narrative of a nation.

How we deal with cultural heritage – whether discarding, destroying and neglecting, or cherishing and preserving it – reflects society’s attitude and the values placed on (archaeological) heritage sites. Heritage sites can be instrumentalised to claims on heritage, to leadership, or by destroying cultural sites demonstrating power and supremacy of one nation or religion over another. Perhaps the most significant and far-reaching use of archaeological cultural heritage is when it serves political or religious purposes.

II Research value¹⁶

In the 15th century, antiquity began to become of interest: The architectural remains of ancient Rome were particularly the focus of research, and of architectural history research, in order to study and understand proportions, construction, and structure. The rules that the ancient builders employed were studied so that a reconstruction of the buildings would become possible for the architects of that time. This research into ancient buildings and structures also served architects in applying these rules to the construction of new buildings. But, as will be demonstrated in the following pages, the use of archaeology for society at large goes far beyond the mere research into the building fabric for (re)construction purposes. The use of archaeological sites does not only affect a few disciplines, but has also become the subject of research interest for a large number of disciplines. Moreover, the benefits of archaeological sites to society as a whole, rather than to a few people within professional fields only, have been recognised and promoted. At the bottom of this lies, though, the knowledge obtained from the research carried out at archaeological sites.

Buildings and places are themselves considered to be a source of research: their fabric, context, and setting altogether provide valuable information about the history of the place, from the moment of its origin to the present, and will most likely bear

¹⁶ This chapter will deal only with cultural sites, in particular with archaeological heritage. For the management of archaeological sites, see Egloff (2019) *Archaeological Heritage Conservation and Management*. Access Archaeology.

witness to the different historic layers, uses of a building or site, and people interacting at a site.

The use of archaeological cultural heritage for society can be divided into different areas: For one, the use of archaeology lies in its research value, meaning that it enables further investigation, and thus serves as a basis for the scientific discussion of the past. Archaeology's material legacies provide new insights: This is grounded both on new examination methods and scientific advances, as well as on paradigm shifts which call for new perspectives and approaches to examine the past. The research methods of building archaeology will provide scientific evidence, so that, for instance, a reconstruction (analogue or digital) and an anastylosis can be carried out.

III Education

This research value can thus stand alone as a value in itself, and the knowledge obtained from research is instrumental for the understanding of a site, as a basis for decision how to deal with it, as well as for the implementation of site interpretation and presentation. In that sense, research value also contributes to educational value.

One must also be aware that the characteristics of both a site¹⁷ and a visitor¹⁸ have an influence on the perception, behaviour, motivation, cognition, and emotional reaction of the visitor to a site.¹⁹ One's individual motivations and expectations on a site visit vary according to each person, resulting in which manner a certain sense of place is experienced, and under which circumstances a sense of uniqueness of a past people can be fostered.²⁰ This in turn influences a visitor's individual use of the site. However, the goal of attracting many tourists also ultimately determines the site presentation, and the installed features that cater to the visitors' needs and expectations ultimately impacts the use of the site, which goes far beyond an educational use.

In this context it is noteworthy to look at site interpretation. According to Freeman Tilden, interpretation demands the revealing of site information in an engaging and provocative manner; it should be designed to address the specific audience, and should be done in a manner where the site is presented in its entirety, rather than in

¹⁷ Gusmann et al., 2019, p. 187, argue that the atmosphere of a site is shaped by the physical appearance and features of a place, its integrity and visibility, spatial openness which altogether determines its atmosphere; historicity is promoted through the conservation state of the historic fabric, and supported by didactic means.

¹⁸ The knowledge of a site, the personal connection and motivation to visit a site, the political perspective, and the current emotive state will influence the experience of a visitor to a site (Gusmann et al., 2019, p. 187).

¹⁹ Gusmann et al., 2019, p. 187.

²⁰ Jameson & Baugher, 2008, p. 7.

fragmented parts – which, taken by themselves, distort one’s understanding.²¹ By doing so, the transmission of information on the history of a site does not serve primarily to present facts, but to enable a better understanding of the past, but also to question how the past has been presented, and whose perspective is taken in the interpretation. A well-designed site interpretation is thought-provoking and fosters a better understanding, and thus promotes an engagement with the site and with the past.

The form of displaying archaeological heritage for educational and touristic purposes can be of a temporary or permanent nature, with (restricted) site access, or by remote (digital) access. The style of how a site may be presented from a visitor-centred approach encompasses:

‘- Didactic/educational

- Entertaining
- Emotive (aesthetic; evocative/romantic)
- Responsive (to viewer’s [physical] presence)
- Interactive (with visitor’s wishes)²²

The type of display/presentation and interpretation of a site need to be adapted, always keeping the type of visitor in mind. The site concerned in this publication has an ‘audience’ that is divided into 5 categories: the general public, students and teachers; legislators, professionals, and Indigenous peoples.²³ Each of these groups of people will draw different, though perhaps overlapping, uses from the site. A further distinction is made between either formal or informal settings, which refer to classrooms and museum-like environments, respectively.²⁴

It has been demonstrated that encountering and engaging with research and finds related to archaeology at places that are visited not for the purpose of archaeological heritage, will in fact help to foster an interest in archaeological heritage. This is particularly true for those who under other circumstances would not have come into contact or sought an engagement with archaeological heritage.²⁵ It has also been demonstrated that, in this manner, a gender gap could be bridged by attracting more women to research related to archaeological heritage.²⁶

²¹ Tilden & Craig, 2007, pp. 34 – 35.

²² Carman, 2002, p. 121, citing Belcher, 1991.

²³ Carman, 2002, p. 108, citing McManamon 1991.

²⁴ Jameson et al., 2008.

²⁵ Boom et al., 2019, p. 37.

²⁶ van den Dries, 2019, p. 326.

The educational purposes of archaeological heritage lie in communicating the value of archaeology not only in terms of identity, and but also as a resource which is not renewable, resulting in the aim of creating awareness of the fragility of archaeological heritage and the need for its preservation, protection, and research.²⁷ Science communication is particularly important when communicating about archaeological sites and should respond in a differentiated manner, in order to reach different groups of visitors. For this reason, the design of interpretation and presentation is of high importance. Furthermore, archaeologists themselves also have a responsibility to communicate the results of their research to non-professional communities. These results need to be presented in relation to those for whom the interpretation is intended, and can be thus 'consumed', whether in a passive way for education or leisure, or in an active manner for people who wish to engage with archaeological inheritance.

The use of archaeology for education lies, however, also in the discipline of the field itself, in which archaeology is taught at public schools as part of the curriculum. It has been shown that archaeology can be successfully be integrated into social studies curriculums, with the aim of highlighting and adapting the methodologies and theories used in archaeology so that communities can 'improve through archaeology so as to improve archaeology through communities'.²⁸ The goal of this project was to interest students in archaeological research, to foster critical analysis, and to create an awareness of history and the non-renewability of cultural resources/heritage.²⁹

IV Tourism and leisure

Since the 18th century, there has been a type of tourism focused on architectural monuments: First, the nobility visited significant sites on their Grand Tours. Touristic travels then extended to the educated middle class in the 19th century. This ignited an interest in preserving these places, and in offering tourists an aesthetic experience.

What spurs the visit to a site is the fact that the material remains bear testimony to something of historic interest, and the quest for the authenticity of a place comes to the fore and is given much importance.³⁰ However, one may need to be aware that

²⁷ Carman, 2002, p. 122.

²⁸ Jeppson & Brauer, 2008, pp. 231, 233 citing Jeppson, P.L. (2002), Introduction. "Reach America": Looking to the Future of Archaeology and the Public Schools. Panel discussion Presented at the 35th Conference on Historical and Underwater Archaeology, Mobile.

²⁹ Jeppson & Brauer, 2008, p. 233.

³⁰ Heyl, 2019, p. 162.

visitors will only acknowledge and define for themselves only those layers for which a site is known as authentic, but will generally not take into account the later (or earlier) remains that are part of a historic site as well. Authenticity, in that respect, also refers to former narratives of a site, and the manner in which it is presented. A past reconstruction of a site, such as the Palace of Knossos in Crete (done by Arthur John Evans at the beginning of the 20th century), will not be done in the same manner today, but will itself have become part of the history of the site, the history of visualising archaeological sites, a history of conservation and restoration works, a history of building archaeology, a history of site interpretation and presentation. All of these aspects are in themselves also 'authentic'.³¹

Archaeological reconstructions are based on the current state of research, and reflect the present in its artistic, scientific, and historical conceptions of the past. These archaeological reconstructions should, however, not be confounded with an anastylosis.³² Restoration or reconstruction can themselves constitute a subject of investigation and form a historic layer of the object, but they also reflect the zeitgeist in which they were created. The aim of reconstructions within an archaeological setting have, however, changed over time, from one where an educational purpose outweighs one that entails commercial interests with attracting more tourists.

An early example of an archaeological site employed for both educational and touristic purposes is demonstrated with the Xanten Archaeological Site in Germany. It was a Roman settlement (Colonia

Ulpia Traiana) with roughly 10,000 inhabitants. The first excavations were already carried out in the 19th century, and research is still undertaken at the site today. The site opened in 1977 for visitors, and several of the structures were reconstructed (see fig. 1), such as the amphitheatre, the city wall, and some of the craftsmen's shops. The buildings were rebuilt based on archaeological research, and the aim was to create a place of leisure and entertainment for the whole family, a site apt for school trips with re-enactments, with events and site interpretation designed foremost for children. However, professionals or interested lay-people can also profit from the

³¹ For a discussion on WWII memorial sites of concentration camps and the change of paradigms and narratives in Germany, see (Drecoll et al., 2019, pp. 11 – 12).

³² *Anastylosis* (Greek), means 'to erect something again'. The term anastylosis employed in the context of architectural conservation encompasses also the fact that the same historic remains/fragments are used, and put in the same place they were before, if possible.

research carried out at Xanten through the numerous, regularly published, and open access 'Xantener Berichte' ('Xanten Reports').³³



Fig. 1 Partial reconstruction of the so-called Harbour Temple at Xanten Archaeological Site / Germany (author, 2020).

Tourism, especially mass tourism, is a double-edged sword: It holds numerous advantages, and for those involved in tourism the economic benefits are attractive and convincing, but on the other hand, it threatens the fabric of the place and its environment. Over-tourism also threatens the same communities that profit from tourism, through gentrification, one-sided tourist-oriented infrastructure, or an economy which is exclusively focused on tourism. There is also the threat of 'Disney-fying' heritage sites, and of a commercialisation of monuments goods. This entails that

³³ See Xantener Berichte, https://apx.lvr.de/de/lvr_archaeologischer_park/forschung/amphoren_projekt/geo_prospektion.html, accessed 10 May 2021.

heritage may be presented in a simplified and historically incorrect manner, resulting in the presentation and interpretation of heritage in non-authentic ways.³⁴

When economic interests outweigh the interest in preserving a place, not only the values and fabric of a site are threatened, but also communities living at the sites, unless economic gain is seen as a means to support these communities and to help preserve (and gain new) values, whilst maintaining the historic fabric. It is therefore important to foster the collaboration between all stakeholders and to find acceptable ways to promote tourism without threatening the fabric of the site, its values, the communities, and the environment.

V Well-being and the nature-culture divide

The socio-cultural impact of community participation on society – specifically for stakeholders and community members – has been well-researched within the field of archaeology.³⁵ Not only has it been demonstrated that community archaeology is a driver of sustainable development, but also that it improves the quality of life for those engaged with heritage.

Recently, there has been a paradigm shift concerning the commonly employed division of heritage into cultural and natural forms. More often, heritage is now regarded as both culture and nature, interwoven and interdependent, in which separation is regarded as artificial and constructed. Heritage, thus, also encompasses natural resources and the environment.³⁶ The nature-culture divide is a result, for instance, of hierarchising culture over nature and placing the importance of achievements of humanity before nature and other beings. It is also related to the development and professional formation of disciplines related to nature and culture, as well as the growing alienation of people living in cities from nature. Nature has been regarded as inferior to culture, and thus as an exploitable resource for humanity, a phenomenon largely spurred through the Industrial Revolution, colonialism, and capitalism.³⁷

The way heritage is framed, discussed, or managed occurs along the lines of this divide, but approaches to bridge this gap are becoming more frequent. One such way is looking at how heritage affects people in terms of well-being. Well-being not only refers to one's physical health, but it also relates to the different needs of individuals,

³⁴ Smith & Waterton, 2009, p. 51.

³⁵ Boom et al., 2019, p. 29.

³⁶ Jameson & Baugher, 2008, p. 7.

³⁷ Byrne et al., 2013, p. 4.

be they social, mental, economic, spiritual, or emotional, and the potential within a society to enable the necessary context to obtain well-being.³⁸ In the context of archaeology and heritage sites, it is clear that one's cognitive, physical, and emotive engagement with (cultural and natural) heritage contribute to an overall state of well-being. Paul Taçon argues that well-being

'[...] can be viewed as a positive sense of personal and cultural wellness that results from strong cultural identity. Strong cultural identity is underpinned by connection to places, landscapes, tradition, heritage, shared stories and communal histories. Thus, well-being is here defined as a positive sense of psychological, physical, emotional and spiritual satisfaction that results from being part of a culture and community that actively engages with its environment, heritage and traditions.'³⁹

Under the umbrella of 'well-being', one may examine the effect of nature on visitors and tourists to archaeological sites. From a historic perspective, nature has played an elementary role for the existence of a site, and will have been the decisive factor in establishing a settlement or an individual building. Nature will have also impacted the place and may have been the driving force for its abandonment and any (subsequent) detrimental effect on the building fabric. Nature, in addition, is for today's visitors equally significant, in as far as the conservation state is still impacted by natural elements. At some sites, specific flora and fauna may be under protection, and thus, the cultural significance and value of a site may be grounded in the effects of the natural environment. Lastly, nature is of crucial importance to understanding heritage because the surrounding nature of an archaeological site contributes to one's experience of the visit, and ultimately their physical and mental well-being.

One may think of in which way well-being and wellness even merge when visiting baths, for instance the historic Budapest baths (Király, Rudas, and Gellért), or the Roman baths in Khenchela in Algeria. In this context it is, however, noteworthy that while a continued use of historic sites will help – if appropriate conservation measures are implemented – to sustain the fabric of the place, daily wear and tear can also impact the site. The (continued) use of the sites for physical well-being needs to be extended along the lines of sustainability of heritage, and the interplay of nature and culture as well. The re-use or continued use of archaeological sites is a phenomenon which has a long history, and will be outlined only shortly in this section.

³⁸ ICCROM, 2021.

³⁹ P.S.C. Taçon, 2019, p. 6 cited in Paul S.C. Taçon & Baker, 2019, p. 1302.

VI Spoils and re-use

The reuse of historic building material, also termed ‘spoils’, or *spolia*, encompasses the spectrum from employing building elements for individual ornaments, incorporating structural supports into a new structure, the re-use and adaptation of an entire building for new or similar functions, to the use of building materials for the production of lime.⁴⁰ Spoils can, depending on the circumstances, thus have various underlying motivations and purposes. In some cases, spoils are the result of a rather pragmatic approach and re-using materials, or the reason may be grounded in political aims as a sign of the legitimisation of rule, the demonstration the power of one culture over another by taking building elements with great civic significance as trophies, of one religious belief over another.⁴¹ Spoils were also intended to remind us of the place from which they originated. Spoils provide authenticity. The use of spoils can also be interpreted as an acknowledgement to a past epoch, which carries more ideological undertones. Entire buildings could have also been re-used. One such example are the Diocletian Baths in Rome, built at the end of the 3rd/beginning of the 4th centuries CE, which had suffered neglect and decay, but were in the 16th century repurposed and transformed by Michelangelo for a religious function with the establishment of the church Santa Maria degli Angeli e dei Martiri, a work commissioned by Pope Pius V.⁴²

VII Identity and nation-building processes

The results gained from archaeological research have been employed to (re-)create the past, to analyse past societies’ political, cultural, and economic systems, and present them in an understandable way for a non-scientific audience. The purpose of heritage, argues John Carman, is that it should be shared: heritage belongs to everyone, and is a common good.⁴³ It is thus something that can be understood, ideally, as a vehicle that unites people who share something – at some level– and who have something in common. By creating awareness for past societies an awareness of one’s own cultural roots and an understanding of historic contexts of the existence of different cultural groups can be fostered.

A significant use of heritage is connected with the formation of identity. Heritage, not as an abstract idea, but as something tangible and material, functions as a symbolic marker of lineage, standing, achievements, or values, and acts as a reminder of a

⁴⁰ See also Esch, 2016, p. 14.

⁴¹ See also Esch, 2016, p. 14.

⁴² Plevoets & Cleempoel, 2019, p. 120.

⁴³ Carman, 2002, p. ix.

(common) past. Heritage is a socio-cultural construction that is in constant change according to what society deems important in terms of values and identity.

The importance that is placed on these visible manifestations may explain why the conservation of the fabric of these sites, or the reconstruction of a site, is viewed as so significant for the assertion of identity. Conservation (or reconstruction) provides proof, legitimisation, and a sense of belonging. In that sense, the destruction of historic sites, also in times of peace, but especially during war, hits a nation or community group that much harder, because it involves the erasure of own's past, and thus also constitutes an action of obliterating identity.



Fig. 2 An interactive museum display at Melbourne on cultural identity (author, 2018).

An individual does not possess one single identity (see fig.2), and will as such relate to heritage and heritage sites that are important on a very personal level, but perhaps also to those which are significant on a regional or national, and even global level.⁴⁴. Individuals may even wish to disassociate themselves from cultural groups, and will

⁴⁴ Smith & Waterton, 2009, p. 48.

not relate to heritage that this group however identifies with. This means that a person is thus composed of several, overlapping, maybe even conflicting identities. Heritage is and has been employed to strengthen or create divides in society, separating one group of people from another, ranking some heritage as more valuable or superior than others, and thus creating a hierarchy of heritage. As a consequence, groups of people associated with specific heritage places, forms, and expressions are given more voice.

Whilst identity is used to foster cohesion within society, it can – and is – used to exclude communities, along the lines of race, ethnicity, religion, or gender, and to divide society into ‘us’ and ‘them’. This works to define what should be considered ‘normal’, and to ultimately establish a ‘normal’ and dominant group within society and to then legitimise its perspective and narrative of heritage and history. This recalls Smith’s concept of the Authorised Heritage Discourse (AHD)⁴⁵, because as soon as a heritage serves or is associated with national identity, any heritage outside this categorisation is seen as inferior or ignored, while the dominant perspective is reinforced. The recognition or rejection of the inheritance is done by so-called experts, and is in turn negotiated on a professional level.

Heritage on a community level is not perceived as significant as that on national level, and associated rather with notions of nostalgia rather than with ‘memory’, a term related to national heritage.⁴⁶ National heritage is a type of heritage that is dominant and serves to construct national identity, and by default heritage lying outside of this narrative are deemed less important or even lie in conflict with the dominant narrative. Heritage is thus (mis-)used to create a national identity with the aim of strengthening the idea of nation, especially of importance in unstable and new nations as part of the nation-building process.

Heritage as vehicle to build national identity through a grand narrative does not by default need to be heritage and heritage places that are connected to positively assigned grand achievements, events or historical periods, but can also be associated with negative and even traumatic events, such as 9/11 and Ground Zero in New York City, or historic eras, such as that under National Socialism in Germany. In the case of the latter, such eras can be interpreted in vastly different ways depending on the political, cultural, and social ideals of the moment: various interpretive strategies regarding fascist ‘heritage’ in East and West Germany during the years of division reflect this phenomenon. Cultural (archaeological) heritage can (and should) thus

⁴⁵ Smith, 2006.

⁴⁶ Smith & Waterton, 2009, p. 51.

represent also uncomfortable⁴⁷ or even traumatic⁴⁸ heritage. Places that may have had a positive connotation in a former period will be labelled as negative, uncomfortable, or even illegitimate, due to a change in society concerning politics and religion. This often results in a desire to delete these sites from collective memory.⁴⁹ Even the preservation of the uncomfortable heritage is an essential political task, but it requires a differentiated and appropriate interpretation of this heritage. If it was to be left uncommented – left to itself, as it were – it would fail to meet its goal as a memorial of responding to the past.

The identification with a monumental/universal heritage site is, however, perhaps quite different from one that is connected to a site connected to an individual. How much protection can a site obtain when it is of importance for only a small group of people? One may need to take into consideration how far a World Heritage site can be connected to and foster identification, or whether only national or local sites can fulfil this function, or if, perhaps, the idea of nations is counterproductive to the idea(l) of World Heritage (see fig.3) Against the background that identity with heritage can bear the potential of a certain nationalism that provokes or supports a pronounced shift to the political right within societies, the question arises whether the idea of commonality or a shared heritage with other nations or cultures should not come to the fore, instead of fostering the idea of an uniqueness of the heritage on a national level. It is thus very important to unite social cohesion through local, national and global heritage, and to employ heritage as a tool to identify common grounds, to embrace diversity and multi-perspectivity.

Different narratives that are connected to a site will, however, bear the challenge of conflict, particularly when they contradict each other. This phenomenon has been identified and termed by Dolff-Bönekämper as ‘contention value’: it demonstrates that a historic site is valuable not *despite* but *because* it provokes debate.⁵⁰ Cultural heritage thus bears the opportunity to discuss the meaning of cultural heritage sites for society, and to therefore come to terms with conflicting narratives.

History education on regional, national, and international levels, of different cultural groups and communities is an important element in the formation of politically educated, informed and responsible citizens, fostering democracy and democratic processes, and to counteract political currents that oppose human rights.

⁴⁷ For a detailed discourse on uncomfortable heritage, see (Huse, 1997), who distinguishes it along the lines of heritage representing a) specific political systems and occurrences such as fascism, dictatorships, or genocide; b) economically challenging sites, which are for instance too costly to sustain or without use; c) that is considered ugly, and which does not comply to contemporary aesthetic standards.

⁴⁸ See for instance (Tumarkin, 2005) on sites that are marked by traumatic events affecting large segments of society.

⁴⁹ Muñoz-Rojas, 2020, p. 300.

⁵⁰ Dolff-Bonekämper, 2010.

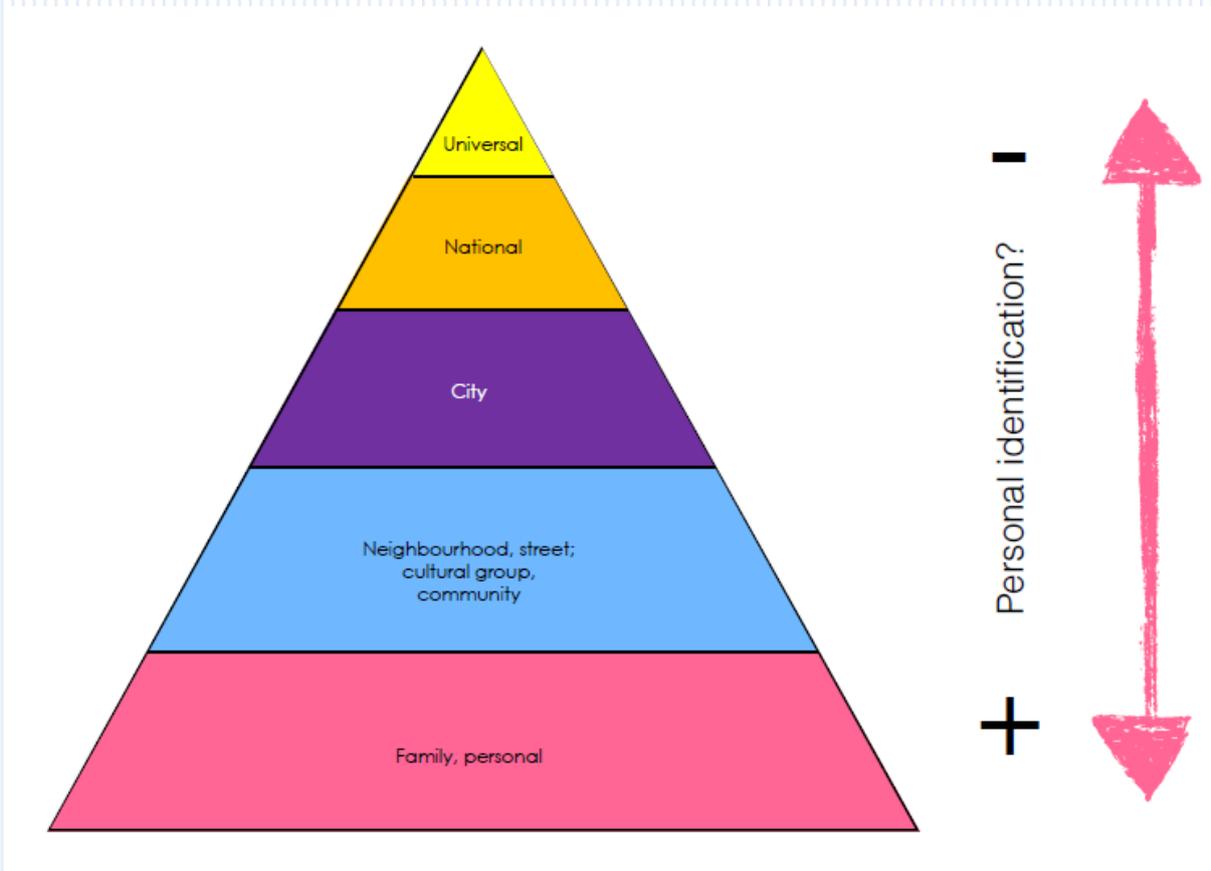


Fig. 3 Visual representation of heritage and the identification connected to these sites (author).

VIII Political use

From a historic perspective, the use of archaeological heritage has been employed for millennia to construct history, and for representational purposes and legitimisation of political, dynastic, or national rights.

An individual's memory is structured based on physical places. Therefore, architecture is apt to evoke memories. When people or events are remembered it will be connected to places. Based on these facts a reconstruction of places can help to preserve the memory of people and specific events.

The manner in which a reconstruction of archaeological heritage appears informs us about the understanding of the past. However, it is also testimony to the fact that the past serves a certain purpose, and thus a reconstruction does not simply reflect a recovery of a site, but it is an expression of an interest that is politically, economically, religiously, or culturally motivated. One of the key factors motivating

the reconstruction of sites is the reason for their destruction or loss.⁵¹ Reasons can be symbolic, aesthetic, functional, and strategic, but one factor may outweigh another one, depending on the respective situation.⁵²

Aleida Assmann has identified 3 pairs of relationships: destruction and recovery, abandonment and returning, and devaluation and revaluation, whereby in each case the reason for the loss of a building or place conditions its reconstruction. In the first case, the loss is caused by a hostile and armed conflict. A site's reconstruction is a sign of survival, of identity, and of cultural belonging. Reconstruction processes can also be a form of healing and coming to terms with the past, and of reconciliation. Reconstruction can also become a symbol of reconciliation and overcoming.⁵³ The second example is grounded in a political reorientation. A place, therefore, no longer corresponds to the self-image of a nation or a group of people. A reconstruction tries to re-establish the connection to the past.⁵⁴ A reconstruction is a reference to specific morals, political systems, and values. The final example, in which the loss of historic fabric is based on aesthetics, is characterised by a re-evaluation of past tastes and historic examples.

To sum up, reconstruction goes hand in hand with a paradigm shift. This is based on a change in the understanding of time, and the relationship to both the past and the future. Future and past are thus both projection surfaces and sources of renewal and change. Archaeological sites and monuments thus are a political tool. Not only the reconstruction of buildings or entire urban structures are a political statement, but also the fact that perhaps specific buildings are neglected imply a certain attitude towards a place. This also applies to the choice to reconstruct places intentionally destroyed during wartime, or by terroristic activities. Such destructive acts aim at destroying a people or a culture by attacking their identity, as people have strong (emotional) connections to buildings and sites, on a national but also on a personal or community level.

The destruction of the Bamiyan Buddhas or the Palmyra Arch may be need to be seen (also) as a political tool. Both sites are examples that were destroyed due to armed conflicts.

The Arch of Triumph (Arch of Septimius Severus) in Palmyra in Syria was erected roughly 2000 years ago, and destroyed by ISIS in 2015. By producing 3D renderings, the arch was copied – albeit at a smaller scale – employing numerous photographs

⁵¹ Assmann, 2010).

⁵² Assmann, 2010, p. 17.

⁵³ Assmann, 2010, p. 18.

⁵⁴ Assmann, 2010, p. 18.

taken mostly by site visitors in the years prior to the destruction to extract the necessary data for the model made of stone.⁵⁵ This arch was then exhibited in different cities, such as London, Oxford, New York, or Geneva.⁵⁶ The destruction of this site, just as well as a reconstruction (anastylosis), or copy of it, should be considered as an expression of political intent. It can be interpreted as the demonstration of a cultural or national assertion despite the will of opposing forces to destroy cultural heritage for ideological motives.

It has, however, also been argued that the outside aid provided in reconstruction and rehabilitation work, especially in the aftermath of armed conflict, may go beyond a pure humanitarian act, but instead serve other political interests. The reconstruction work of archaeological sites goes beyond the reestablishment of a condition of a fabric and carries political undertones.

The reconstruction/anastylosis of destroyed archaeological heritage is thus not value-neutral, as certain intentions are associated with a reconstruction. In addition to affirming a nation's affiliation with a culture as a sign of national strength, it also serves to legitimise hegemony. This claim to cultural heritage usually refers to specifically selected places, historical figures, or layers of time, and is determined by political will within a nation. One may judge the use of the archaeological site Babylon for Saddam Hussein and his claim on lineage: His self-representation in relation to Nebuchadnezzar, with whom he sees himself as culturally connected, and feels himself to be a natural successor. The use of this historic figure for representational purposes is highly questionable, as is the construction work undertaken by Hussein at the archaeological park with the erection of his palace on site.

Research work at archaeological sites have also been guided by ideologies, asserting, for instance, cultural or religious ownership to a site, which focusses or ignores particular finds and findings, and interpreting them accordingly.⁵⁷

IX Community archaeology

Community archaeology has taken an important role for citizen participation the field of archaeology. The term that addresses this approach has been commonly accepted as 'community archaeology, in which communities encompass people with common interests, which refers for instance to professional educational, professional,

⁵⁵ Bold, Pickard, et al., 2020, p. 316.

⁵⁶ The reconstruction of the arch by anastylosis is in the planning stage at the time of writing.

⁵⁷ See also (Jameson & Musteață, 2019, p. 1)

academic, descendant, fields, as well as to local or virtual common interest groups.⁵⁸ In contrast to educational programmes, site interpretation and presentation, in community archaeology the idea of a ‘target’ audience does not apply, as it implies a rather top-down hierarchy⁵⁹, which community archaeology attempts to overcome.

Ways of engaging citizens in archaeology cover a wide range of outreach programmes, which in part relate to educational formats, and to community archaeology as a way to inform about the importance of archaeology for society. These can be, for example, exhibitions, guided walks, organising conferences, presentations, and talks, enabling school project works, providing work experience in form of internships or volunteer work.⁶⁰ Meanwhile, Moser et al. have identified, in addition, activities of participation such as interviewing stakeholders, collecting and archiving oral histories, photographic and video materials from stakeholders, and establishing community-led merchandising.⁶¹

At Xanten, for instance, interested students of archaeology are invited to participate in excavation campaigns at Xanten Archaeological Park itself,⁶² whilst at Port Arthur in Tasmania/Australia the public engagement with volunteers between 17 and 24 years encompasses active site maintenance and monitoring activities, as well as site survey and documentation of some site features.⁶³ In addition, citizen science is also playing an increasing role: the collaboration of metal detectorists in archaeology has not only gained recognition, but the data collected by them is a valuable contribution to databases; it also exemplifies also an implementation of a decolonising approach to archaeology.⁶⁴

The participation of ‘non-expert’ communities⁶⁵ into the research, interpretation and use has also become part of a much wider debate into questions of ownership, expertise, and rights of heritage, and is thus linked to the debates around the Authorised Heritage Discourse,⁶⁶ as well as a people-centred approach to the broad field of conservation. Community archaeology and stakeholder engagement ultimately helps to foster the support of the public, strengthens stewardship, and helps to increase an understanding of the values of heritage. It also gives a voice to the

⁵⁸ See also (Jameson & Baugher, 2008, p. 5)

⁵⁹ Jameson & Baugher, 2008, p. 6)

⁶⁰ See also (Chartered Institute for Archaeologists, 2014, sec. 1.2)

⁶¹ (Smith & Waterton, 2009, p. 16, citing) Smith & Waterton, 2009, p. 16, citing Moser et al., 2002, p. 229)

⁶² (APX LVR Archäologischer Park Xanten and LVR Römer Museum, n.d.)

⁶³ (Steele et al., 2019, pp. 259 – 261)

⁶⁴ See (Wessmann et al., 2019); this context, however, the authors also draw attention to the need to ensure a uniform approach to the documentation of finds, to guarantee authenticity of finds and, above all, to protect archaeological sites from looting, and unauthorised excavation activities.

⁶⁵ Communities should be understood as a group of people who are united by a common interests and identities, but who may live far apart (Jameson & Musteață, 2019, p. 1).

⁶⁶ (Smith, 2006)

subaltern, to citizens whose heritage has been forgotten, ignored, or disregarded. To embrace all heritage, the sources and the method of inquiry need to be broader, including, for instance, also decolonising approaches to archives, ethnohistorical, and ethnographic methodologies.⁶⁷

X Conclusion

Archaeological sites, as shown above, carry multiple uses. At large, they act as a political tool. Not only the reconstruction of individual structures is a political statement, but also the fact that perhaps specific buildings are neglected imply a certain attitude towards a place. Political, also, is the choice of places intentionally destroyed during war times, or with terroristic activities, aimed at destroying a people or a culture through the loss of identity.

Identity and heritage are closely connected, and are (mis-) used as a political instrument, either as a means to foster social cohesion, coming to terms with an uncomfortable past, but also to underline or undermine power relations within society. Identity is, though, a concept different from culture in as far as identity requires action in form of participation and becoming or being part of something.⁶⁸ With heritage, and engagement in heritage, a voice is given to marginalised people and the subaltern. Changes in the way to talk about the past – focussing not only onto representative seats of leadership, places of secular and religious power, but more often now also onto vernacular and every-day places, as well as onto marginalised themes and peoples.

In the past, engagement with an archaeological site was expert-driven, and the enjoyment of these sites was attainable only for upper or middle classes. However, the democratisation of heritage sites has changed the use of these sites, the type of activities possible there, and the people involved in protecting, interpreting, and shaping heritage.

By drawing communities and stakeholders into the focus of research, multiple and conflicting perspectives are also considered at heritage sites,⁶⁹ which in turn results in embracing a more balanced interpretation of sites and the values they carry for the different communities. Ultimately, this reflects a shift from a top-down site interpretation to a bottom-up, democratic and inclusive one. The consideration of different perspectives and values and their associations also harbours potential for

⁶⁷ See for instance (Jackson, 2012).

⁶⁸ See also (Anico & Peralta, 2009, p. 1)

⁶⁹ See also (Barry, 2019)

conflict, because sites can have both positive and negative associations, and can bear different, contrasting values, but also a change of values. Thus, the negotiation of these values, the recognition of diverse values and their discussion will act as an occasion to stimulate the general discourse within society. Due to the historical distance to the archaeological heritage, its value assignment here rather holds the possibility to unite and negotiate the multiplicity of perspectives.

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**The urban fabric as a source
for an archaeological history of the topography
of medieval Florence**

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I. A medieval urban landscape.

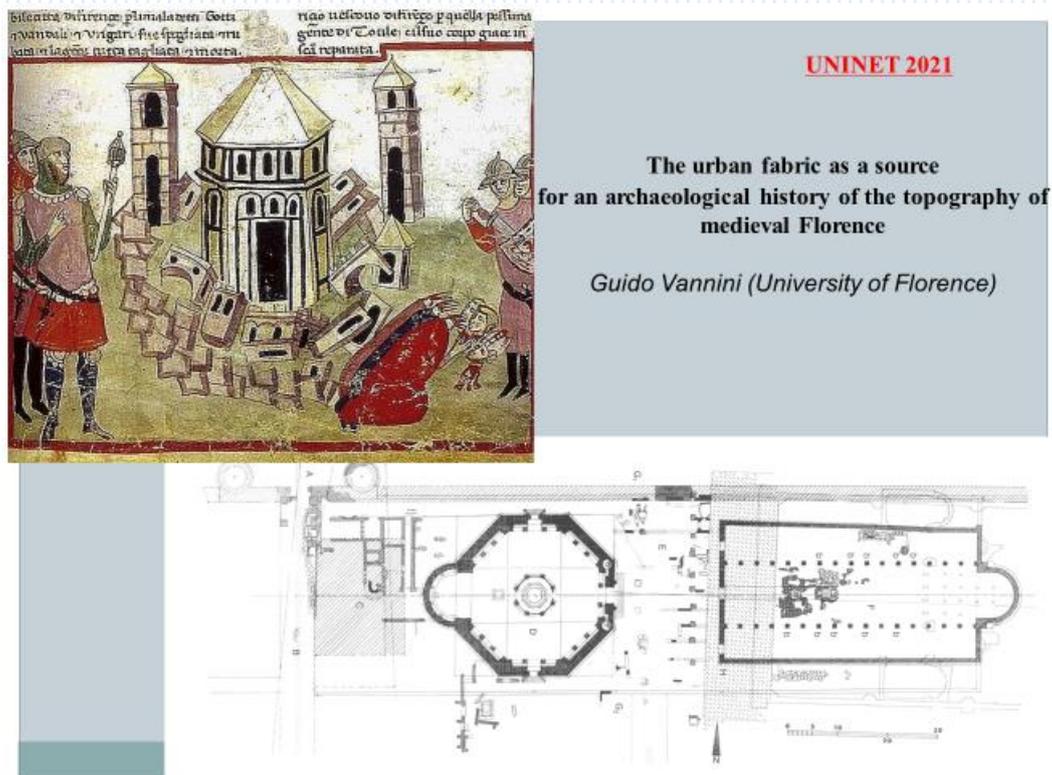


Fig. 1. The urban fabric as a source for an archaeological history of the topography of medieval Florence

The urban landscape, examined with the tools of an archaeology intended as history of the material structures of past societies, produces a documentation that allows a specific access to peculiar interpretations, using every kind of source in new contexts and meanings.

As it is well known, Medieval Florentia has been able, since its 'Romanesque' season - and especially in its peculiar evolutionary itineraries between the 9th and 13th centuries, and finally, during the extraordinary ones between the mid 13th and the late 14th century - to produce the cultural models of reference that started the proto-Renaissance season that lay at the origins of the same contemporary European (and Mediterranean) identity.

An unprecedented ability to re-profile the environment itself, without solution of continuity between renewed culture, existence also anthropologically reinterpreted, and structures (mental, economic as well as material), whose social dynamics soon let us glimpse a new 'Weltanschauung'; a laboratory, between humanism and the prodromes of a Renaissance age, which would soon impress itself upon the whole of Europe.

1. A medieval urban landscape

Light archaeology in medieval Florence.

2

S. Maria Maggiore: stratigraphic analysis and construction phases of the façade and bell tower (10th-12th centuries), in relation to the topographical history of the area

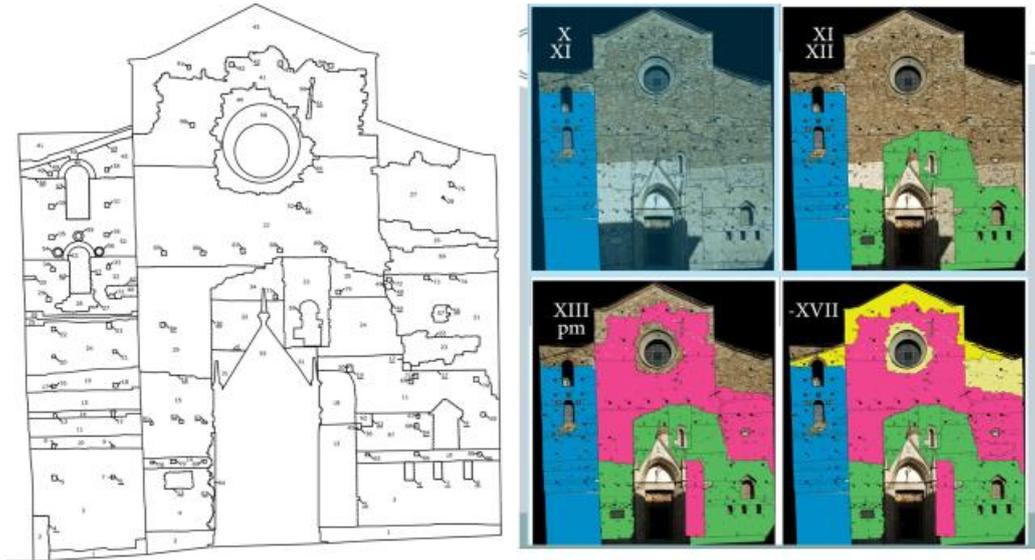


Fig. 2. Light archaeology in medieval Florence. S. Maria Maggiore: stratigraphic analysis and construction phases of the façade and bell tower (10th-12th centuries), in relation to the topographical history of the area.

Let us start here with some exemplifying elements, taken from a unique season of deep, dense and impressive changes the city went through in the course of the thirteenth century, employing as methodology a shared approach between medieval archeology and historical urban planning, and as object the same urban fabric of a Florence that - in the politically terrible and intellectually magnificent 'Dugento' - was able to rethink its cultural cognitive categories. In other words, the 'construction' of a precise civil identity, was able to make use of a whole tradition of incisive, typically 'medieval', concreteness which, however, the 'Romanesque' Florentine society aimed to overcome.

2. The 'invention' of the square.

After the wide urban reconfiguration of the last quarter of the 12th century, the Florence that faced the new century, the 13th century, was a city in the middle of its demographic and urban development; with its capability to receive, in a perfectly organized way, a large number of immigrants not only from its countryside, who

flocked to the city with a substantially uninterrupted influx that carried the population from a few thousand to perhaps thirty thousand inhabitants. A city that expanded its urbanized fabric, reaching after a millennium, at the time of the construction of its first municipal walls (1172-4), that of the Roman *Florentia*, beyond its colonial walls.

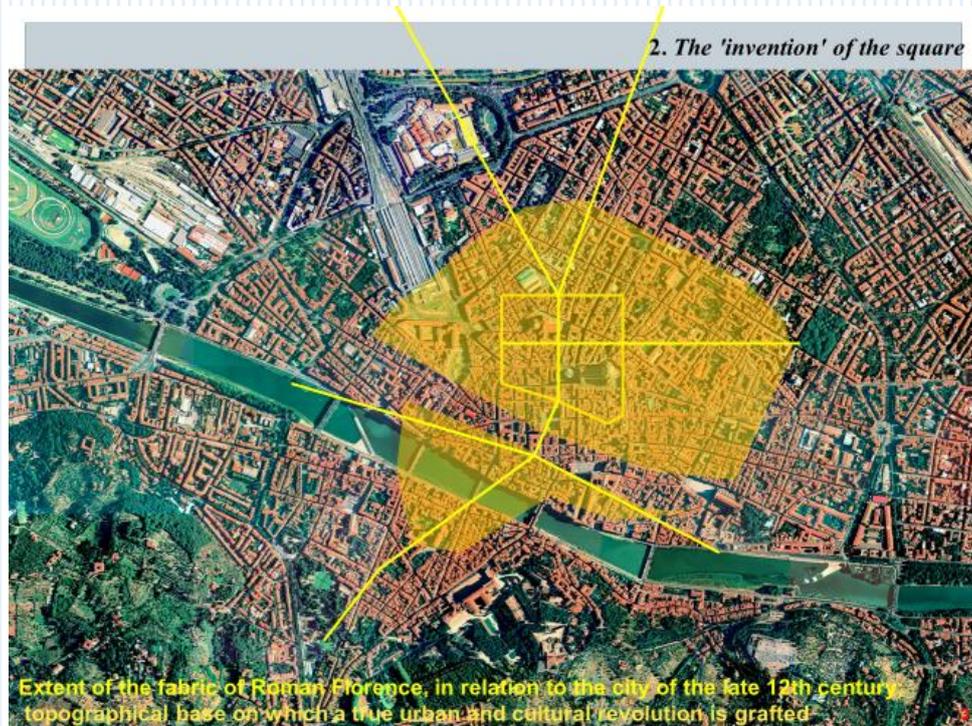


Fig. 3. Extent of the fabric of Roman Florence, in relation to the city of the late 12th century; topographical base on which a true urban and cultural revolution is grafted

After the wide urban reconfiguration of the last quarter of the 12th century, the Florence that faced the new century, the 13th century, was a city in the middle of its demographic and urban development; with its capability to receive, in a perfectly organized way, a large number of immigrants not only from its countryside, who flocked to the city with a substantially uninterrupted influx that carried the population from a few thousand to perhaps thirty thousand inhabitants. A city that expanded its urbanized fabric, reaching after a millennium, at the time of the construction of its first municipal walls (1172-4), that of the Roman *Florentia*, beyond its colonial walls.

However, if we admit that the growth - certainly ordered but with a polycentrism based on a rigorous 'allotment' - was until that moment substantially quantitative, the *Florentia dugentesca* 'imagined' a new city, for a new civil (political, economic, institutional) society, which began to perceive itself as 'other', even with respect to a well appreciated tradition: the detachment from Dante's 'city of Cacciaguida' thus began.

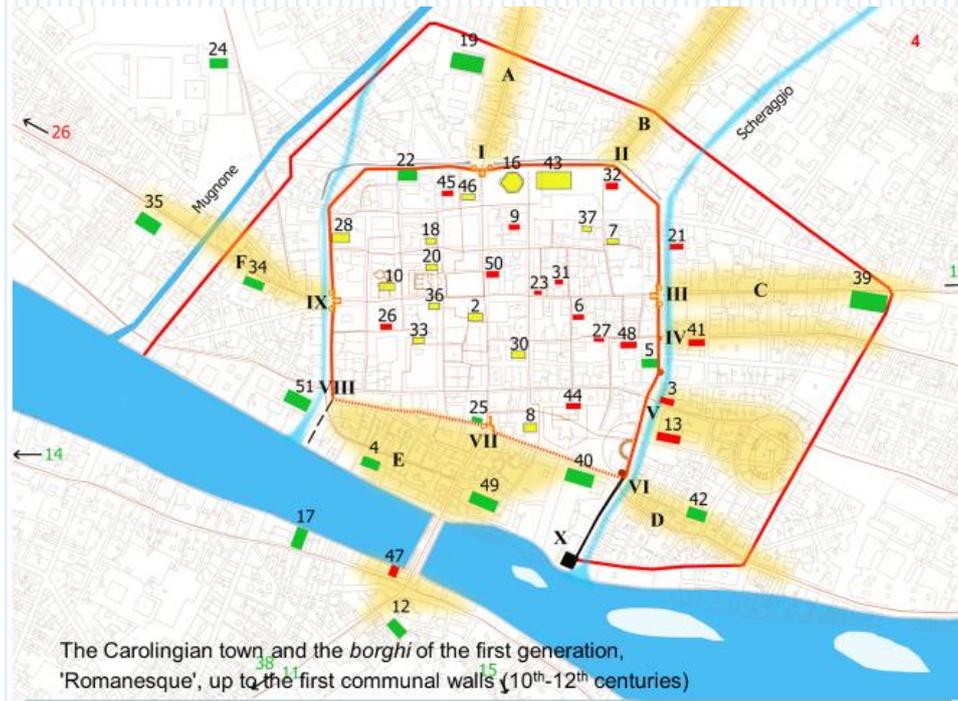


Fig. 4. The Carolingian town and the borghi of the first generation, 'Romanesque', up to the first communal walls (10th-12th centuries)

We can ascribe to this season, for example, what can be considered, in some ways, the 'invention of the square' in the history of European urban planning, at least in this 'Florentine' form. Since the early 13th century, in fact, the urban fabric considered the soil inside the walls as precious, exclusively reserved for residential use, to which the same road system was subordinate, often even organically 'invaded' (as in the system of the *chiassi* with 'common' spaces), even at the upper levels, with projections ('sporti'), generally for suspended latrines, or with supporting arches (with static and apparently also anti-seismic functions). A sort of urbanistic '*horror vacui*' that reserved the land for exclusively practical uses, for precise functions.

The only open spaces for public use were represented by the churchyards of the churches which held districts in the '*vicinie*'; these spaces were also used for meetings of the residents (parishioners) to discuss problems of cohabitation or similar, maintaining the ancient custom (believed to be of Germanic origin) of keeping a shady tree (often an elm) in the churchyard itself.

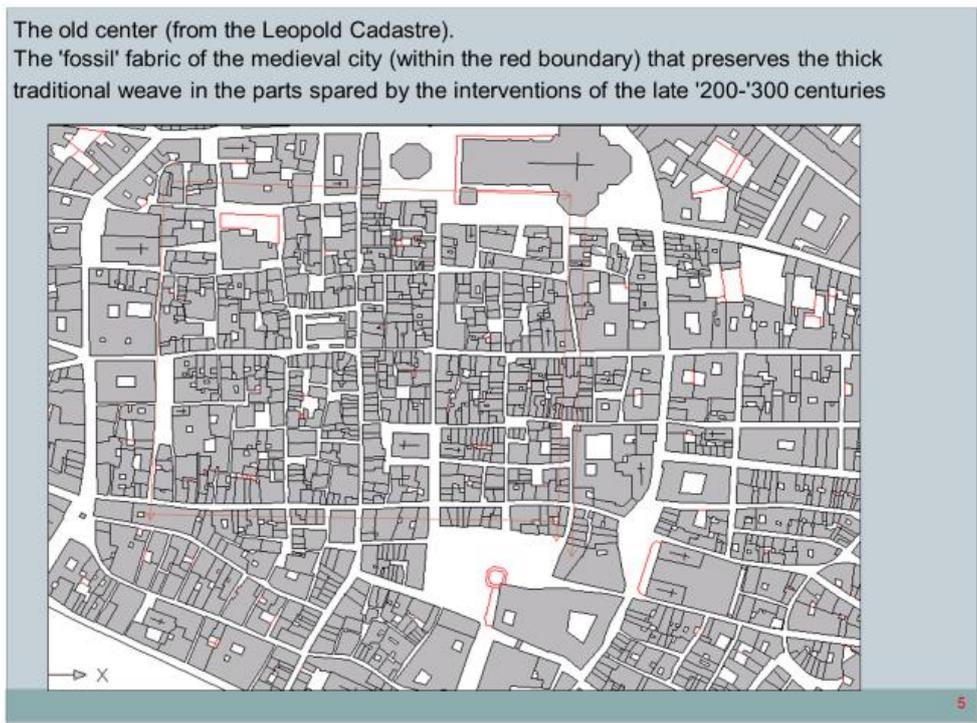


Fig. 5. The old center (from the Leopold Cadastre). The 'fossil' fabric of the medieval city (within the red boundary) that preserves the thick traditional weave in the parts spared by the interventions of the late '200-'300 centuries

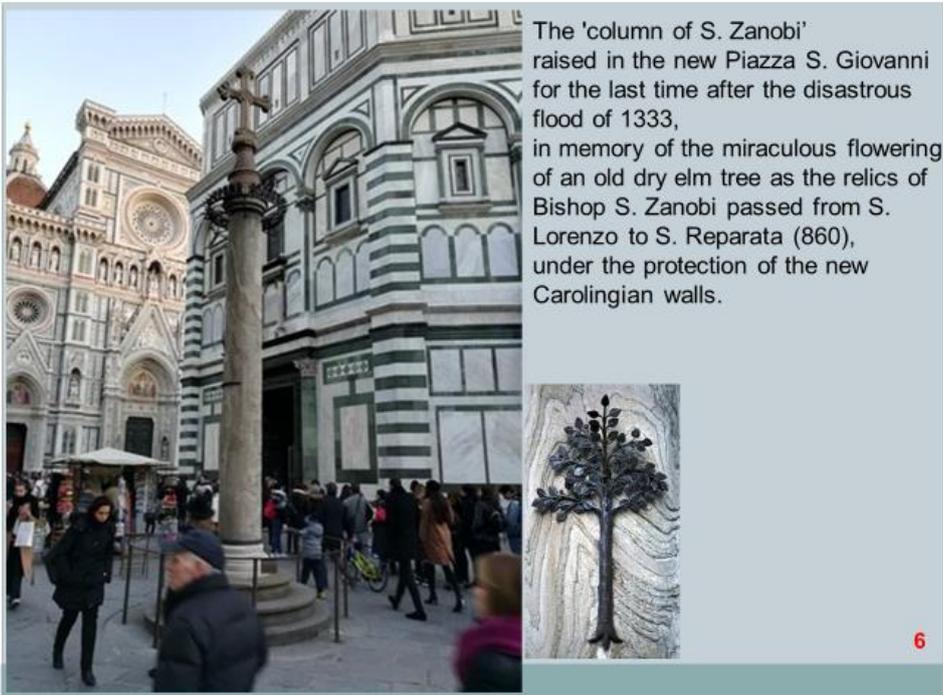


Fig. 6. The The 'column of S. Zanobi' erected in the new S. Giovanni square for the last time after the disastrous flood of 1333, in memory of the miraculous flowering of an old dry elm tree at the passage of the relics of the bishop S. Zanobi, from S. Lorenzo to S. Reparata (860), under the protection of the new Carolingian walls

The only (apparent) exception in cities of Roman colonial foundation is the partial preservation of the *Forum*.



Fig. 7. *Florentia: from the ancient Forum to the medieval Mercatum Regis*

And yet, not even this is an exception: in fact, everywhere - the ancient space inherited from the Roman urban order - was, so to speak, 'put to work' as well, with the attribution of a specific practical (indeed, essential) function, which crystallized also in the new medieval denomination: '*Mercatum Regis*' (but also the various '*piazza delle erbe*' of many medieval cities, mostly in the center-north of Italy).

Thus, already from the first half of the 13th century the problem of the topographical location and urban adaptation of the new ecclesiastical 'structures' (which were also bearers of a radical renewal on very peculiar bases) was solved in a revolutionary way: the basilicas and convents of the mendicant orders. These - consistent with their own social aims, which could be indicated as 'a return to the city' of the regular clergy - are located in the (opposite) expanding peripheries of the city; the Franciscan S. Croce to the east (where "*prima v'era la chiesa vecchia*", VILLANI) and the Dominican S. Maria Novella (no longer "*inter vineas*", as it was only a few decades before) to the west.



Fig. 8. *Florentina*, first third of the 13th century ca. Location of the basilicas and convents of the new mendicant and preaching orders, with the new dedicated squares, on the way to a centrality of the recent urban peripheries

Their new function - preaching to the residents in topographically peripheral areas, socially (less and less) marginal, but economically more and more central due to the rise of fundamental productive activities (in the popular *borghi* the new 'bourgeoisie' is evolving) - is resolved precisely with the first phase of what we have called the 'invention' of the square, understood as a free space in the fabric of the city.

A new fact in terms of urban planning, but still dedicated to a specific practical function: to host the crowds of believers and listeners (the political component became more and more evident and incisive). It was a new phenomenon - leaving a part of urban land open ('unused', according to traditional canons) - but with a connection, albeit reinterpreted, to the dictate to give a concrete function to these new *plateae*; therefore, an urban phenomenon, anything but a simple episode.

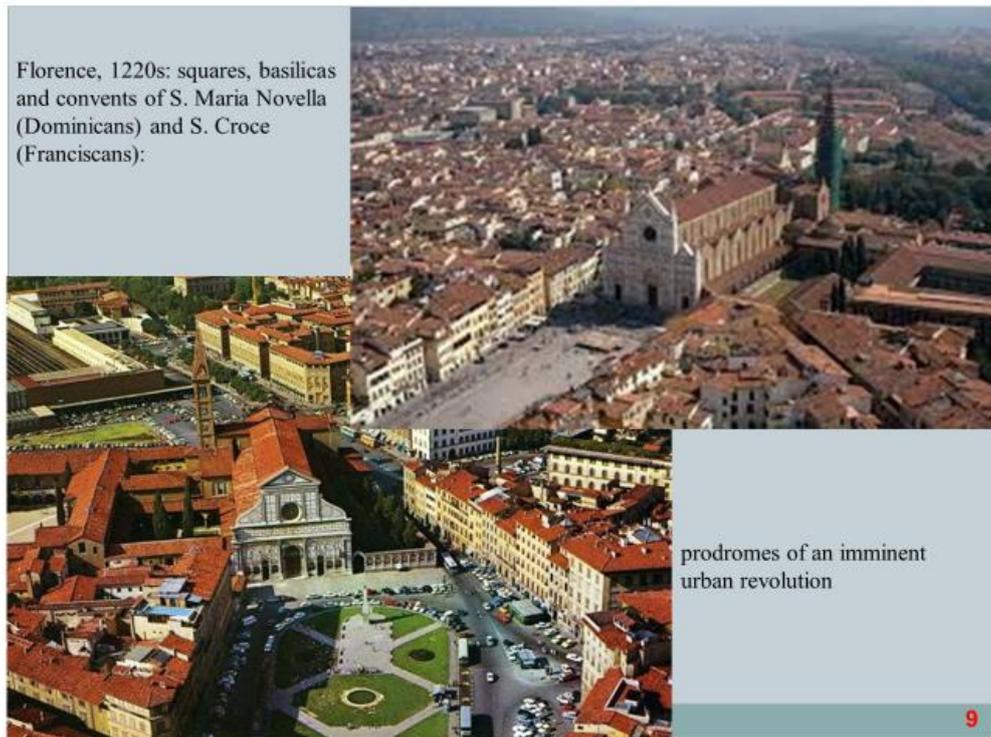


Fig. 9. Florence, 1220s: squares, basilicas and convents of S. Maria Novella (Dominicans) and S. Croce (Franciscans): prodromes of an imminent urban revolution

In fact, we could structurally define it as an actual solution of continuity, which started a radical rethinking of the same flourishing tradition matured in the formation of the medieval city, initiated with the building of the Carolingian walls and developed into the 'Romanesque' centuries of the city's history (*urbs* and *civitas*). 'Structural' episodes that came to determine a new city and, above all, a new perception of it, gradually embraced by its inhabitants.

Always adopting the archeotopographic reading of the urban fabric, particularly of its northern part, as a methodological indicator, let us try to briefly outline the context in which, in the last quarter of the 13th century, the real 'construction' of the new city took place, finding its completion later in the Renaissance season. These are the years between the planning of the second communal walls (1284) and the actual start of its realization (1301-1333), which instead accompanies the period of the most intense program of radical redefinition of the *civitas vetus*, once enclosed in the "*cerchia antica*" of the crusader Cacciaguada.

A dense city, which maintained its own strong topographical and urbanistic coherence and which was much regretted, in the same years, by its descendant Dante Alighieri; an exile, who, however, certainly represented, well beyond the political opposition, a

laceration that was also present in the souls of part of the citizens who guided this radical transformation of what they had inherited.

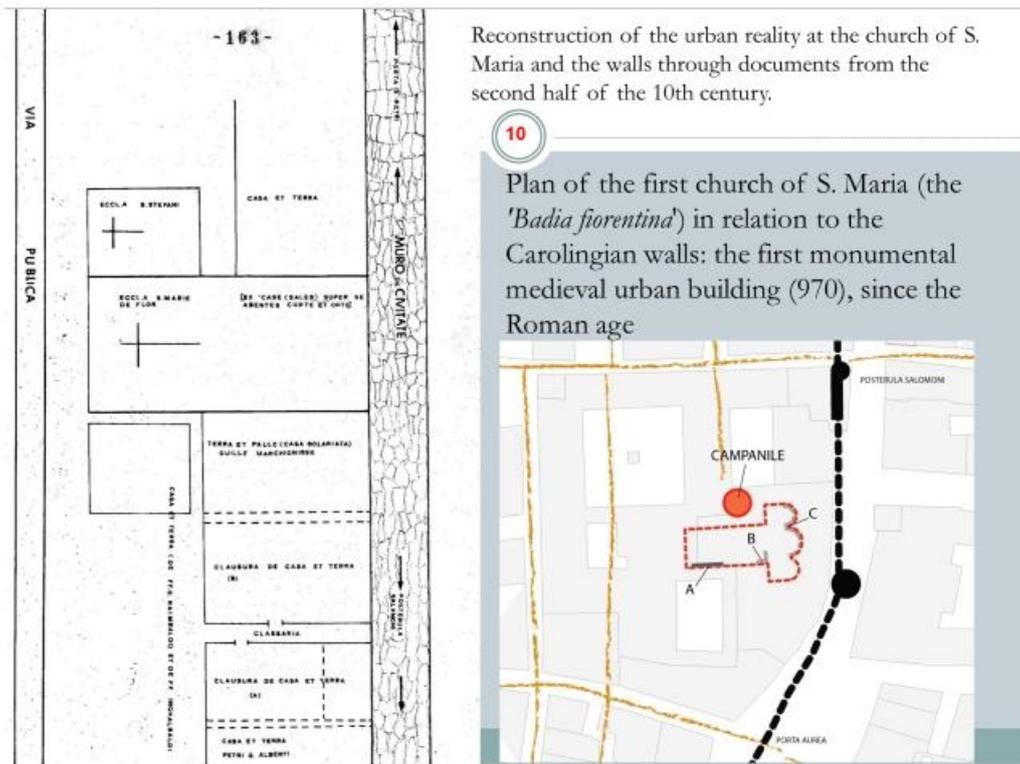


Fig. 10. Plan of the first church of S. Maria (the 'Badia fiorentina') in relation to the Carolingian walls: the first monumental medieval urban building (970), since the Roman age. Reconstruction of the urban reality at the church of S. Maria and the walls through documents from the second half of the 10th century

What current historians have called the "city of Arnolfo" was born at a fast pace for three quarters of the 14th century, after a long period of quantitative and progressive growth of the urban fabric, its population and the same structures, even the monumental ones, starting with the strengthening of the Carolingian walls with an expansion southward, after the mid-11th century: and after centuries, the 'recapturing of the Arno'.

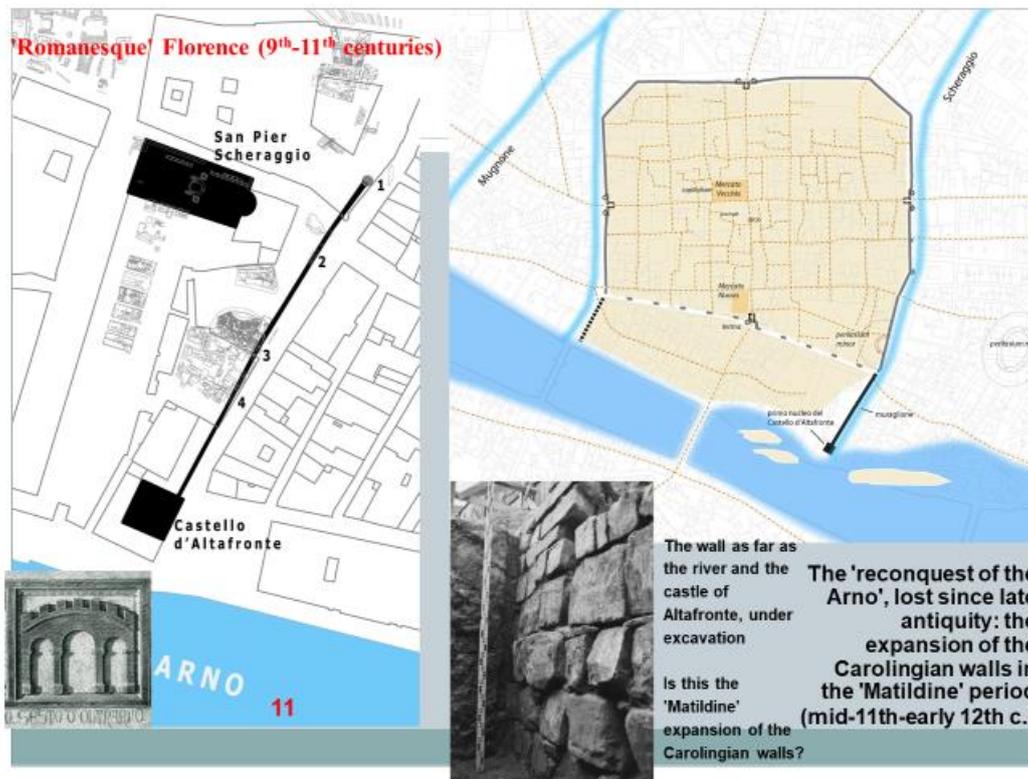


Fig. 11. Romanesque' Florence (9th-11th centuries). The 'reconquest of the Arno', lost since late antiquity: the expansion of the Carolingian walls in the 'Matildine' period (mid-11th-early 12th century). The wall as far as the river and the castle of Altafronte, under excavation. Is this the 'Matildine' expansion of the Carolingian walls?

After the influx of immigrants abruptly slowed down (from the second third of the 13th century), a courageous, radical and very costly qualitative restructuring of the 'stone city' was initiated, both vertically (the buildings) and horizontally (the topographical layout).

The operation involved the entire center of the city, which was reorganized urbanistically, while the incurred costs were not only economic - although, as we have said, huge: just to 'create' the space for the realization of Piazza Signoria, in just over 40 years, the cost amounted to several million gold florins - but also identity-related and emotional. In fact, dozens of noble palaces were demolished in the heart of the ancient, beloved city (remember the "*civitas vetus*", included in the "*cerchia antica*", regretted by a nostalgic Dante), 'only' to "straighten up" (as declared in the expenditure commitments) the tortuous and narrow streets inherited and no longer accepted; up to the demolition of the beloved ancient Cathedral, S. Reparata, because - as Giovanni Villani, the greatest chronicler of the city, wrote - it was considered too "*grossa*", rough, for the new *Florentia* that was rising, and to create Piazza S. Giovanni.

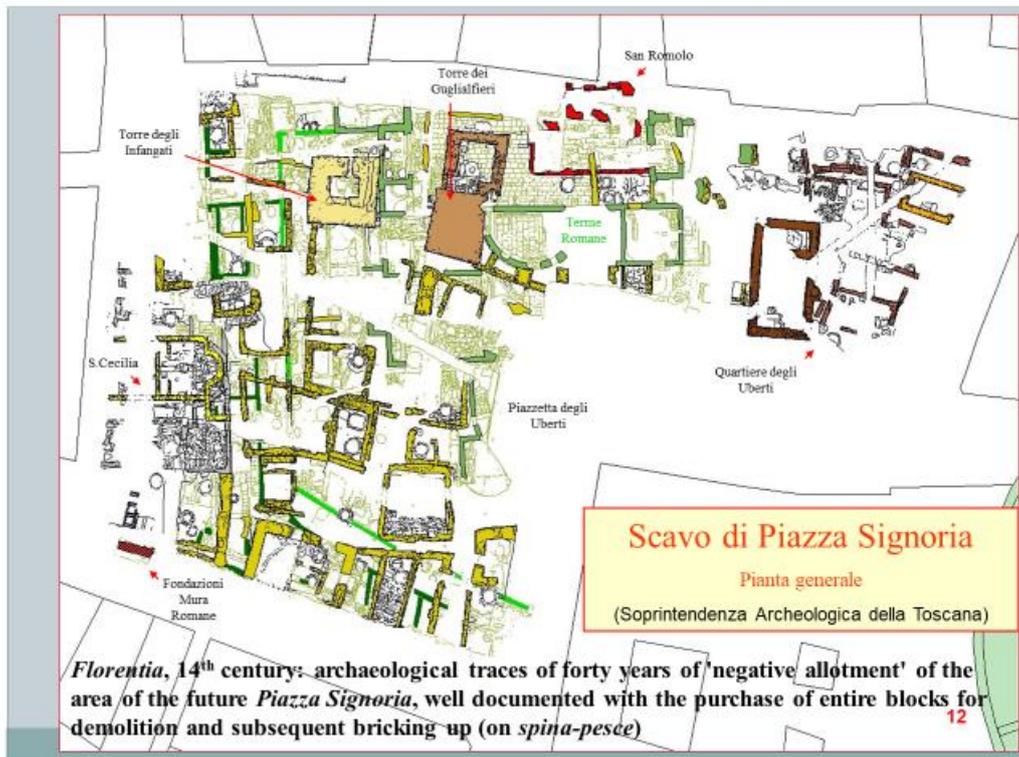


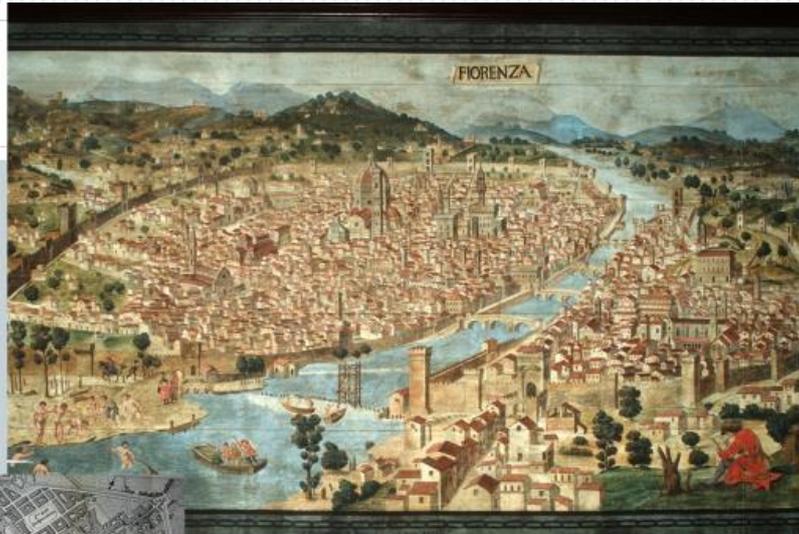
Fig. 12. *Florentia*, 14th century: archaeological traces of forty years of 'negative allotment' of the area of the future *Piazza Signoria*, well documented with the purchase of entire blocks for demolition and subsequent bricking up (on *spina-pesce*)

The three new squares (with the *mercatum novum* in 'Calimala', an expansion of the old *Mercatum Regis*: altogether a 'city of business', finally 'sealed' by the sixteenth-century Loggia 'del Porcellino': the Stock Exchange, we could say), conceived as a system, constitute the urban ordering center of the real heart of the city, based on the connection of a renewed monumental road system that directly connects the places representing the three fundamental civic powers, respectively religious, political, and economic.



Carta della catena,
1470, the oldest view of
a European town; the
'voids' in the urban
fabric can be glimpsed,
highlighting the
'thread-like' expansion
of the *borghi*: houses
lined up along street
axes with a vegetable
garden behind

**Un assetto
mantenuto
sostanzialmente
invariato almeno
fino a Firenze
capitale (1865)**



The reorganization of the new center of *Florentia*, 14th c.



Fig. 13. The reorganization of the new center of *Florentia*, fourteenth century. *Carta della catena*, 1470, the oldest view of a European town; the 'voids' in the urban fabric can be glimpsed, highlighting the 'thread-like' expansion of the *borghi*: houses lined up along street axes with a vegetable garden behind. A layout that remained substantially unchanged at least until Florence became the capital of the Nation (1865).

Each square is equipped with imposing structures that, even visually, represent the very essence of the 'new' city, in perfect cultural awareness and consequent material planning.

There are now the conditions for the rise of a new city, better responding to its role of leading metropolis of its times, on the eve of the Renaissance. Thus, the outskirts of the new *borghi*, particularly of *Oltrarno*, saw the application of the new urban planning (that we can consider the product of a humanistic culture turned to the ancient, in formation), experienced also in the '*terre nuove*' of the countryside, and then extended to the very heart of the city, where it came to constitute a new urban fabric (with the "*viae amplae et rectae*", such as Via Calzaioli). In short, an authentic paradox: at the end of the 13th century, the peripheries (both rural and urban) were urbanistically more advanced than the center of reference; a paradox that will be overcome, in fact, by the great 'Arnolfine' project.

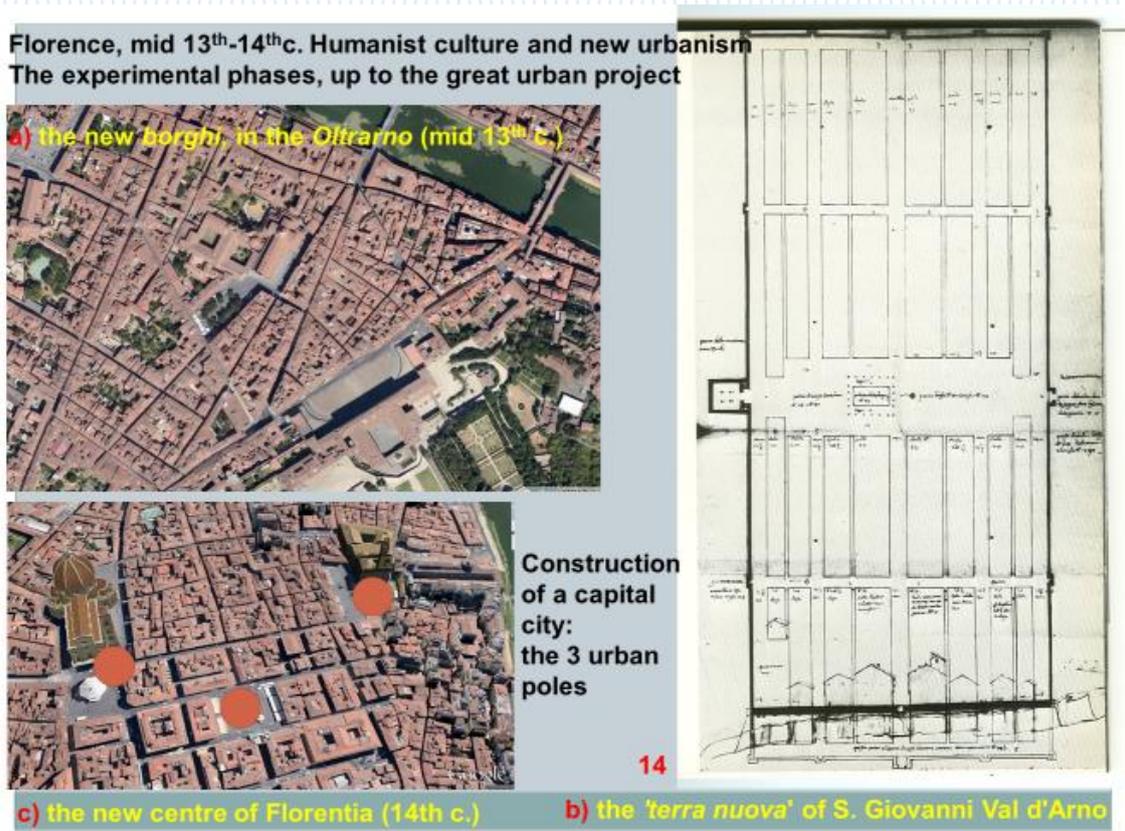


Fig. 14. Humanist culture and new urbanism. The experimental phases, up to the great urban project: a) the new *borghi* of the mid 13th century, in the *Oltrarno* area; b) the '*Terre nuove*' that controlled the district; c) the center of Roman and Carolingian *Florentia* resumed the chessboard scheme, reinterpreted in a new way.

The full maturation of the 'new' square in the medieval city is achieved in this way, a new conception of 'public place' - for a civil society, complex, articulated and deeply renewed on a cultural level (humanism as the basis for the next Renaissance season) - no longer simply subjected to primary uses but as a 'representative' seat, also in terms of aesthetic-formal visibility of new powers and new values: for the first time, a 'functional scenery' as an objective in itself. A solution tailored to new times, for the 'construction' of which they considered themselves protagonists, and not only for themselves; certainly, with the 'operative' pragmatism of a mercantile society that intimately combined theoretical conception and consequent realization: in this, maintaining the typical concreteness of the medieval tradition.

And yet this authentic transfiguration, which would have made the city unrecognizable to an inhabitant of only a few decades earlier, represents no more than the epiphenomenon of a structural mutation; in reality an evolution that responds to a 'new rationality' and is consequent to a precise identity tradition that,

not by chance, the intellectual class (essentially of mercantile origin, albeit in a broad sense), between the middle of the two centuries (13th and 14th), was elaborating, in the form of civil legends, historically founded narratives (even with mythological connotations); and Villani, who offers us a synthesis of this, with precise references to already ancient and lost sources.



Fig. 15. "La città di Firenze riedificata con l'aiuto di Carlo Magno" (Miniature dalla *Nova Cronica*, Villani, Codice Chigiano, Biblioteca Vaticana). After the neglect of the Langobard centuries, the Carolingian 'foundation' and the construction of the walls as the ideological foundation of medieval *Florentia*: formation of a 'traditional' urban identity

The cultural depth of this renewal of the urban environment emerges when the project begins with the first major operation: the 'construction' of the new *Piazza di S. Giovanni* (later '*del Duomo*'). An extraordinary series of documentary sources allows us to follow the whole operation for decades, between the early 1290s and the covering of *S. Maria del Fiore* in 1375.



Fig. 16. S. Reparata under construction, at the moment of the drafting of Bigallo's fresco (1342) and archaeological snapshot on the moment of the final demolition that determines the end of Giotto's fresco of the apse drafted for the beloved, old Cathedral when, in use, its demolition had already been sanctioned (1375)

Giovanni Villani's *Cronica* again sets the scene for an episode which, in its peculiarity, shows us a 'new normality' of widespread perception of an urban reality, which - since it is a city-world as *Fiorenza* was at the time - at the same time anticipates a soon to be universal mentality.

In order to create the space of the first 'representative' square of the new city, the first problem arising for the start of the construction site was the inevitable demolition of the ancient, beloved Cathedral, no longer considered adequate either for its size or for its artistic quality (the proto-Renaissance was already proposing the new aesthetic values that would later spread throughout Europe). But it was also necessary to enlarge the delicate space that faced the Baptistery, also a symbol of being Florentine, since time immemorial: "*Nel detto anno MCCLXXXVIII, ... i cittadini s'accordarono di rinnovare la chiesa maggiore di Firenze, la quale era molto di grossa forma e piccola a comparazione di sì fatta cittade, e ordinaro di crescerla, e di trarla addietro, e di farla tutta di marmi e con figure intagliate.*"

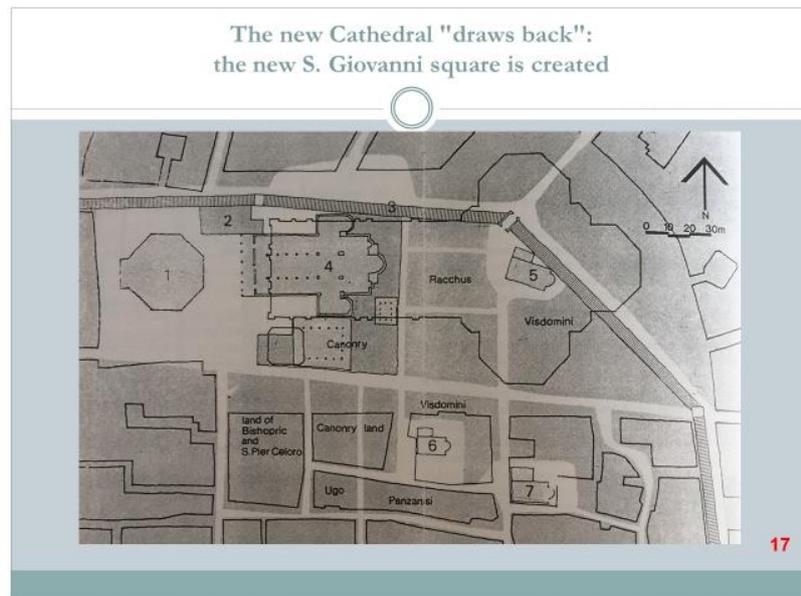


Fig. 17. The new Cathedral "draws back": the new S. Giovanni square is created

That in the case of the demolition of S. Reparata the costs were also of an emotional nature and were faced with an intellectual courage that should make us reflect not only on this episode, is shown by the fact that "*fondossi con grande solennitade*" the new Cathedral, "*nominandola Santa Maria del Fiore, con tutto che mai no lle si mutò il primo nome per l'universo popolo, Santa Reparata.*". So much so that we know of dispositions of the municipal authorities that carried penalties for those who continued (even in writing and in official acts) to call the new Cathedral by its old glorious name: and this until the middle of the 15th century!

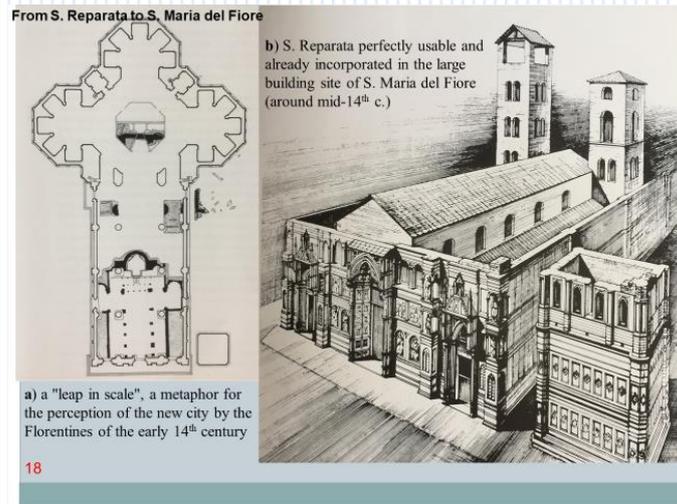


Fig. 18. From S. Reparata to S. Maria del Fiore: **a)** a "leap in scale", a metaphor for the perception of the new city by the Florentines of the early 14th century; **b)** S. Reparata perfectly usable and already incorporated in the large building site of S. Maria del Fiore (around mid-14th c.)

It is worth noting how this 'S. Reparata project' truly constitutes a paradigm at the crossroads of a long history of the Florentine urban community, where a civic tradition linked to the origins of the 'Romanesque' city and to its impetuous but rational development, also made of 'topographical inventiveness' (decentralized allotments, systematic reception, the invention of *borghi* and their relationship with the growth of the defenses, etc.), is combined with an authentic revolution such as the season that is being outlined here and that is expressed in a real and also qualitative 'explosion' of energies.

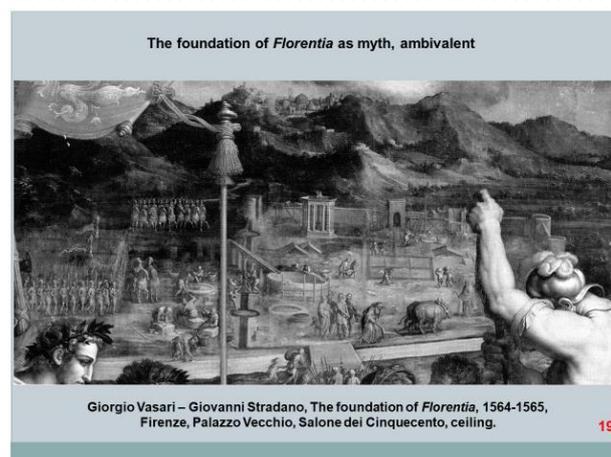


Fig. 19. The foundation of *Florentia* as a myth (Giorgio Vasari - Giovanni Stradano, The foundation of *Florentia*, 1564-1565, Florence, *Palazzo Vecchio*, *Salone dei Cinquecento*, ceiling)

3. A new city, at the origins of modern Europe.

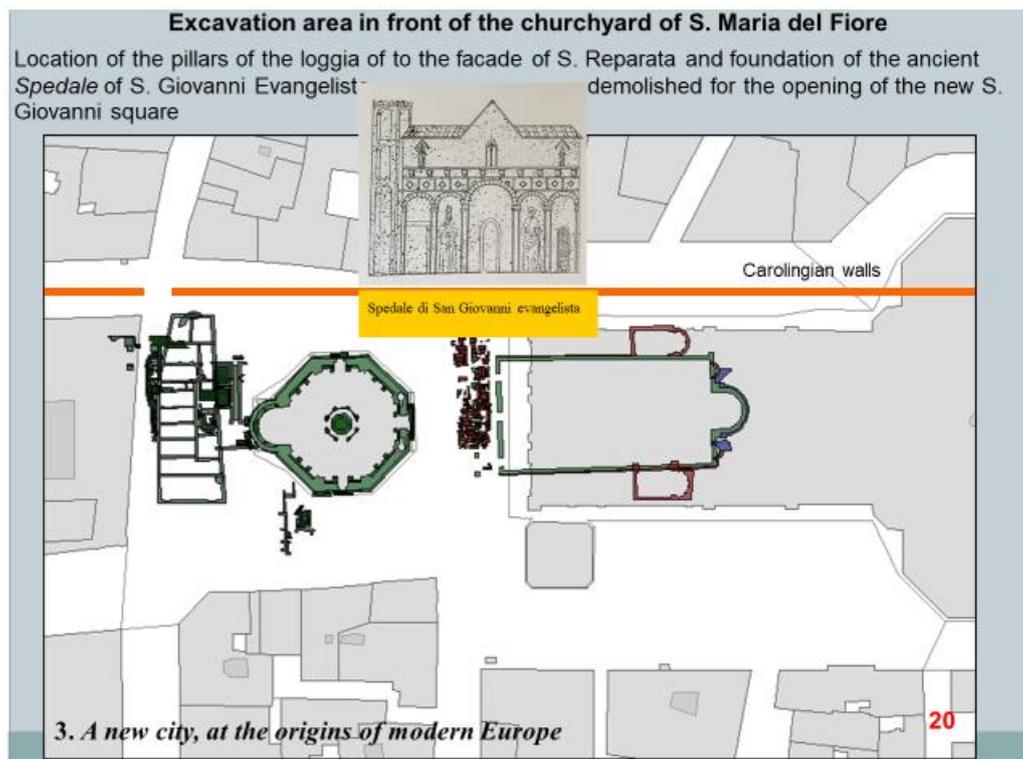


Fig. 20. Excavation area in front of the churchyard of S. Maria del Fiore: a) location of the pillars of the loggia of to the facade of S. Reparata and foundation of the ancient Spedale of S. Giovanni Battista, demolished for the opening of the new S. Giovanni square; b) drawing of the Spedale of S. Giovanni (...)

Well, as we were saying a moment ago, an authentic historical phenomenon such as the overcoming of the 'city of Dante' - which began concretely and on a large scale with the building site of S. Reparata - can be well understood from a small episode, just casually mentioned in a document written in 1295 (with precise archaeological evidence), but which reveals to us, behind a topographical note, the real dimension of the change of mentality that had occurred in the urban community of Florence compared to the previous generation.

As part of the work of enlarging the churchyard between the loggia of the old S. Reparata and the (future) gate of Paradise, which opened in the eastern 'clove' of the 'bel S. Giovanni' - for the construction of the new square, achieved above all by "drawing back" the facade of the new S. Maria del Fiore, as we have seen - another

old monument of the city was demolished: the ancient *Spedale* of S. Giovanni Evangelista, which had been reused for some decades as the city's salt warehouse.

The so obtained enlargement of the new square to the north (generally observed; here we note the absolute novelty of an operation such as this: to demolish a building and 'not' use the obtained, precious, intramural urban space) had the obvious consequence that the rear front of the residential buildings came to face the new square, constituting part of the northern limit.

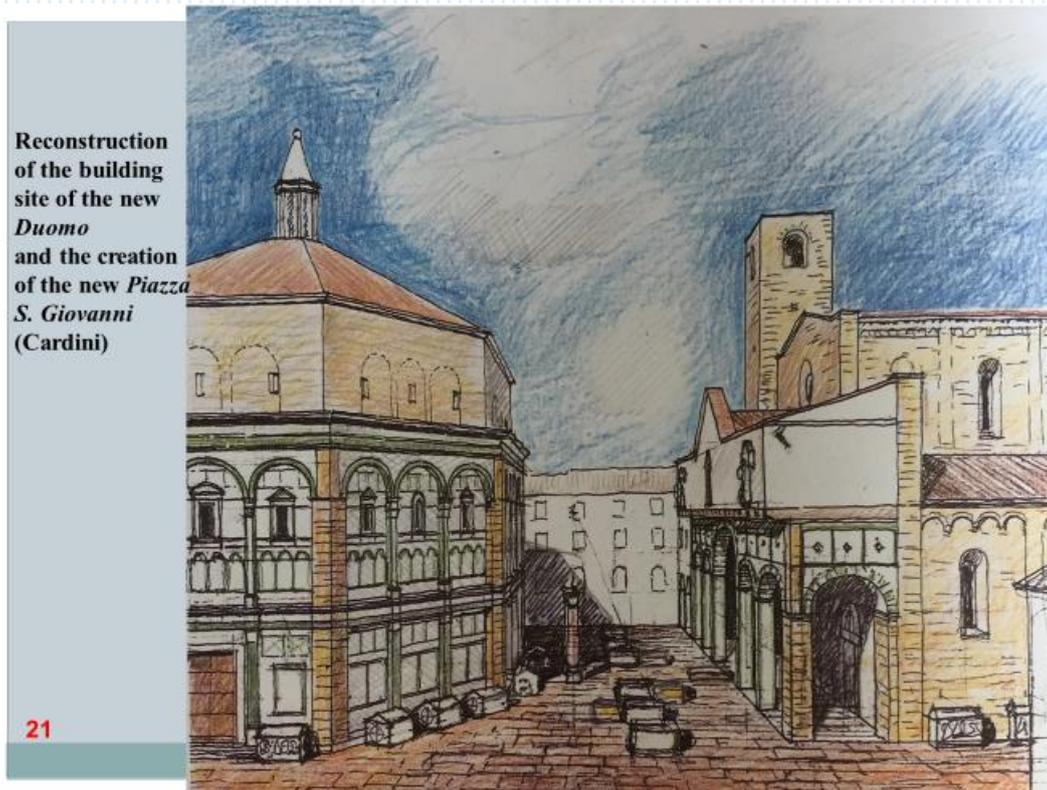


Fig. 21. Reconstruction of the building site of the new *Duomo* and the creation of the new *Piazza S. Giovanni* (Cardini)

Well, here we can measure the acceleration of the 'long time' typical of a structure (always referring to the historical categories of Braudel and Le Goff, of course) such as mentality or, if you want, the 'cultural vision of the world': there was in fact an immediate increase in both the value and the rents of the buildings, just because of this 'immaterial' change of topographic condition. An economic adjustment that the Florentines from even the first third of the 13th century would not have even understood, and that appears obvious to us modern-day observers (all of us) only and precisely because we are sons and heirs of the new world that was being built here.

We must add that we were talking about the construction of a new model of city-capital of a territorial state in the making, supplanting in the county, after a centuries-long confrontation, the feudal aristocracies, the ruling class of a traditional rural society that was thus entering a true, contemporary (with what was happening in the city: in reality two sides of the same coin) change of an era.

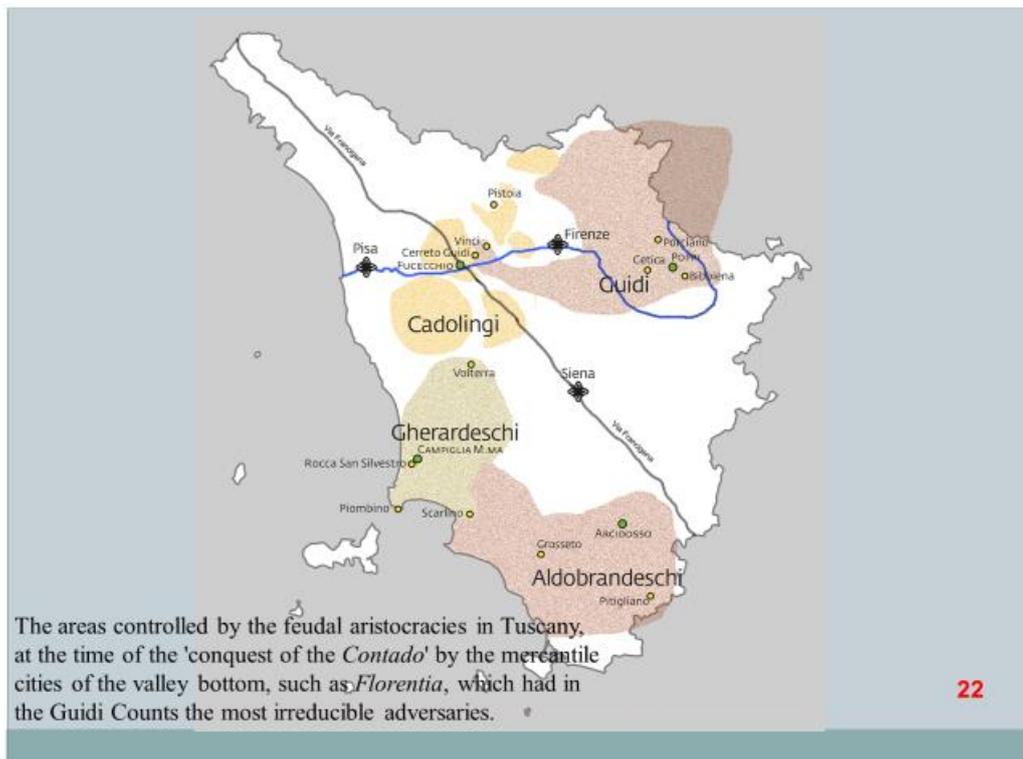


Fig. 22. The areas controlled by the feudal aristocracies in Tuscany, at the time of the 'conquest of the *Contado*' by the mercantile cities of the valley bottom, such as *Florentia*, which had in the Guidi Counts the most irreducible adversaries.

A striking example is offered to us by Villani; there is a notation - a city, the new *Florentia*, "*Ma-ssi magnifica cosa era a vedere, ch'uno forestiere non usato venendo di fuori*" - a city in the moment of its transformation, that tells us about travelers who (also here) did not have a concrete ('useful') reason to do so: we would say, for the first time, 'tourists'....

In reality, a new, substantial image of the city as such; a renewed urban landscape as the mirror of a new dimension of reality, perceived and interpreted with courage and vision; a new society, a new economy, a new culture, at the origins of modern Europe, achieved with an imagery that was already developing in a key that would

soon be defined Renaissance, but that was being built with the realism and concreteness proper of a still fully medieval tradition.

A program at the center of painful battles, interpreted by a frowning Dante, but carried out with stunning determination, in absolute continuity - a clear symptom of a 'project' strongly shared by the ruling class, of mercantile origin, it should be remembered - as is clearly visible also in the creation of the second great urban pole: after the 'ecclesiastical' pole, the 'political' one, the creation, also in this case combined, of the *Palazzo della Signoria* and of the large square in front of it (not by chance the largest in the city).



Fig. 23. Palazzo e Piazza della Signoria, il polo civile e urbanistico della nuova *Florentia* del sec. XIV

In just a few decades, between the 13th and 14th centuries, these merchants radically redesigned the center of their city, 'inventing' the square as a concept - which would later be ours - and a new way of understanding and living the city, as the organizing center of society and of a precise area of reference: the very intense works - the 'city of Arnolfo', as the urbanists call it - cost enormous amounts of money (millions of gold florins over 6-7 decades), all regularly accounted for: the 'reason'? "*ad maiorem decorem civitatis Florentiae*". That's all; only expenses, no earnings. They had only

created the premises for the following season: the Renaissance (on which we Florentines still live, and not only because of the economy).

Yet the Florence of that time was a typical society of merchants, therefore accustomed to numbers and accounts that had to 'add up', and not to more or less intellectual, abstract or rhetorical dreams; and not even to acts of patronage in the 'free' personal availability of an absolute prince. Merchants who, evidently, in governing their city were nevertheless capable of cultivating a constructive and 'disinterested' 'vision'; that is, of 'investing' in the long term in projects whose fruits they knew would be reaped only by their descendants, who still live off this inheritance: a form, we might conclude (and given the results, in the short, medium and long term), of 'superior rationality'.

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CONTEMPORARY USE OF CULTURAL LANDSCAPE

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Cultural Landscapes Modern Use and Digital Cultural Heritage technologies⁷⁰

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I. Cultural Landscapes and Geographic Information System

I.1. Cultural Landscapes and information technologies

Tangible and intangible assets, the output of Human-Nature interaction in time, require examination and evaluation in order to identify and substantiate sustainable Cultural Landscapes (CL) modern use and their management methodology. Luengo (2015) argues that significant shifts relating to the paradigm of landscape and its conservation are taking place, derived from people searching to establish their roles in historical and spatial processes. Shifts that are accentuated by new communication and information technologies that have erased our traditional concepts of time and space. Similarly, Yang and Han (2020) describe a rapid progress in the application of digital technologies that acquire, store, analyse and share information about cultural heritage. They continue stating that since UNESCO first applied a computer-assisted information management system in 1992 to support the efforts of the Cambodian government to protect Angkor Wat, a rapid increase in new technologies has revolutionized cultural heritage conservation activities.

The application of digital media in the research, identification, interpretation, management, preservation and representation of Cultural Heritage create the foundation of Digital Cultural Heritage. The concept of Digital Heritage according to UNESCO (2003) (2009):

Digital heritage is made up of computer-based materials of enduring value that should be kept for future generations. Digital heritage emanates from different communities, industries, sectors and regions. Not all digital materials are of enduring value, but those that are require active preservation approaches if continuity of digital heritage is to be maintained.

1. Resources of human knowledge or expression, whether cultural, educational, scientific and administrative, or embracing technical, legal, medical and other kinds of information, are increasingly created digitally, or converted into digital form from existing analogue resources.

Where resources are "born digital", there is no other format but the digital original.

2. Digital materials include texts, databases, still and moving images, audio, graphics, software, and web pages, among a wide and growing range of formats. They are frequently ephemeral, and require purposeful production, maintenance and management to be retained.

3. Many of these resources have lasting value and significance, and therefore constitute a heritage that should be protected and preserved for current and future generations. This heritage may exist in any language, in any part of the world, and in any area of human knowledge or expression.

Along this direction Wang et al. (2019) extend the UNESCO Digital Heritage concept adding that, unless otherwise specified, the term “*Digital Heritage*” can be understood as “*Digital Natural and Cultural Heritage*”, which means digital resources or products converted from existing natural and cultural heritage or analogue resources. It includes dynamic or static digital information, the output of digitization processes, i.e. creation and documentation, preservation and protection, processing, dissemination and presentation processes. Therefore, digital heritage focuses on the digital products derived from its cultural and natural heritage ontologies and related environment and aims to transform these into new digital products in the form of knowledge, derived from noncontact and non-destructive ontologies. Yet, while there has been significant interest in both digital cultural heritage and cultural landscapes over the past few decades, the junction between the two remains essentially under-explored. Most digital conservation research and practices are still based on the “conventional” concept of cultural heritage, in which buildings, archaeological sites and monuments are the main objects for the application of digital tools. (Yang and Han 2020).

Digital heritage research shares some common characteristics of cultural heritage and is centred on the techniques and knowledge for (Wang et al. 2019):

- 1.** Digitalization of the heritage ontology
- 2.** Preservation of digital heritage
- 3.** The use of digital heritage
- 4.** Demonstration, sharing, and publicity of digital heritage
- 5.** Laws and regulations on digital heritage protection.

Through digital technologies such as photogrammetry and remote sensing digital cultural heritage (Table I) can realize non-destructive archaeological detection, digital archiving, dynamic monitoring and evaluation of heritage, and support the preservation and sustainability of the heritage ontology and the environment on which it relies (Wang et al. 2019).

Technical methods for digital cultural heritage research include:

i: Space archaeological technology

Worldwide earth observation technology from space, air to ground and underground exploration technology are used to detect and discover archaeological objects. This remote sensing offers non-destructive detection and documentation of archaeological sites and cultural heritage in the form of multi-resolution, multi-spectral satellite images. Besides geomorphological features and geophysical exploration, they can reveal tracers of anthropogenic activities that often can be interpreted through time (Figure 1). Employing geographical information systems (GIS) tools offers the possibility to map aerial and ground observations for later analysis and interpretation.

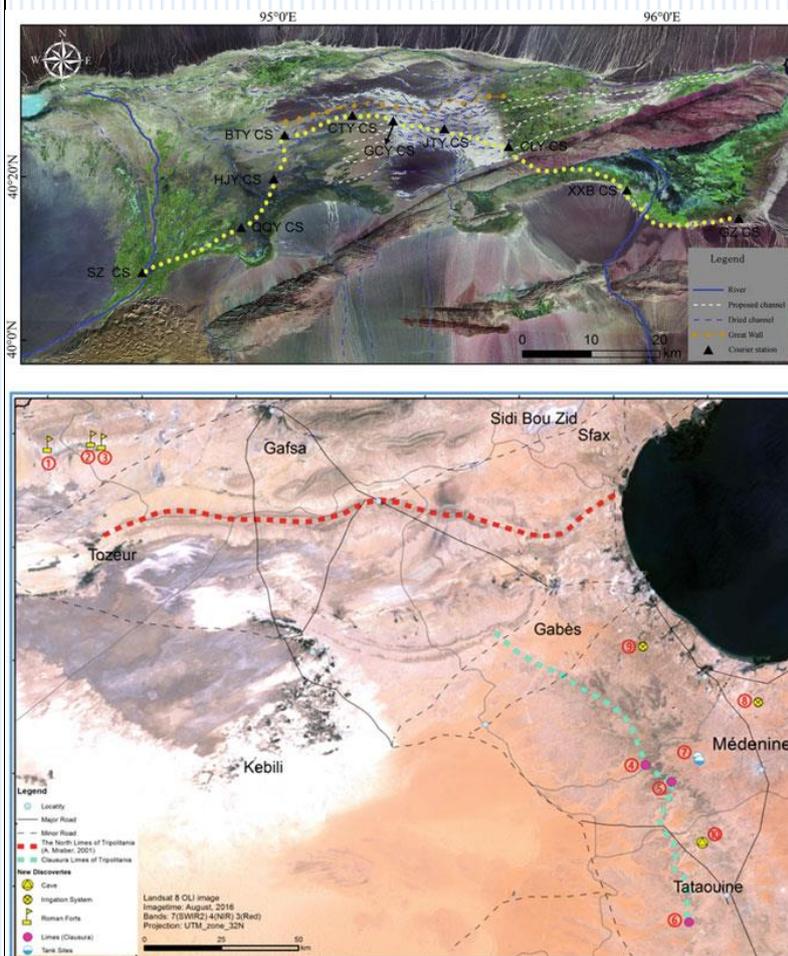
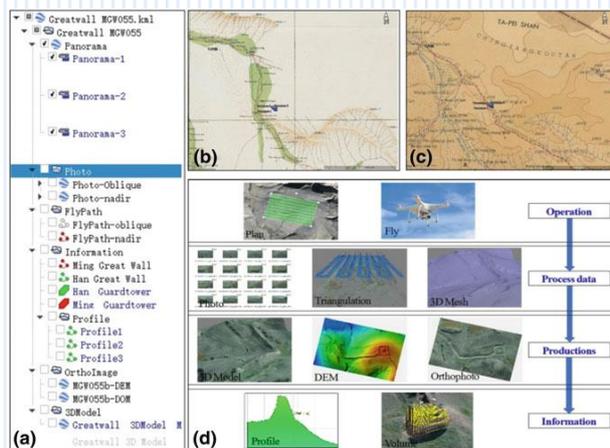


Figure 1. Space archaeology of the silk road in China (top) and Southern Tunisia (Wang et al. 2019)

ii: Digital recording and preservation of Cultural Heritage

Accurate digital recording is the premise of heritage protection and monitoring. Based on principles of photogrammetry and remote sensing it collects and digitizes ground control points by acquiring satellite and aerial high-resolution remote sensing images, and uses photogrammetry software to produce high-precision maps of the heritage ontology. Through the three-dimensional (3D) data acquisition equipment of

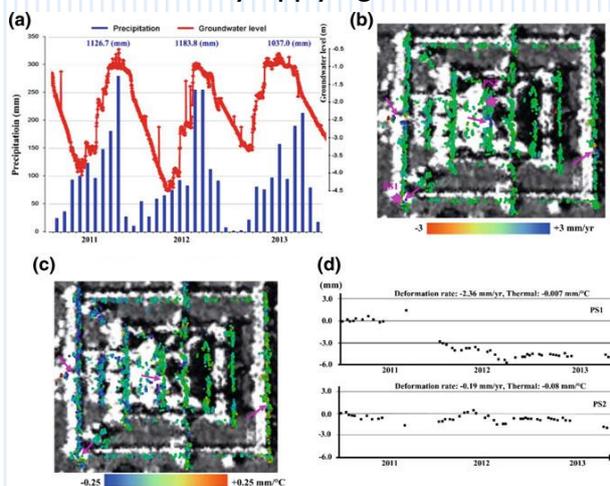


aerial, low-altitude aerial, car-based or ground platforms, 3D modeling software is used to construct 3D models and record the shapes and spatial attributes of the heritage ontology and the environment. A large heritage database system that can be queried and updated is then formed using GIS and database technology to digitally manage various types of heritage information (Figure 2).

Figure 2. The integration of geospatial data of the Great Wall in north-western China. a. The overall tree structure of the KML layers in GE; b. the archaeological maps made by Stein; c. the archaeological maps made by Hedin; d. the operation flowchart for our UAV investigation (Wang et al. 2019)

iii: Heritage ontological and environmental dynamic monitoring

By obtaining data on the same heritage object at different times, through comparative analysis, changing information identification and model calculation, the status and potential risks of the heritage object can be evaluated. Earth observation technology has great potential for monitoring large cultural heritage remotely and dynamically and even in 3D form. The analysis and evaluation of the situation and risk of the heritage object are conducted by applying artificial or intelligent remote sensing recognition technology



and monitoring and identification algorithms on remote sensing data at a certain interval (appropriate spatial resolution, spectral resolution and temporal resolution, etc.) or 3D digital models (Figure 3).

Figure 3. Angkor's environmental remote sensing revealed the collapse of ancient temples and contributed to the sustainable protection of heritage sites (following Chen et al. 2017 in Wang et al. 2019)

iv: Heritage demonstration on Virtual Reality technology

Virtual reality (VR) is a new and integral technology in the sphere of computer science, which developed from the integration of disciplines involving computer graphics technology, multimedia technology, sensor technology, human-computer interaction technology, network technology, stereo display technology and simulation technology. With advantage of lifelike, immersive reconstructions (Figure 4), it can be applied in cultural heritage research, restoration and digital virtual tourism. The seamless integration of digitalization and virtual reality technology can be an effective means for digital protection.

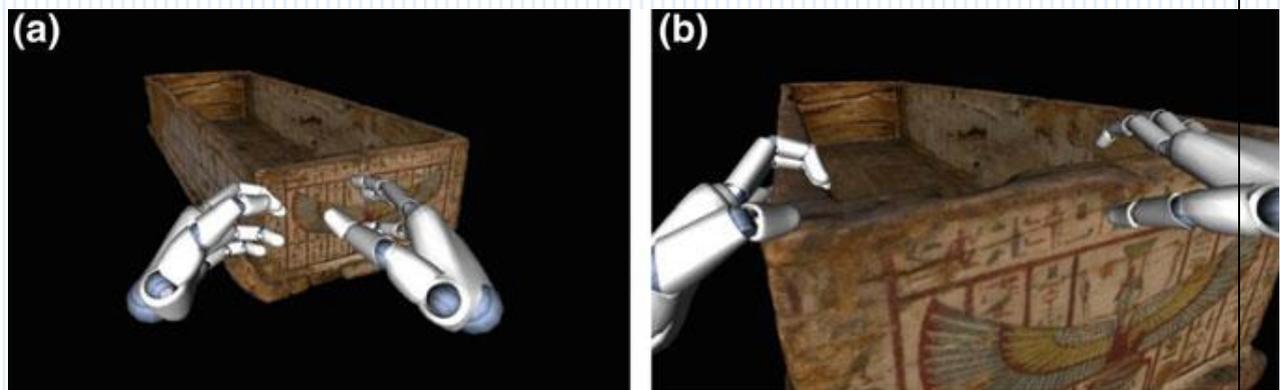


Figure 4. Pictures of the implemented VR scenario: a, b grabbing and rotating of an object with the option to enlarge it (following Barsanti et al. 2015 in Wang et al. 2019)

Table I. Technical methods for digital cultural heritage research. Digital Heritage (Wang et al. 2019)

Yang and Han (2020) summarize the research and practices of digital cultural heritage today in five themes:

1. Cultural heritage information integration and management based on GIS technology
2. Open geospatial systems and standards using network-based information platform
3. Simulation of the past, present and future of cultural heritage sites based on spatial technology
4. Representation of cultural heritage appearances based on virtual or augmented reality tools
5. Visualization of cultural heritage using computer game technology.

They propose a theoretical framework for a digital information system for cultural landscapes, established based on the review of both cultural landscape theories and cultural heritage technologies (Figure 5). The inner-circle (green) in the diagram contains the most important features and elements that must be digitally represented in the information system. According to the landscape character theory, the natural and cultural, and tangible and intangible cultural landscape features are included in the framework. The outer circle (blue) contains the digital methods and technologies involved in the conservation of cultural heritage, which covers the cultural landscape information collection, management, and sharing tools. The theoretical and technical systems are intertwined and play a role in the investigation, analysis, management and interpretation of cultural landscape heritage. The following case study and digital information system design were based on this framework.

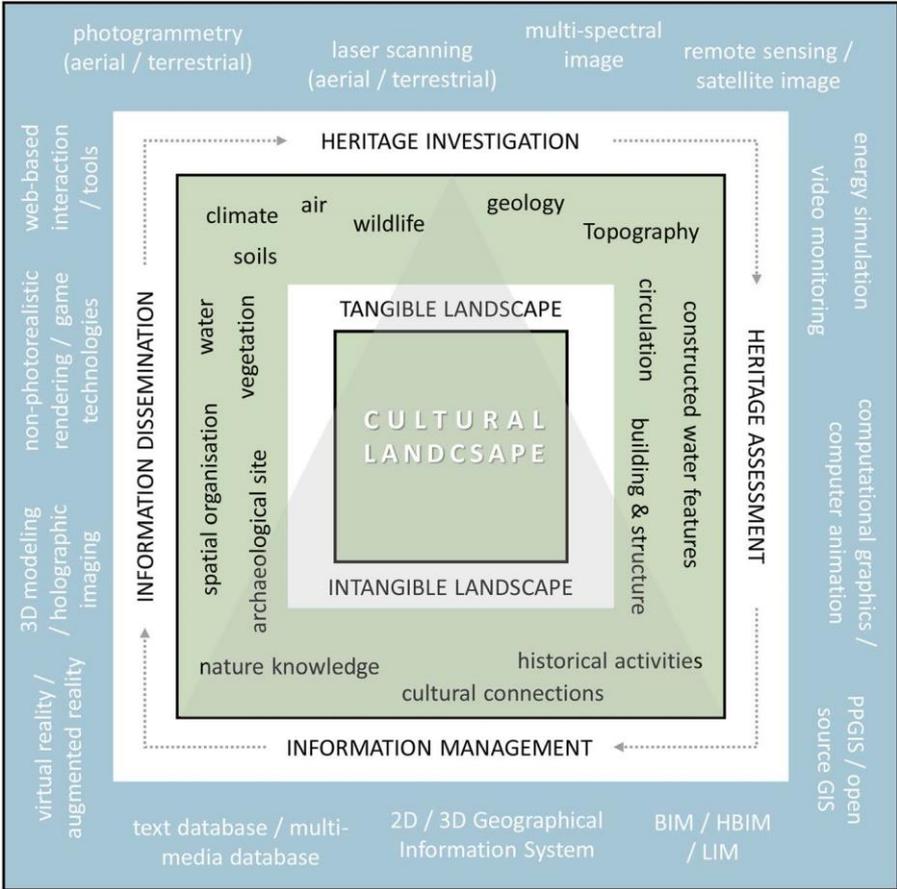


Figure 5. A theoretical framework for digital cultural landscape information system (Yang and Han 2020)

1.2. Modern use Cultural resource management and GIS

Box in “GIS and Cultural Resource Management: *Manual for Heritage Managers*” (UNESCO 1999) notes that the focus on the use of modern electronic and computer-based information technologies to support safeguarding of heritage is a relatively recent initiative, with the decisive step being the case of the World Heritage site of Angkor in Cambodia. The Angkor Zoning and Environment Management Plan (“ZEMP” as it became known), used computer-assisted GIS to integrate data from the fields of archaeology, geology, hydrology, climatology, environmental science and demography together with plans being prepared for the development of agriculture, irrigation, road construction and tourism. The purpose of compiling such an integrated database was to encourage planners and developers from all departments to work to the same plan thereby ensuring that the archaeological remains of Angkor would not be endangered by ill-conceived or uncoordinated actions.

The World Heritage standards require that a monument, group of buildings or site - together with its buffer zone - must be clearly defined. They also require that the values and qualities - or cultural significance - of the property must be clearly stated and that the management plan developed for the property must explicitly address the issue of the preservation of those values. Thus, the cultural significance of a site is what guides the management policy and consequent strategies for protection and preservation. GIS is a tool for putting policy into practice, having valuable application to each of the four principal procedures involved in preparing management plans for cultural heritage sites (UNESCO 1999).

These procedures are:

- 1. Research:** Historical and physical site documentation
- 2. Analysis:** Assessment of physical condition, cultural significance and social and administrative context
- 3. Response:** Preparing conservation and management strategies
- 4. Implementation:** Carrying out, monitoring and evaluating management policies

I.2.1 Protection and monitoring

The design of suitable conservation and protection policies is determined by the authenticity and cultural significance of a site. These policies define the degree of protection and the depth of intervention needed. Site managers can implement a number of different strategies for conserving the cultural resources of a site while maintaining a sustainable level of site visitation and use. For this purpose, the establishment of management zones can be an effective protection mechanism especially when combined with the monitoring of visitation limits or the “carrying capacity” (Table 2) of each zone” (UNESCO 1999).

Measurable constituents for the carrying capacity at heritage sites:

i: Physical damage to components of a site and the surrounding environment

ii: Cultural, economic and political stability of the host community

iii: Level of visitor education and satisfaction

Carrying capacity extension management practices and measures:

i: Zoning of areas for protection, public access and infrastructure development

ii: Creative routing to distribute visitor impact more evenly and towards the less vulnerable parts of the site

iii: Redirecting visitor attention to previously unknown or ignored, but nonetheless interesting, places

Table 2. Protection and Monitoring of cultural resources. GIS and Cultural Resource Management: Manual for Heritage Managers (UNESCO 1999)

Box (UNESCO 1999) concludes stating that GIS is invaluable for the establishment of management zones as well as for both monitoring the impact of visitors and for planning and redirecting visitation schedules and routes. GIS enables site managers to plan a regimen for the protection of a site through the scheduling of maintenance, the prioritization of repair work and the siting of any necessary new constructions in areas of low impact on the heritage value of the site. In addition, it is also a useful tool for monitoring environmental changes at a site and for tracking any demographic changes in the surrounding population. Thus, site managers can then make informed decisions about the need for and impact of infrastructure developments or other on- and near-site interventions.

1.2.2. Cultural resource management and GIS

Yang and Han (2020) report that CLs compared to other types of cultural heritage have specific features, regarding their scope, scale, components, data update cycles and needed precision. Conventional information management methods and tools make difficult an effective and successful cultural landscape management, due to their systemic inadequacy of providing information for decision making. The processes of cultural resource management (CRM) span from initial identification of resources to protection to rehabilitation and presentation. These processes are applicable to the management of all heritage sites. GIS can be used as a tool to aid in all these activities, with the following potential management applications (Table 3) (UNESCO 1999):

Potential cultural resource management GIS applications	
i: Facilities management	For facilities management, GIS is used in the day-to-day management and maintenance of a heritage site. The application is site-specific and is used for the collection and management of detailed information on individual structures, spaces and associated site infrastructure.
ii: Resource inventory and assessment	In the past, GIS has been extensively used for natural resource inventorying, assessment, management and exploitation. However, GIS is equally applicable to CRM. For example, GIS can be used in the assessment of the spatial distribution of natural or cultural resources. GIS can be used to identify and assess potential threats from natural and man-made hazards, and to aid in the development of suitable protection zoning strategies.

iii: Archaeological research

GIS has already proven its usefulness as a tool in the field of archaeological research. Archaeologists use GIS to inventory, research and analyse known cultural resources and to carry out predictive modelling. Predictive modelling analyses the correlation between environmental, topographic, socio-cultural and economic factors, and the location of known cultural resources to identify the most likely locations for undiscovered cultural resources.

Table 3. Potential cultural resource management GIS applications. GIS and Cultural Resource Management: Manual for Heritage Managers (UNESCO 1999)

Yang and Han (2020) highlight through the example of Chinese CLs, consisted of ample tangible and intangible components, the loss of heritage information in the course of rapid development and landscape changes, due to the inability of existing systems to present, document and integrate the invisible dimensions of cultural heritage. They argue that GIS is the most revolutionary approach to cultural heritage documentation and conservation, especially for cultural landscapes, linking locations, geographically, to the properties of these locations. Concluding Box (UNESCO 1999) states that employing GIS, for the purposes of archaeological research or national inventory, will greatly affect the design, data content and ultimately the cost of the system. Although a GIS is most commonly implemented for a specific objective, it can also be used to assist cultural heritage managers in a wide variety of applications. The scope and coverage of a GIS can vary from site-specific to national inventorying applications depending on the needs to be addressed.

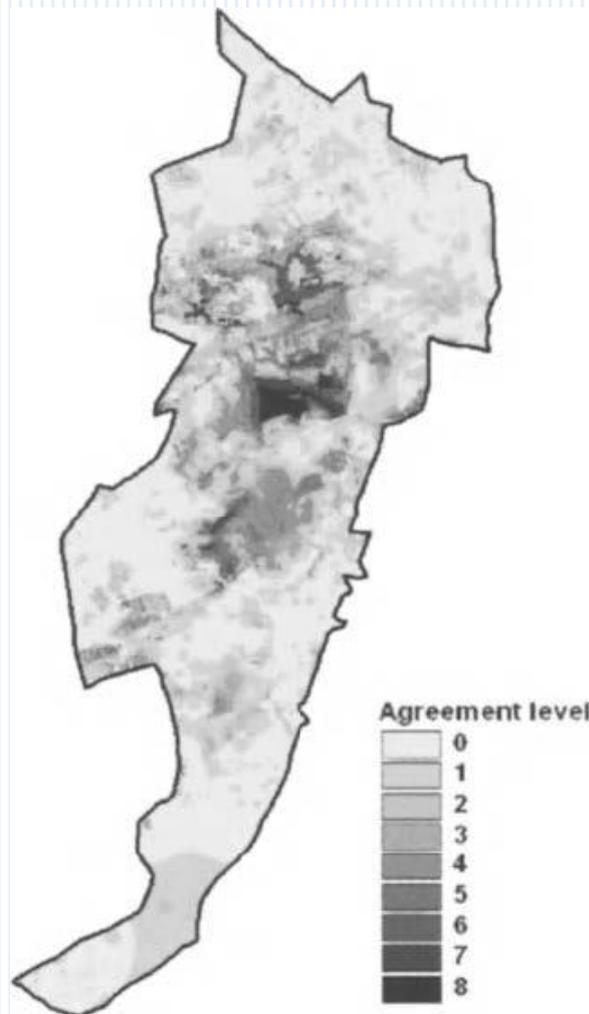
1.2.3. Stakeholders and GIS

Laidet (2015) concludes in four strategic components integration into the Val de Loire World Heritage site management that will guarantee the sustainability of the landscapes quality.

1. Knowledge and protection of the structuring elements of the landscape and, in particular, of the geomorphological and anthropological characteristics that shaped the representations of the landscape as recognized in the World Heritage inscription.
2. The appropriation of such characteristics by the inhabitants and decision makers to extend the understanding of what accounts for the site's landscape and heritage quality from the individual to the entire community in order to establish a common public culture.

3. A sustainable development strategy for the territory that defines the compatibility conditions for new projects in order to integrate them into the structuring elements that comprise the heritage landscape.

4. The implementation of projects that involve the inhabitants because they are the “end-users” of the landscape, and they are the main stakeholders who together ensure its maintenance and its transmission to future generations.



The call for collaborative governance and management, with participating stakeholders, researchers, locals and managers, brings forward a construct where different groups express values, attitudes and terms of action in often competing ways. The problem context for such an agenda is how to manage and overcome the many different visions of landscape people hold. Challenging the exclusive authority of expert knowledge within decision making, Fish et al. (2003) argue that GIS offers the possibility for the development of decision support tools that can provide a successful input into methodologies where different individuals and groups articulate and discuss different and sometimes opposing visions and possible scenarios for landscape management. The mapping of those visions creates stakeholders vision spaces, which overlaid highlights the different extends to which they coincide (Figure 6).

Figure 6. Levels of agreement between the eight stakeholder vision spaces (Fish et al. 2003)

Thus, GIS creates a science–stakeholders platform for stakeholder deliberation that facilitates the process of integrating, comparing and contrasting stakeholders’ visions. Additionally Fish et al. (2003) note that GIS is ideal if the process of problem solving is understood as an iterative process, where in the attempt to solve the problem, more about the problem is discovered. Each iteration refines the problem and more

issues and complexities at stake are revealed (Figure 7) (Dorst 2004) (Lawson 2006), where ideally different social constituencies, institutional or otherwise, consent to a management scenario.

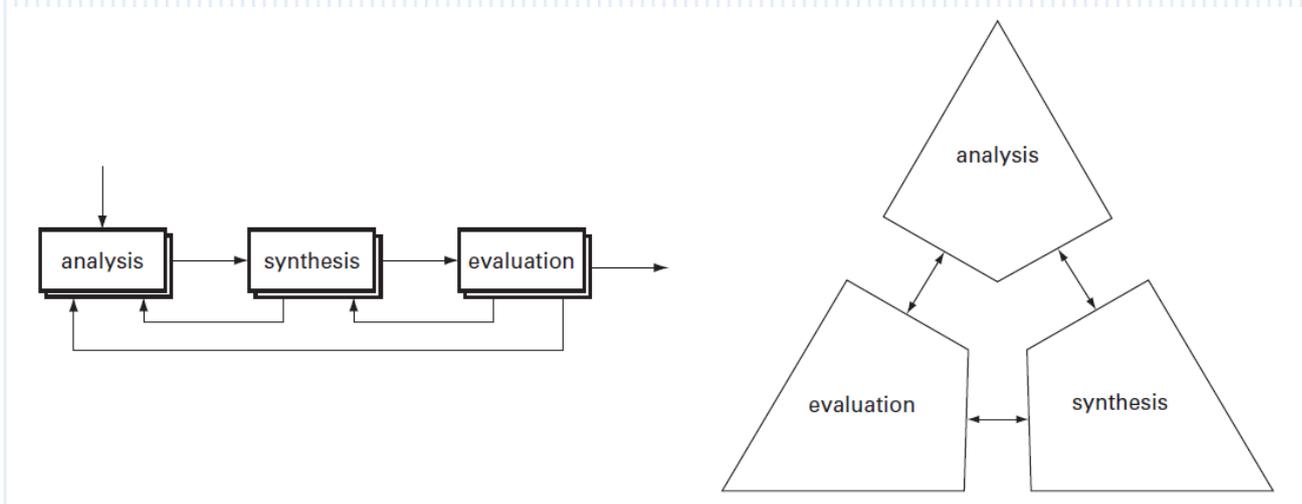


Figure 7. (Left) A generalised map of the design process and (Right) A more honest graphical representation of the design process (Lawson 2006)

Ortsin (2015) describes 5 steps in adaptive collaborative management strategy

1. Establish a baseline for the landscape through participatory approaches.
2. Develop an action strategy for change based on the baseline information.
3. Select indicators for tracking progress toward realizing desired outcomes described in the strategy based on the traditional resilient practices.
4. Put in place monitoring mechanisms and learn how the landscape is progressing toward the desired outcomes (goals).
5. Adapt a management strategy to reflect changes in the landscape and needs of people who live there.

1.3. Advantages of using a GIS

The decision to implement a GIS will be greatly influenced by financial considerations. Although the costs of GIS implementation are quantifiable, it is very difficult to assess the benefits of GIS utilization in financial terms (UNESCO 1999).

In terms of efficiency, GIS has the following advantages over manual data management (Table 4):

GIS advantages over manual spatial data management

i

Data are maintained in a physically compact and durable format, i.e. as digital files on magnetic or optical storage devices.

ii

Data can be quickly and easily accessed, retrieved and updated.

iii

Graphic and non-graphic data are linked, and can be manipulated, analysed and retrieved simultaneously.

iv

Changes in geographic phenomena can be monitored and analysed for different time periods.

v

Interactive graphic design and computerized drafting tools can be used to create cartographic products.

vi

Certain analyses that would be difficult or prohibitively expensive to perform manually can be cost-effectively performed using GIS.

vii

GIS can be used to integrate a wide variety of data types and formats from many different sources. Decision-makers can therefore make better-informed choices based on the most current data.

Table 4. GIS advantages over manual spatial data management. GIS and Cultural Resource Management: Manual for Heritage Managers (UNESCO 1999)

and artworks depicting the landscape, can be accessed through the powerful multimedia linking function of the geo-database and integrated into landscape evaluation and management processes (Figure 10). By relying on the database's collection of rich heritage information, the development of intelligent interpretation systems for cultural landscapes will be possible (Yang and Han 2020).

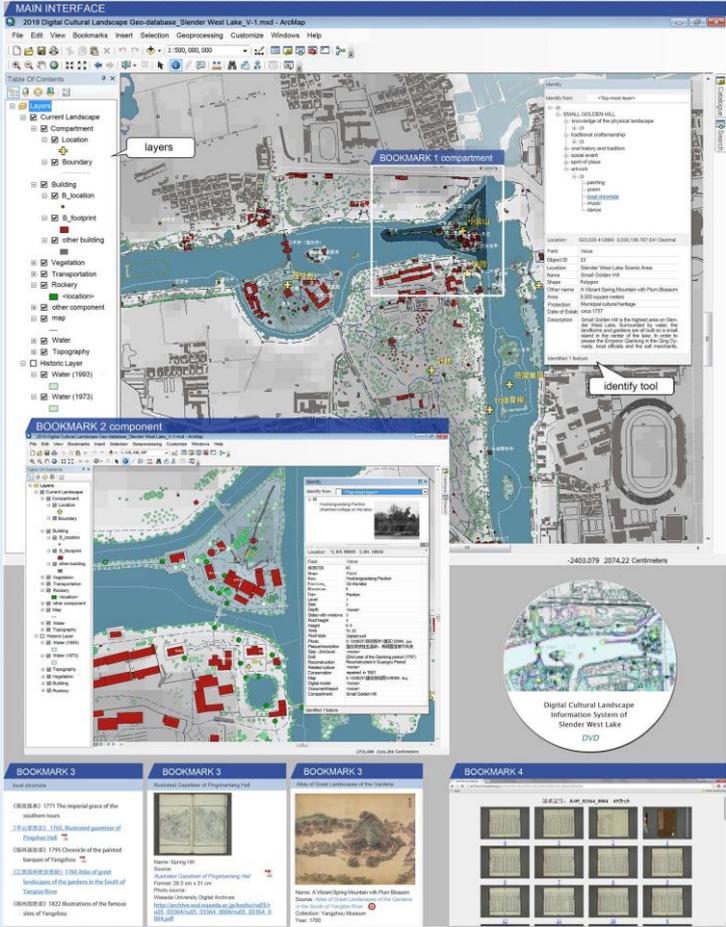


Figure 9. The main interface of the geo-database of Slender West Lake (Yang and Han 2020)

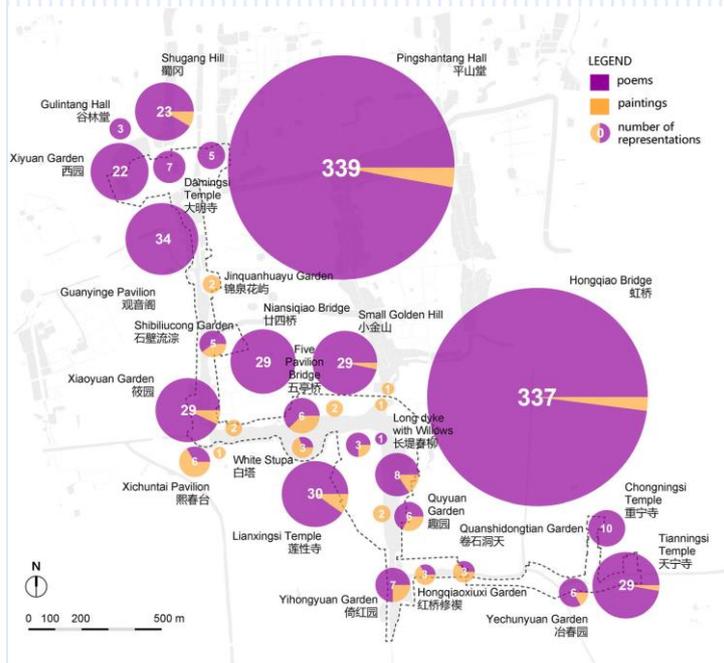


Figure 10. *The thematic map of landscape representation analysis for Slender West Lake between 1644 and 1911 (Yang and Han 2020)*

I.4. Landscape interfaces in modern use and study of landscapes

Palang and Fry (2003) pose a series of questions regarding, amongst others, the complex task of defining what a landscape is, what is its cultural significance, which are its non-visual aspects, who is in position to make decisions about landscape changes, be it locals or experts, do people share the same understanding of landscape etc. They describe six intertwined interfaces (Table 5) both researchers and managers face in landscape study and management respectively, which often indicate division lines between the various academic disciplines, but also maybe knowledge cultures, recognizing still that there will always be interfaces between different approaches and “readings” of the landscape, each valid in its specific social and historical context.

The six landscape interfaces

i Humanities/natural sciences interface

The major conflict in landscape studies seems to be between the humanities and the natural sciences. Linking the two approaches together has been and continues to be a difficult process. The main argument for combining several methods is the need for us to understand the relationships and interactions between mental and material landscapes. Similar physical settings often have different histories and hence evolved different visual character and meanings, yet they may also share many commonalities. Fortunately, there are several research initiatives making progress in this field and include phenomenological interpretations of physical landscape attributes or the use of computer-aided visual analysis techniques to provide insights into human cognition of the view (Fry et al. 2003 cited in Palang and Fry 2003).

ii Culture/culture interface

This interface deals with the differences in landscape values resulting from different cultural perspectives. It is the way different cultures perceive and interpret landscape that is in focus, as well as the way cultures give landscape the symbolic meanings. The study of the cultural interface in landscape research is extremely important for the understanding of how landscape evolved in the past and how conflicts may arise in the future. Furthermore, different cultures attach different meanings to similar landscape elements, thus and in connection with the next past/future interface, during time cultures change and something that was heritage for one culture is handled by another as virgin wilderness that should be tamed and domesticated.

iii Past/future interface

The past/future interface in landscape studies focuses on temporal landscape dynamics. The temporal dynamics have often been seen as a fundamental aspect of landscape studies and this is also reflected in most landscape ecology definitions. The interface is in the present but at the junction where we both look forwards and backwards. Landscape can here be handled as a palimpsest, consisting of elements from different time periods.

iv Time/space interface

This interface represents the interaction of time-space continuum. Time/space is an important interface for the development of our understanding and hence theory development in the realm of landscape development and dynamics. For example, land

use change transition matrices can provide important insights into the dynamics of landscape change through the study not only of mass change but also where that change took place and how each parcel of land became transformed to another use. It is also an important interface for combining technical approaches with classical historical-geographical methodology.

v Expert/lay person interface

This interface has two main starting points. One is the old debate about whether local subjective knowledge is as valuable as the more objective scientific knowledge; another is derived from the previous one and studies how to involve lay people in planning and management exercises. It becomes more and more apparent that landscapes are not primarily for scientists to study and planners and decision makers to manage, but more importantly, for local people to live in and for tourists to gaze at and roam.

vi Preservation/use interface

This seems to be one of the major challenges in landscape planning and management. It addresses the basic questions we have to solve - do we need museum landscapes that preserve the appearance of a certain time or do we want landscapes that live the life it used to. Things that lose their functions tend to disappear. The same holds good for landscapes - change is part of the landscape, and new technologies, new ideas, new developments alter the traditional ones.

Table 5. The six landscape interfaces. Landscape Interfaces: Introduction (Palang and Fry 2003)

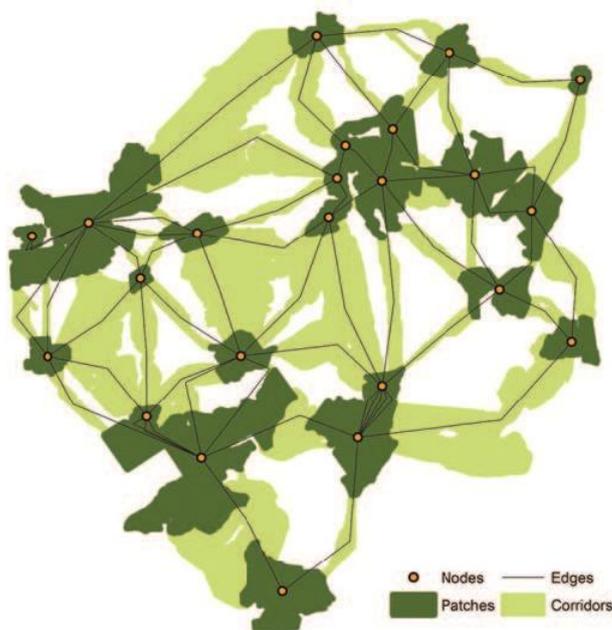
1.4.1 Natural–Cultural Landscapes potential crossover concepts

To promote interdisciplinary landscape study and management methods Fry (2003) suggests a targeted interface (Table 6), to foster both qualitative and quantitative approaches, with ecological themes that seem to match and have wide application to both natural and cultural aspects of landscapes. Starting from a selection of landscape research themes opens the discussion between cultural and natural sciences, regarding human-space use, settlement and survival, species distribution and survival anticipating to set the basis for theory development across subject boundaries.

Cultural-Natural sciences interfaces

i Connectivity

Connectivity (Figure 11) is a fundamental process in landscape ecology. It relates to the functional linkages in a landscape and differs from connectedness, which refers to the mere physical connections between landscape elements. The concept of connectivity includes the resistance to movement caused by barriers or by land use types in a landscape. Connectivity is also important in cultural studies where the perception of time and space relate to the mode and characteristics of transport networks and how these have altered over time. The concept involves the flows of



materials, nutrients, energy, people and wildlife and includes both mental and physical barriers to movement, as well as the physical resistance to movement of different land uses/cover.

Figure 11. A graph theory model depicting connectivity between habitat patches (Rudnick et al. 2012)

ii Corridors

Corridors are linear landscape features that increase the flow of individuals, materials or energy between resource patches or suitable habitat/settlements and are important in defining the movement infrastructure of both animals and people (Figure 12). Corridors are one of the most important ways of increasing landscape connectivity. The human parallel to landscape corridors is, of course, transport infrastructure including roads, railways, waterways, paths and trails. Transport infrastructure is the most significant human corridor system, increasing access to and availability of physical and mental resources (Dover 2000 cited in Fry 2003).

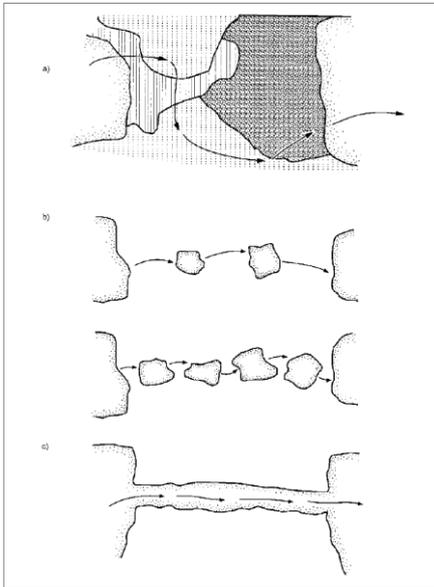


Figure 12. (From top to bottom) *Landscape mosaic, Stepping stones, Corridor with nodes, Linear corridor* (Bennett 2003)

iii Nodes

Nodes are intersections in movement corridors or barriers that result in important meeting places. They are especially of significance for determining the number of alternative ways (routes) individuals can take to move around and orientate themselves in a landscape. Nodes are therefore important in determining flows of species, nutrients and energy around landscapes. The importance of nodes to geographers and archaeologists is much older than the new-found relations in ecology. The role of nodes in transport infrastructure has long been a major explanatory variable in the locating of defences, settlements and industry. Multiple infrastructure nodes such as waterways and roads have tended to be especially important at different historical periods.

iv Supplementation and complementation

Supplementation and complementation are key landscape ecological concepts that reflect different strategies by which individuals and populations sustain themselves with essential resources in fragmented landscapes (Taylor et al. 1993 cited in Fry 2003). The process of supplementation relates to obtaining necessary resources from several small sources within accessible distance.

Complementation is a similar, but subtly different, concept that describes the acquisition of several quite different but essential resources, which must be 'available' i.e. close enough to utilize without expending too much energy or being exposed to risks such as predation (Figure 13).

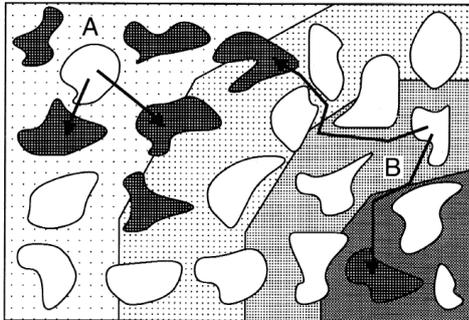


Fig. 1. Landscape complementation. Landscape connectivity underlies a mosaic of patches. Light and dark patches contain different resources required by the animal. Darker background areas have higher connectivity. Animals in area B can access patches more easily (arrows) and so will be able to complement their resource needs. Contrast with Fig. 1 of Dunning et al. (1992) where landscape connectivity is assumed to be homogenous over the landscape.



Fig. 2. Landscape supplementation. Landscape connectivity underlies a mosaic of patches. Darker background areas have higher connectivity. Animals in area B can access other patches more easily than animals in area A (areas within circle) and so will complement their resource needs. Contrast with Fig. 2 of Dunning et al. (1992) where landscape connectivity is assumed to be homogenous over the landscape, and the area of B is smaller.

Figure 13. *Supplementation and complementation* (Taylor et al. 1993 cited in Fry 2003)

v Heterogeneity

Heterogeneity is a complex concept and much used in landscape analysis for a wide range of purposes (Figure 14). Heterogeneity sums up two aspects of landscapes, their grain size (the size of fields, forest patches etc.) and the variety that exists. Despite difficulties in capturing heterogeneity, it is an important concept that ensures the availability of a wide range of resources in a spatially restricted area and is correlated to a wide range of wildlife population and community characteristics. Because of this, landscape heterogeneity has been a central theme in the development of landscape indicators for biodiversity, but is also a major feature in human landscape preference studies and used in landscape characterization. The finer the scale of the landscape the higher the biodiversity, cultural heritage and visual value of landscapes. The concept of heterogeneity is thus likely to provide an interesting starting point for theory generation across disciplinary boundaries in an attempt to explain its wide influence in man and nature at the landscape level.

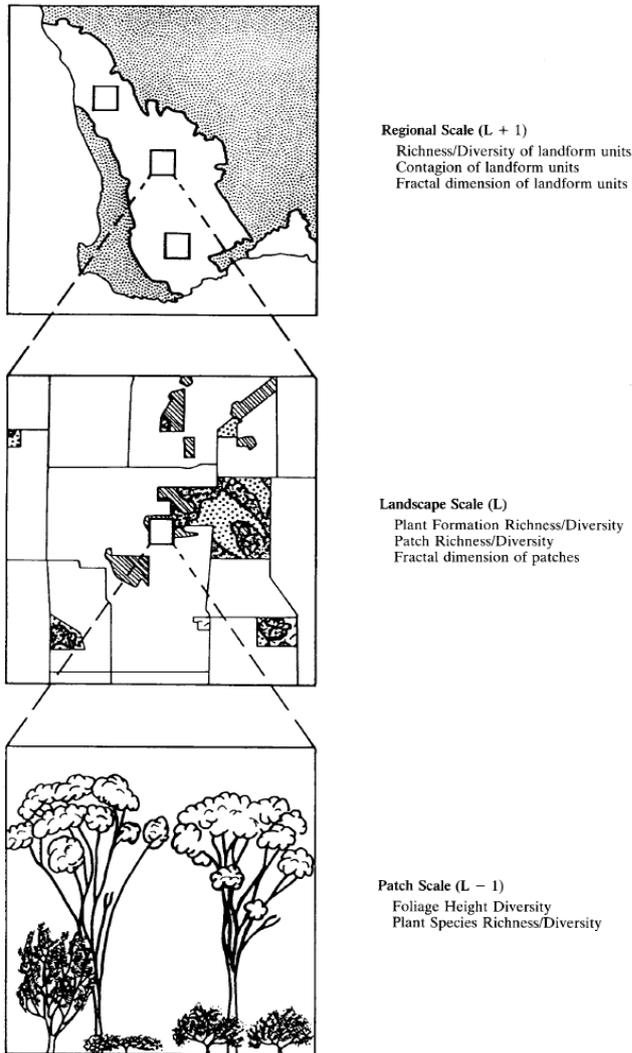


Figure 14. Different scales at which heterogeneity may be considered, and various indices of heterogeneity that have been applied at each scale. Processes at one level (L) may be affected by heterogeneity at higher (L + 1) or lower (L - 1) levels (Cale and Hobbs 1994 cited in Fry 2003)

vi Continuity

Continuity is an aspect of the time depth and state of cultural heritage interests in landscapes. Although many landscapes have a great time depth, for landscape experience we are most concerned with the visual time depth. The historical depth of a landscape may be hidden in the sense that it is under the surface, but it may also be hidden because it is not a visible aspect of the landscape: For example, the sites of myths, battles or the home of artists or authors. But it is not only the age of some habitats that make them important for biodiversity. There may be other links with the past. Historical cultures may have altered the soil conditions or drainage characteristics of an area, ploughed fields, grew crops etc. Many of these earlier activities leave their imprint in the vegetation of today. In addition some of the structures erected by earlier societies may now be important substrates or habitats for rare species such as the lichens that grow on gravestones.

vii Size, shape and pattern of habitat patches

The size and shape of habitat patches are important patch variables affecting many ecological and social processes. They are especially important for population viability and immigration and emigration dynamics in the study of populations of man and wildlife. Since the early theories on island biogeography we have been aware of the role that patch size has on biodiversity and later on population stability (Figure 15).

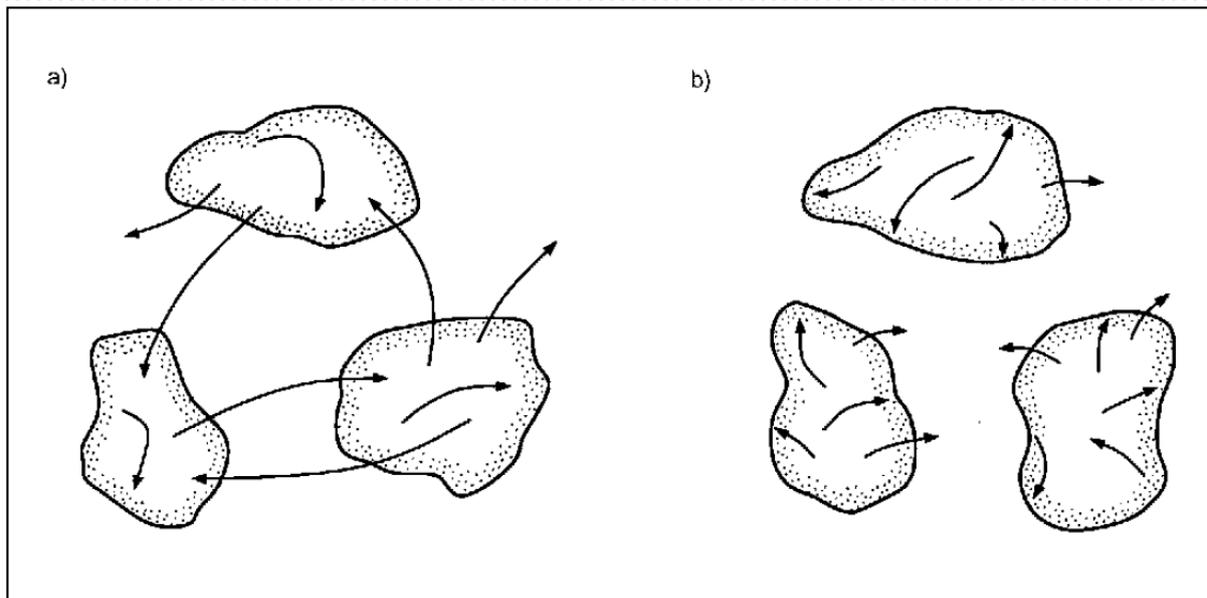


Figure 15. A patchy landscape may, at the same time, offer a high level of connectivity for one species (a), and a low level of connectivity for another species (b) that has difficulty moving amongst habitats (Bennet 2003)

viii Scale issues

Scale issues are important to both natural and cultural heritage management debates through the links to hierarchies of spatial and temporal processes and considerations of the scale of management units. There are many reasons why administrative boundaries do not function well as management units but the main one is simply that they do not match well the boundaries of natural and cultural resources. Distributions of rare plants and animals or special habitats often do not coincide with administrative boundaries, thus confounding resource management efforts. When there is a mismatch it can be difficult to develop integrated management strategies for whole landscapes.

ix Viewsheds

Viewshed analysis is a technique that identifies the area of a map visible from any given point. Viewsheds are perceptual units and are important for interpreting visual relationships between archaeological sites, determining the visual character of an area and determining the space use of animals (Figure 16). They are also important in identifying the bounds of cultural environments.

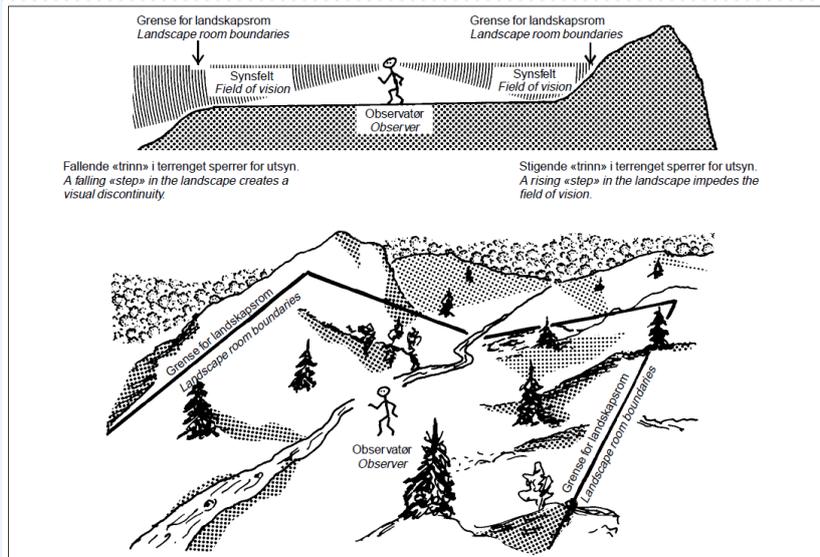


Figure 16. Landscape rooms are constituted by continuous surface which appear as the «floor», and by hillsides or vegetation boundaries creating the «walls». Discontinuity in the surface «floor» may also create edges that constitute room boundaries (Keller cited in Fry 2003)

Sometimes, we wish to explore more advanced types of viewsheds such as the accumulated viewshed for all points along a ridgeline in the landscape or from a road (Figure 17).

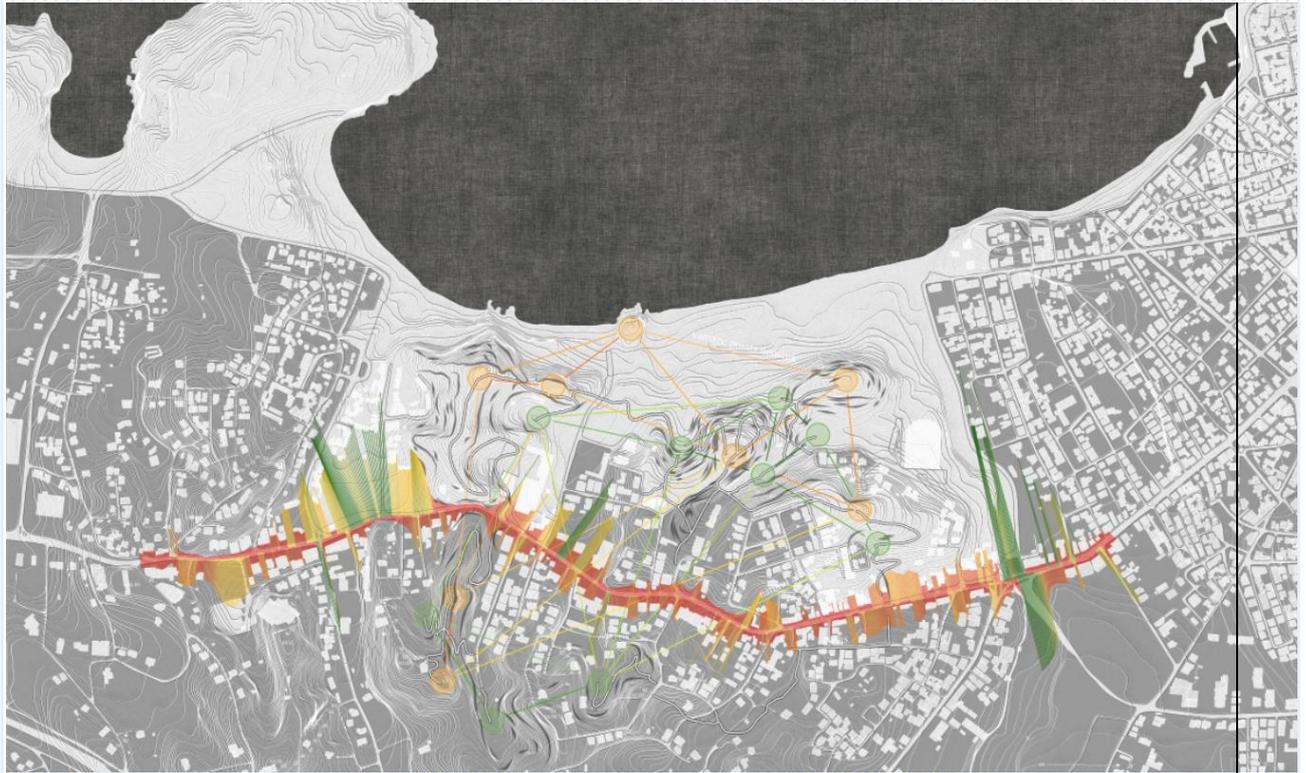


Figure 17. *Field of view analysis (2d) along Kissamou road, Chania* (Visual and olfactory landscapes: From data analysis to perceptual territorial experience, 9th International Biennial of Landscape, Peteinarelis 2016).

Table 6. Cultural-Natural sciences interfaces crossover concepts. From Objects to Landscapes in Natural and Cultural Heritage Management: A Role for Landscape Interfaces (Fry 2003).

2. Geographic Information System - GIS

2.1. GIS technology

2.1.1. Definition and history

A typical GIS can be defined in a number of ways:

A computer-based tool for mapping and analysing things that exist and events that happen on Earth.

Burrough (1986 cited in UNESCO 2012) defines GIS as a “set of tools for collecting, storing, retrieving at will, transforming and displaying spatial data from the real world for a particular set of purposes”.

Arnoff (1989 cited in UNESCO 2012) defines GIS as a “computer-based system that provides four sets of capabilities to handle georeferenced data: data input, data management (data storage and retrieval), manipulation and analysis, data output”.

Overall, GIS can be seen as a tool to assist in decision-making and the management of attributes that need to be analysed spatially (Mahaxay et al. UNESCO 2012).

A Geographic Information System (GIS) is a computer-based technology for producing, organizing and analysing spatial information. GIS has capabilities for database management, mapping, image processing and statistical analysis (UNESCO 1999).

A geographic information system is a computer-based system that supports the study of natural and man-made phenomena with an explicit location in space. To this end, the GIS allows data entry, data manipulation, and production of interpretable output that may provide new insights about the phenomena. The system provides with the following four sets of capabilities to handle georeferenced data (Huisman and de By 2009):

i Data capture and preparation

ii Data management, including storage and maintenance

iii Data manipulation and analysis

iv Data presentation

To describe GIS general functions and capabilities Box (UNESCO 1999) notes that a GIS defines entities (or features) on a map using spatial and descriptive (or attribute) data (Figure 18). Real world features, such as monuments, lakes or roads, have physical dimensions. Spatial data indicates the location and dimensions of a feature. Geographical objects also have non-spatial attributes, such as material, ownership and age, which describe characteristics of an object. It is the ability of GIS to reference and describe objects by a location that distinguishes it from traditional databases and spreadsheets. The method of recording non-spatial data based on spatial locations is called “spatial referencing” or “geocoding”.

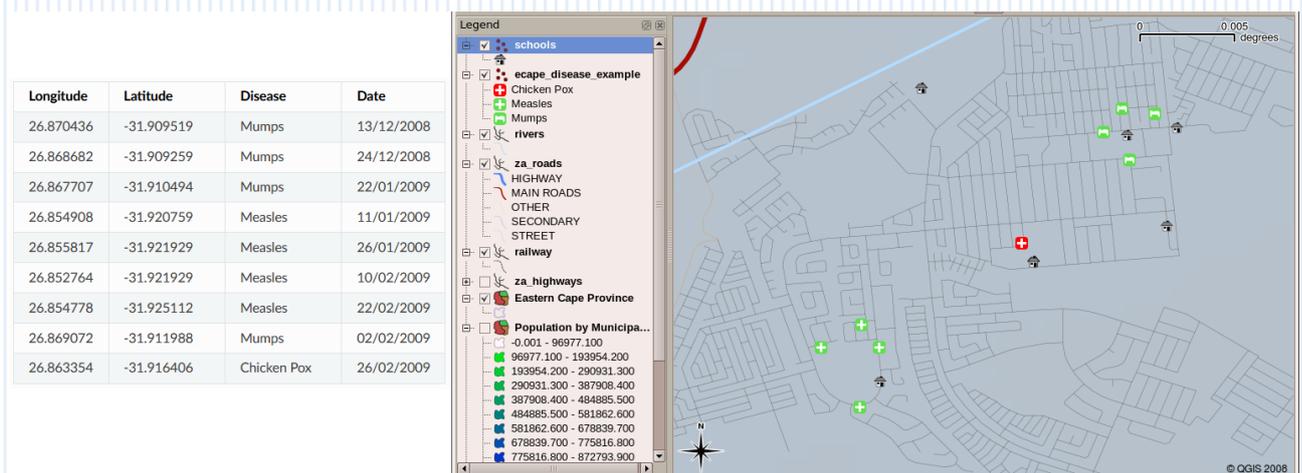


Figure 18. Map and associated data of the date and place of residence of every patient treated for Mumps, Measles and Chicken Pox ([A Gentle Introduction to GIS](#) Sutton, QGIS 2009)

Linking spatial information to maps is something that has been done for centuries. The next evolutionary step was to plot research data on a map. This produces, together with the spatial data, information that can be analysed and forms new spatial-dependent data, on which decisions can be made. The first individual to do this was Dr. John Snow who, in 1854, depicted a cholera outbreak in London using points to represent the locations of individual cases (Figure 19). His study of the distribution of cholera led to the source of the disease, a contaminated water pump within the heart of the cholera outbreak (Figure 20). In 1962 the world's first true operational GIS was developed in Ottawa, Ontario, Canada by the federal Department of Forestry and Rural Development. Developed by Dr. Roger Tomlinson, it was called

the “Canada Geographic Information System” (CGIS) and was used to store, analyse and manipulate data collected for the Canada Land Inventory (CLI). The Canada Land Inventory was an initiative that determined the land capability for rural Canada by mapping information about soils, agriculture, recreation, wildlife, waterfow, forestry and land use at a scale of 1:50,000 (UNESCO 2012).

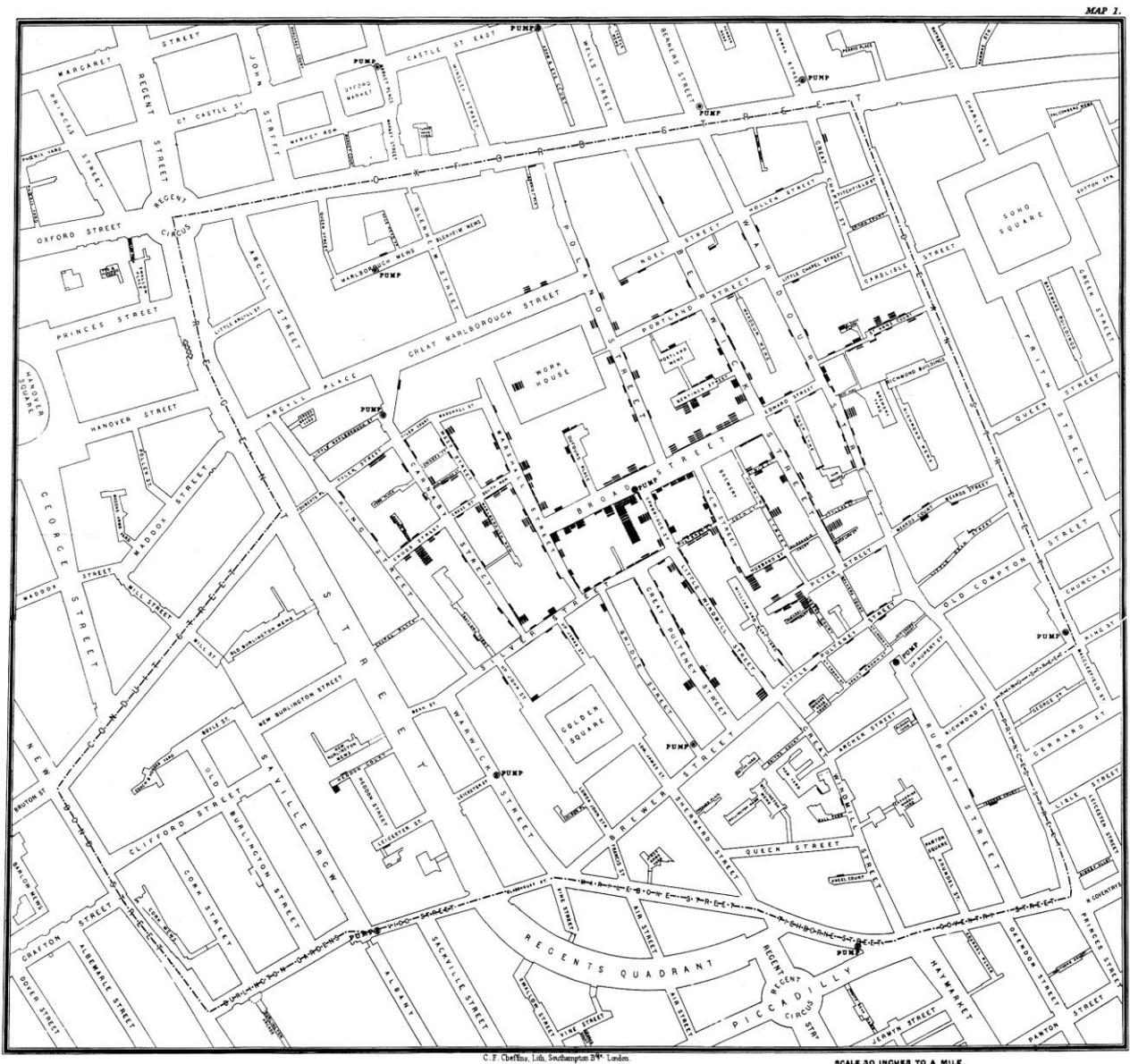


Figure 19. Map of the book "On the Mode of Communication of Cholera". Snow, J., originally published in 1854 by C.F. Cheffins, Lith, Southampton Buildings, London, England. Snow used bars to represent deaths that occurred at the specified households. There were several minor errors in this map which were later corrected. One such error was in the place of the Broad Street pump. In his original map, the pump was located at the exact corner of Broad Street and Cambridge Street.

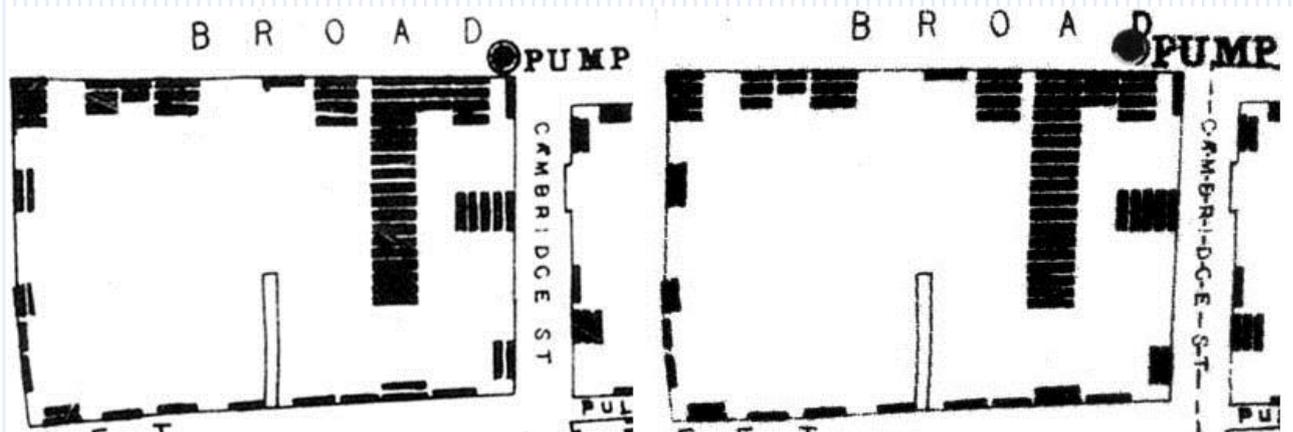


Figure 20. (Left) *Pump location in first published map*, (Right) *Revised pump position*. Snow, J., originally published in 1854 by C.F. Cheffins, Lith, Southampton Buildings, London, England.

At Angkor World Heritage site UNESCO pioneered in 1992 the use of computer assisted information management tools to bring together fragmentary data from many sources in order to create a data bank to guide restoration work on the monuments, and to aid in the creation of an economic and human resource development plan (UNESCO 1999).

2.1.2. GIS function and map “model”

A GIS should be thought of as a process or flow of data. It is not simply a database for storing data, but is a complex tool for the collection, integration, retrieval, analysis and output of data.

Maps are graphical representations of the real world. All objects found in the real world can be represented as features on a map. The locations of objects on a map reflect, with differing degrees of accuracy, the location of the objects on the surface of the earth. A computerized map can be thought of as an atlas of a specified geographic area in which each page contains different types of information. One page may contain topographic information, another page land use and a third page elevation information. In a GIS, these pages are known as “layers” (also referred to as levels or themes) of the map (Figure 21). Each layer is similar to a transparent overlay that contains one type of information. When all of the layers are overlaid, a geographic database is created. This is one of the advantages of GIS maps over conventional paper maps, instead of viewing one map at a time, all required information can be superimposed and displayed as a single map (UNESCO 1999).

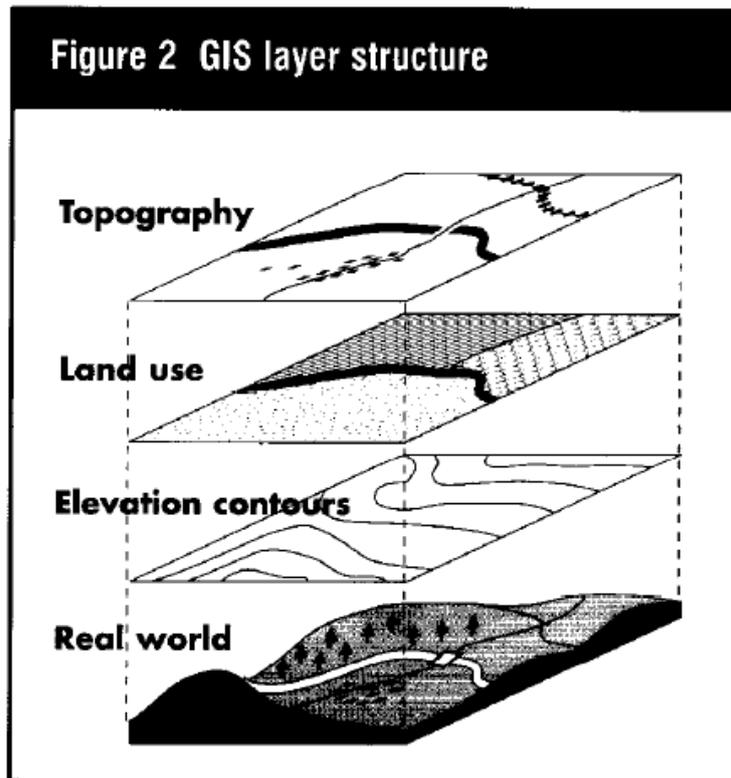


Figure 21. GIS layer structure (UNESCO 1999)

Geographic features displayed on a map layer are known as “entities” (also objects, or elements). An entity is a graphic representation of data that is stored in a database or spreadsheet. The location of the entity is recorded as pairs of (x,y) coordinates. The coordinates indicate the location of the entity in the real world by reference to a particular map coordinate system. Real world objects represented within the map also have attributes that describe the objects. For example, a computerized map showing the location of monuments might be attached to a database that recorded attributes such as construction dates, construction materials and condition of the monuments (Figure 22) (UNESCO 1999).



Inherit ID	Κωδικ	ΚΑΕΚ	Όνομα	Δήμο_1	Τοποθ	Είδος	Τύπος	Χρονι	Καθεσ	Κύρηξ	Κατάσ
1	INH180	186	501500602002	Οικό Ανεπίτου...	ΧΑΝΙΩΝ	Χανιά Χρυσοστόμου Σπύργης 17, Νέα Χώρα	Αστικά Κτίρια	νεώτερο μνημείο	Νεοελληνική	ιδιωτών	YA 98901/272... A
2	INH179	127	501500416022	Θύραμα οικίας *	ΧΑΝΙΩΝ	Χανιά Χατζημηλιδη-Ητολιάνη 14	Τμήματα κτηρίων, Αστικά Κτίρια	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 89901/272... ΚΚ
3	INH145	148	501500612008	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Ζαμπελίου 17-21	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... ΚΚ
4	INH176	157	501500612018 501500612082	Ενετικό Μέγαρ...	ΧΑΝΙΩΝ	Χανιά Χάληδων και Ζαμπελίου	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... ΚΚ
5	INH100	107	501500612026	Ναός Αγ. Φρα...	ΧΑΝΙΩΝ	Χανιά Χάληδων	Ισλαμικό Τεμένι, Ιερόι Ναοί Χριστιανικοί, Θρη...	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 89901/272... ΚΚ YA 75294/260... ΚΚ
6	INH130	141	501500514010	Τουρκικό θύρ...	ΧΑΝΙΩΝ	Χανιά Αγ. Δέκα 14	Τμήματα κτηρίων, Αστικά Κτίρια	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
7	INH143	147	501500513010	Τουρκικό θύρ...	ΧΑΝΙΩΝ	Χανιά Δωροθέου επισκόπου 6	Τμήματα κτηρίων, Αστικά Κτίρια	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
8	INH131	142	501500513021	Τουρκικό θύρ...	ΧΑΝΙΩΝ	Χανιά Αγ. Δέκα 15-17	Τμήματα κτηρίων, Αστικά Κτίρια	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
9	INH196	162	501500515021	Συγκρότημα τ...	ΧΑΝΙΩΝ	Χανιά Χάληδων 33-35	Λουτρά	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
10	INH150	151	501500707009	Τουρκικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Θεοφάνους 9	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
11	INH148	150	501500701053 501500701048	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Θεοτοκοπούλου 68-76	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... A
12	INH098	108	501500701052	Ναός του Σιμ...	ΧΑΝΙΩΝ	Χανιά Δυτική Τάφρος Θεοτοκοπούλου	Ιερόι Ναοί Χριστιανικοί, Θρησκευτικοί Χώροι	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 89901/272... A
13	INH095	103	501500701056	Θύραμα με κλ...	ΧΑΝΙΩΝ	Χανιά Φρεκάς	Τμήματα κτηρίων, Αστικά Κτίρια	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 89901/272... ΚΚ
14	INH133	111	501500701009	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Αγγέλου	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 89901/272... ΚΚ
15	INH135	143	501500701016	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Αγγέλου 7 και πάροδος	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... ΚΚ
16	INH134	143	501500701017	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Αγγέλου 1-5	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... ΚΚ
17	INH123	137	501500706016	Πρόσωση ενετ...	ΧΑΝΙΩΝ	Χανιά Θεοτοκοπούλου 20	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
18	INH122	138	501500706001	Πρόσωση ενετ...	ΧΑΝΙΩΝ	Χανιά Θεοτοκοπούλου 30	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
19	INH182	159	501500609053 501500609054	Τουρκικό μέγαρο	ΧΑΝΙΩΝ	Χανιά πάροδος Κονδυλάκη 49	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΑΕ
20	INH183	160	501500609031	Εβραϊκή Συναγ...	ΧΑΝΙΩΝ	Χανιά πάροδος Κονδυλάκη 60-62	Συναγωγές, Θρησκευτικοί Χώροι	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... A
21	INH157	153	501500609004	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Κονδυλάκη 14-16	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... ΚΚ
22	INH168	155	501500609013	Τουρκικό τόμε...	ΧΑΝΙΩΝ	Χανιά Σκουφών 1-3 και Ζαμπελίου	Ισλαμικό Τεμένι, Συστήματα Ύδρευσης, Καθ...	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 16307/9-9... ΚΚ
23	INH191	195	501500610007	Οικό Α. Αντων...	ΧΑΝΙΩΝ	Χανιά Πλατεία Κουντουριώτη	Αστικά Κτίρια	αρχαίο μνημείο	Βυζαντινή/Μετ...		YA 98901/272... ΚΚ
24	INH169	156	501500605007	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Σκουφών 4	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... A
25	INH142	146	50150070015	Ενετικό μέγαρο	ΧΑΝΙΩΝ	Χανιά Δούκα 29	Αστικά Κτίρια, Κέντρα διοίκησης	αρχαίο μνημείο	Ενετοκρατία		YA 16307/9-9... A

Figure 22. Municipality of Chania Cultural Districts: Cultural clusters with indexing of historical periodization and current condition (InHeriT TUC research team: Promoting Cultural Heritage as a Generator of Sustainable Development 2017)

One of the main uses of GIS as a tool is to help make decisions. Maps attempt to represent some part of the real world as it is, was or the management plans design it to be. During this process selected information is input in the system, not only due to technical or curation reasons, but also because real world cannot be fully and completely represented. Thus, this partial representation is considered a “Model” sharing in common some certain characteristics with the real world, enabling the possibility to work on and study the model instead of the real world. Changing the input data and altering parameters of the model outputs maps where the effects of the changes can be investigated. Therefore, maps are perhaps the best known (conventional) models of the real world, having been used for thousands of years to represent information of the world (Huisman and de By 2009).

Concluding Huisman and de By (2009) note that any task begins and ends with the real world, which is what data is all about. Out of necessity, any system can only provide an abstraction, a model of the real world; it cannot become reality but it can come close to it. Data is fed into a GIS and it can then be ordered, combined and analysed. Combined and interpreted data provides us with information that can be compiled for decision-makers and used to inform actions and facilitate the implementation of plans. Public access to geographic information is dominated by online resources such as Google Earth and Google Maps.

2.1.3 GIS components

GIS constitutes of five key components (Table 7) (UNESCO 1999, 2012) (Krek and Evelpidou 2009):

GIS key components	
i Hardware	The hardware is the computer and the devices used to input, output and store data, and to run the software.
ii Software	GIS software can be thought of as a collection of instructions that provides the functions needed to input, store, analyse and display geographic information.

The primary software components comprising a GIS are (Figure 23):

- Data input and manipulation tools
- A database management system (DBMS)
- Tools providing query and visualization functionality
- Tools used to perform spatial analysis, queries and map visualization.
- A graphical user interface (GUI) providing access to the tools

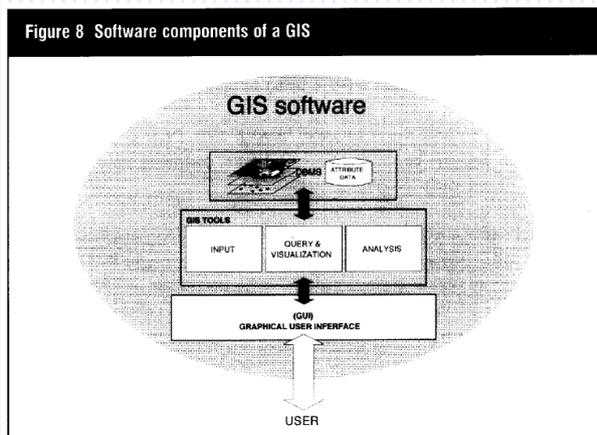


Figure 23. GIS software components (UNESCO 1999)

iii Data

Data is either produced in-house or obtained from external sources. The data to be included within a GIS will be defined by the needs of the users and the "spatial information products" they wish to produce. A careful analysis of requirements must be undertaken to identify the data to be included within the system. A GIS can be used to store many different formats and types of data ranging from digital maps, numeric and textual data in tabular form to graphics such as photographs and architectural drawings, and even sound and video, incorporated into DBMS, used for storing, maintenance and management.

Huisman and de By (2009) bring forward a noteworthy subtle difference between the terms data and information. Most of the time both terms are used interchangeably, without the risk of confusing their meanings. However, using GIS for design and analysis makes the distinction important.

Data is a representation that can be operated upon by a computer. Spatial data contains positional values such as (x,y) coordinates. A further refined term is geospatial data

describing spatial data that is georeferenced (see section 2.2.1.).

Geospatial data and information is data that has been interpreted by human being. Human work with and act upon information, not data. It is human perception and mental processes that leads to information understanding and knowledge. Thus, Geoinformation is a specific type of information resulting from the interpretation of spatial data.

iv People

GIS users range from technical specialists who design and maintain the system, to those who use it to help them perform everyday tasks, such as scientists, researchers and policy-makers.

v Method

A GIS can be used as a software tool, but also as a methodological approach following a series of procedures defined by the user. Methodology is considered as a set of procedures defined and applied by the (geo)cultural landscape researcher using a GIS. These procedures can be either completely supported by a GIS or they can be partially accomplished by manually executed procedures where only some segments of research are done with the help of a GIS. A GIS can be possibly combined with other software packages that allow for an exchange with the GIS data formats. The development of a methodology enables the researchers to formalise the procedures used within their analysis. If properly designed, it can be exchanged by researchers and repeated in various research studies. A very important tool provided by GIS software is the ability to develop new modules which are actually algorithms applied as add-on software on the GIS platform. Database management can often prove to be very time-consuming, even though in some cases the chosen actions are specific and prearranged. The development and execution of an algorithm which contains a script of the actions can apply them automatically, saving time and effort for the user (Krek and Evelpidou 2009).

Table 7. GIS key components

GIS and Cultural Resource Management: Manual for Heritage Managers” (UNESCO 1999)

Geographical Information Systems in Underwater Archaeology (UNESCO 2012)

Principles of Geographic Information Systems: An introductory textbook (Huisman and de By 2009)

The role of geoinformation technologies in geo cultural landscape research (Krek and Evelpidou 2009).

2.2. GIS data formats and sources

2.2.1. Data formats and models

A GIS enables the integration of data, of many different formats and from various sources, needed for the (geo)cultural landscape research, its storage in a database management system, the manipulation and analysis of the data, and finally the visualisation of the results. For instance, these include cadastral data, aerial and satellite images, field survey data, land registers, and various statistical and expert data. The study of remotely observed data gives the scientist a first view of the area's state. More contemporaneous data though, can only be acquired by scientist's in situ research through fieldwork. This data is then combined with data and information from other sources and integrated into the GIS (Krek and Evelpidou 2009).

There are two main data formats which can be integrated in the GIS: raster and vector (Table 8) (UNESCO 1999) (Krek and Evelpidou 2009) (Huisman and de By 2009).

Data formats and models

i Vector

In a vector data model the basic units are individual entities on the map such as points, lines and areas (Figure 24). This model utilizes a Cartesian coordinate system to record the geometry (shape and location) of real world objects. Within a vector-based GIS, points, lines and areas are recorded as x,y co-ordinates. A point is represented as a line of zero length at location x,y, a line is represented as a series of x,y coordinates and a polygon (closed area) as a series of x,y coordinates with the same start and end point. In general, vector data are used for the representation of discrete features, e.g. contour lines, hydrographical network etc., defined by coordinates which can be linked to related geographical information stored in an attribute table, which also stores also non-geographical data, e.g. elevation, flow speed etc.

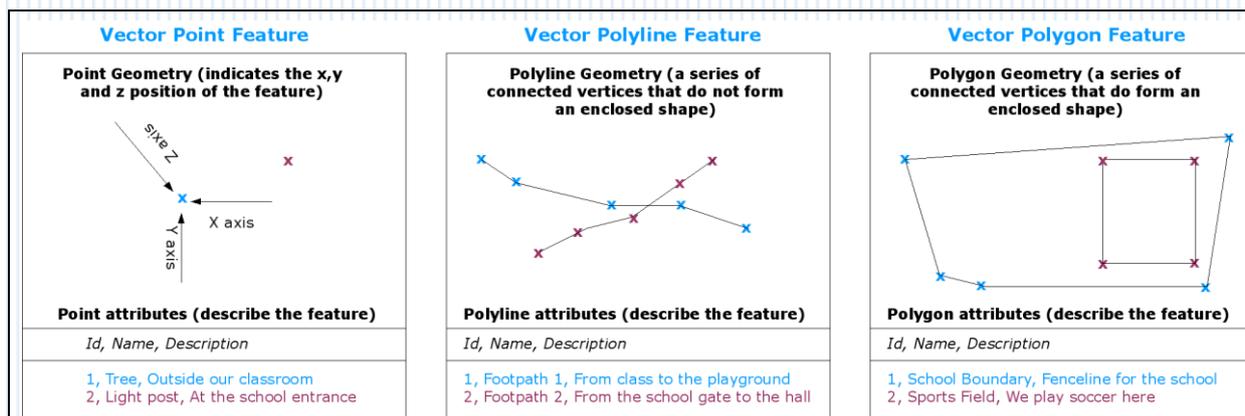


Figure 24. (From left to right) A point feature is described by its X, Y and optionally Z coordinate. The point attributes describe the point e.g. if it is a tree or a lamp post. A polyline is a sequence of joined vertices. Each vertex has an X, Y (and optionally Z) coordinate. Attributes describe the polyline. A polygon, like a polyline, is a sequence of vertices. However in a polygon, the first and last vertices are always at the same position ([Gentle Introduction to GIS](#) Sutton, QGIS 2009)

Some common ways of generating vector data are:

- Onscreen digitization of scanned analog cartographic material (Raster files).
- Onscreen digitization of aerial photos and satellite images (Raster files)
- Global positioning system (GPS) data. GPS provides specially coded satellite signals that can be processed in a GPS receiver, enabling the receiver to compute position, velocity and time. At least three GPS satellite signals are used in order to compute the location of the GPS receiver. This technological advance has provided researchers with excellent geographical precision during fieldwork.
- Traditional or Total station ground survey
- Automatic point creation from a database that must include geographic coordinates of the points to be created. This method's most common example is a database of points taken through the fieldwork and registered in a GPS memory.
- Geocoding, through which a GIS automatically creates points, based on their descriptive information stored within the database, and associates them to another information level. A typical example is the placement of points to addresses (descriptive information from the information layer of the database that will be geocoded) based on an urban design net (e.g. linear information layer which also includes addresses).
- Segmentation as a process of partitioning a raster image into regions.

ii Raster

Raster data consist of a matrix with an implicit specification of the spatial location attributable to the system of rows and columns. The single elements of the matrix are called pixels which include the image information. Such raster data can be:

Scanned analog cartographic material.

Aerial photographs and satellite images: Aerial photographs and satellite images provide information in different levels of detail and accuracy, depending on their scale and origin. The new generation of satellites provide very high resolution imagery that is comparable to aerial photography (Figure 25).



Figure 25. (Left) *New York City 1932, aerial photograph of Fairchild Aerial Surveys Inc, (United States Coast and Geodetic Survey 1932), (Right) Satellite image of crops growing in Kansas, United States. (NASA 2001)*

Orthophotos: An orthophoto, orthophotograph or orthoimage is an aerial photograph or satellite imagery geometrically corrected, "orthorectified", such that the scale is uniform. The photo or image follows a given map projection. Unlike an uncorrected aerial photograph, an orthophoto can be used to measure true distances, because it is an accurate representation of the Earth's surface, having been adjusted for topographic relief lens distortion, and camera tilt (Figure 26).

Digital elevation models (DEM): A Digital Elevation Model (DEM) is a representation of elevation data to represent the terrain, the bare ground (bare earth) topographic surface of the Earth excluding trees, buildings, and any other surface objects (Figure 27).

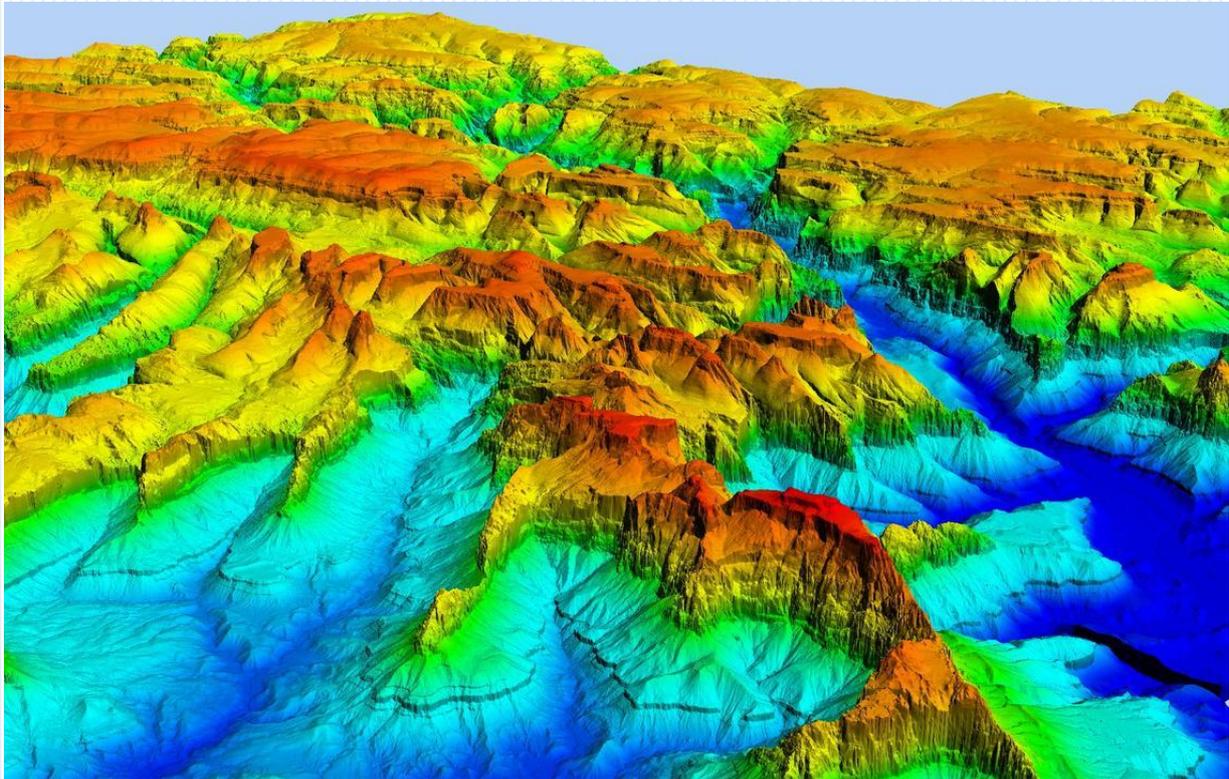
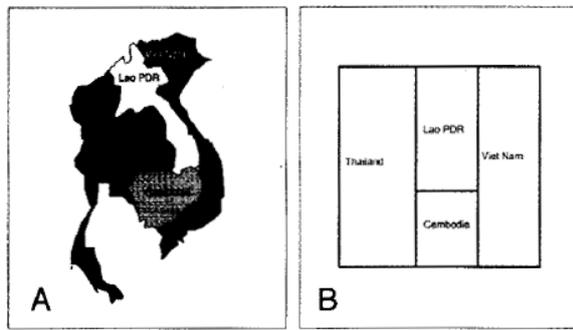


Figure 27. Lidar-derived Digital Elevation Model over Zion National Park Utah (Stoker, USGS 2015)

iii Topology

In addition to recording the shape and location of geographic features, a GIS can record the spatial relationship between features. This characteristic is referred to as topology (Figure 28). When viewing a map, topological relationships are implicitly shown, and a map reader can clearly see that one feature, such as a country, is adjacent to another feature. In a GIS, however, this relationship between features must be specifically encoded for each feature in a digital map. In a GIS, topology can be expressed independently from distance and direction.

Figure 14 Examples of geographical and topological representation



Geographical and topological representations of Thailand, Cambodia, Lao PDR and Viet Nam:

In map A, the geographical and topological representation of the countries is correct. Map B correctly represents the topological relationship between the four countries but is geographically incorrect.

Figure 28. *Geographical – Topological representation* (UNESCO 1999)

iv Database Management Systems (DBMS)

The non-spatial characteristics of map features stored in a GIS can be recorded as text and numeric descriptions together with graphics (drawings, photographs, and video) and sound. For example, a point stored in the digital map representing a monument may have the attributes such as name, construction date, construction material and a photograph as a record in an attached database. Databases are another important class of models, as described in 2.2.1. The collection of stored data represents some real world phenomena, so it too is a model. The phrase “data modelling” is the common name for the design effort of structuring a database. This process involves the identification of the kinds of data that the database will store, as well as the relationships between these kinds of data (Figure 29).

Figure 15 Linkages between tables in a relational DBMS

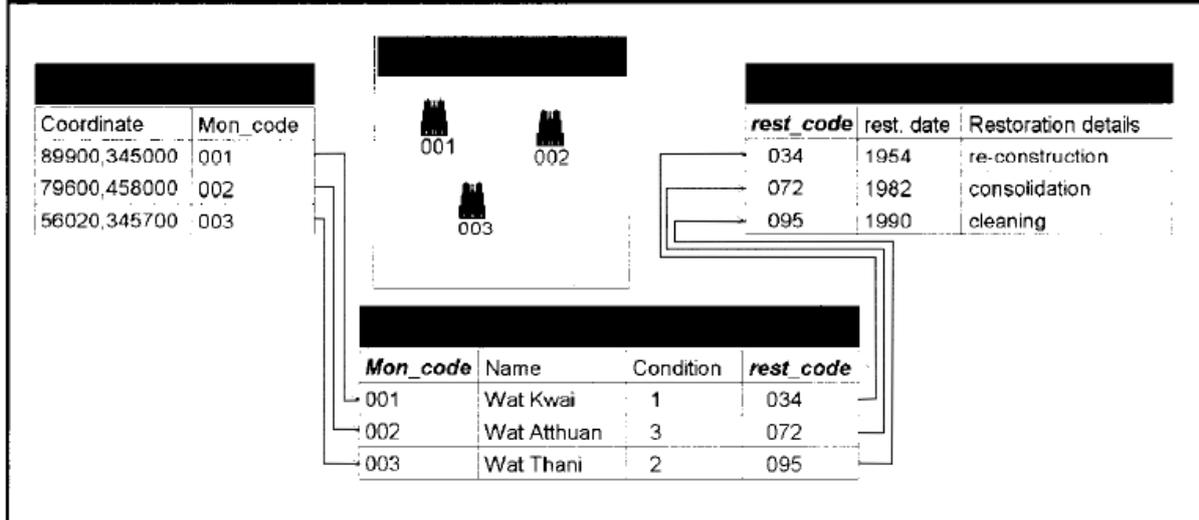


Figure 29. Tables linkages in relational DBMS (UNESCO 1999)

Georeferencing of Data

All data imported into a GIS has to be georeferenced, which means the assignment of spatial reference information to a raster image through the definition of at least three control points. The word was originally used to describe the process of referencing the image of a map in a geographic location. Nowadays, it is commonly used as well for establishing a relation between raster or vector images to map projections or coordinate systems (Figure 30). When data from different sources need to be combined and then used in a GIS application, it becomes essential to have one common referencing system. The researchers can georeference a set of points, line segments, polygons, images or even 3D graphic elements (Krek and Evelpidou 2009). GIS software include support for various kinds of coordinate systems and transformations between them, options for analysis of the georeferenced data, and obviously a large degree of freedom of choice in the way this information is presented (such as colour scheme, symbolset, medium used) (Huisman and de By 2009).

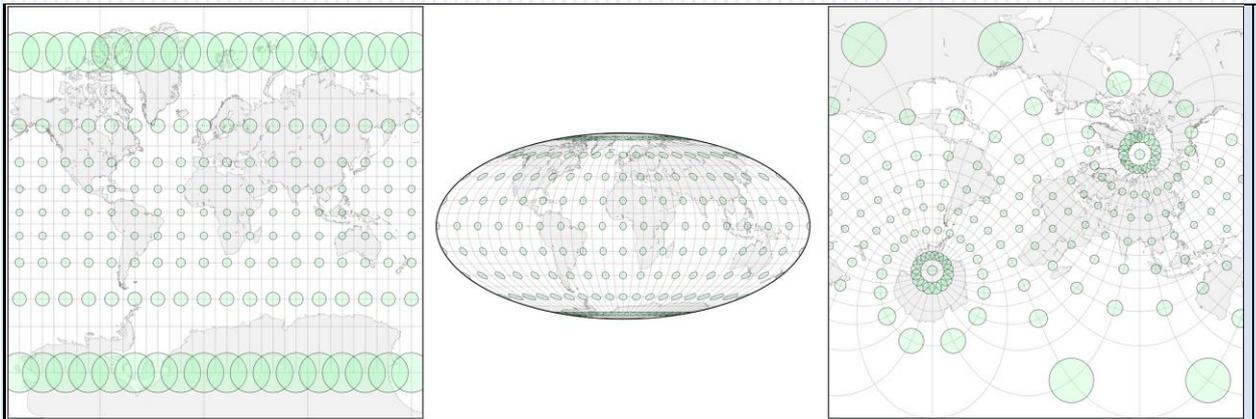


Figure 30. (From Left to Right) *Mercator, Mollweide and Oblique Mercator projections with Tissot's indicatrix of deformation. The circles are all the same size on the globe* ([Introduction to GIS Fundamentals](#) by Dunks, Brelsford and Pappas)

In cartography, a Tissot's indicatrix is a mathematical contrivance presented by French mathematician Nicolas Auguste Tissot in 1859 and 1871 in order to characterize local distortions due to map projection. It is the geometry that results from projecting a circle of infinitesimal radius from a curved geometric model, such as a globe, onto a map. Tissot proved that the resulting diagram is an ellipse whose axes indicate the two principal directions along which scale is maximal and minimal at that point on the map.

The Mercator projection is a cylindrical map projection presented by Flemish geographer and cartographer Gerardus Mercator in 1569. It became the standard map projection for navigation because it is unique in representing north as up and south as down everywhere while preserving local directions and shapes. The map is thereby conformal. As a side effect, the Mercator projection inflates the size of objects away from the equator. This inflation is very small near the equator but accelerates with increasing latitude to become infinite at the poles.

The Mollweide projection is an equal-area, pseudocylindrical map projection generally used for global maps of the world or night sky. The projection trades accuracy of angle and shape for accuracy of proportions in area, and as such is used where that property is needed, such as maps depicting global distributions.

The oblique Mercator map projection is an adaptation of the standard Mercator projection. The oblique version is sometimes used in national mapping systems. When paired with a suitable geodetic datum, the oblique Mercator delivers high accuracy in zones less than a few degrees in arbitrary directional extent. The oblique Mercator projection is the oblique aspect of the standard (or Normal) Mercator projection. They share the same underlying mathematical construction and consequently the oblique Mercator inherits many traits from the normal Mercator. Since the standard

great circle of the oblique Mercator can be chosen at will, it may be used to construct highly accurate maps, of narrow width, anywhere on the globe.

The three families of map projections

The process of creating map projections is best illustrated by positioning a light source inside a transparent globe on which opaque earth features are placed. Then project the feature outlines onto a two-dimensional flat piece of paper. Different ways of projecting can be produced by surrounding the globe in a cylindrical fashion, as a cone, or even as a flat surface. Each of these methods produces what is called a map projection family. Therefore, there is a family of planar projections, a family of cylindrical projections, and another called conical projections (Figure 31).

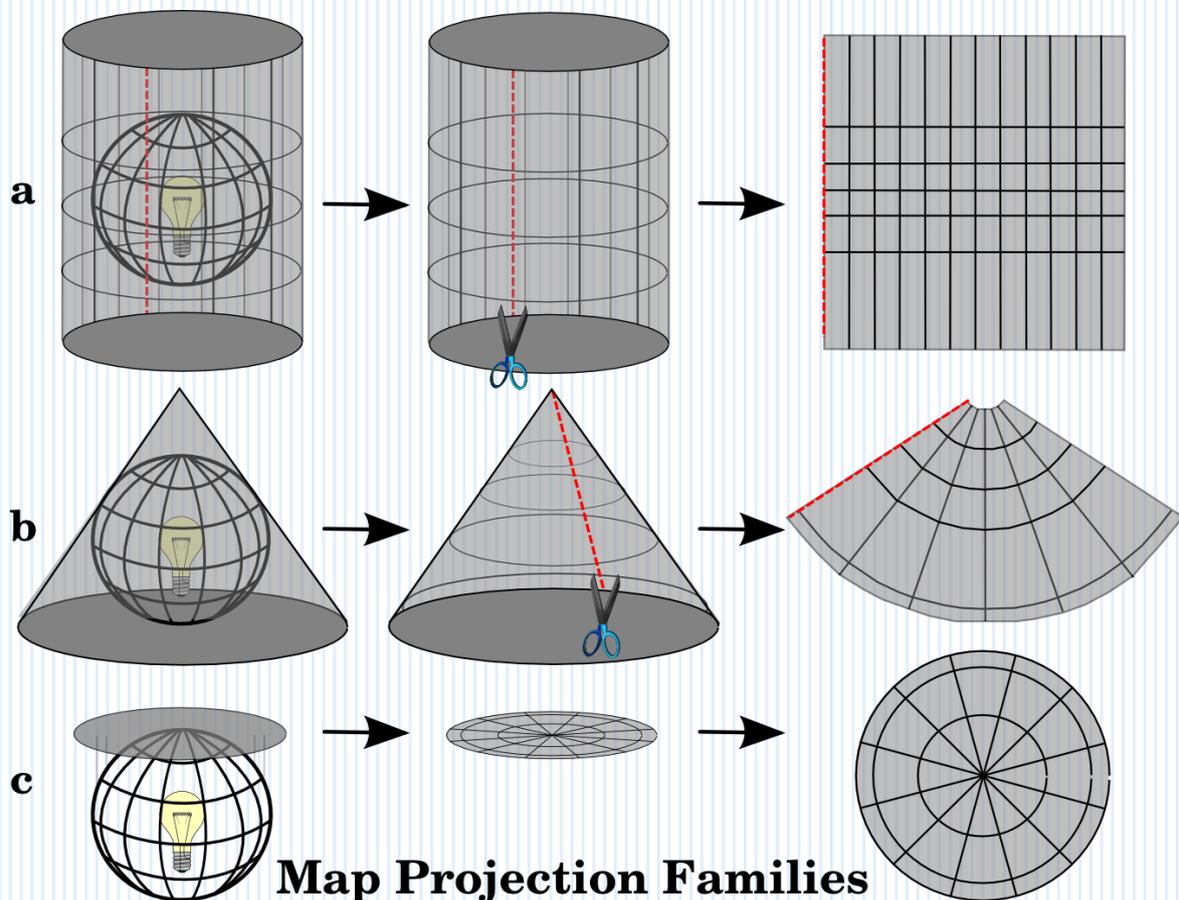


Figure 31 The three families of map projections. They can be represented by a) cylindrical projections, b) conical projections or c) planar projections ([A Gentle Introduction to GIS](#) Sutton, QGIS 2009)

Table 8. Data formats and models

The role of geoinformation technologies in geo cultural landscape research (Krek and Evelpidou 2009)

Principles of Geographic Information Systems: An introductory textbook (Huisman and de By 2009)

2.2.2. Potential sources of spatial data

According to UNESCO (1999) prior to implementing GIS, a feasibility study is usually undertaken. Costs of generating data are high and one significant factor in system viability is the cost of data capture. Therefore, it is important to identify any existing data that could be used in a GIS. The spatial data needed for a particular application can vary greatly in geographic area, purpose and content. However, some themes of data are common to almost all applications such as roads, rivers and administrative boundaries. These data themes may already exist in digital form. A detailed investigation into other GIS users and sources of existing digital data should be carried out before generating any spatial data. This will identify data that can be obtained from or shared with other users.

Potential sources of data are (UNESCO 1999):

National agencies:

A good place to start looking for existing spatial data is the government agency responsible for the production of commercially available topographic maps. Often these agencies archive a wealth of spatial data that might include:

- A.** Published topographic and thematic maps at varying scales
- B.** Digital versions of published topographic or thematic maps
- C.** Unpublished specialist maps, generated for specific projects or government agencies
- D.** Aerial photographs at different scales and from different dates
- E.** Satellite images
- F.** Open data repositories shared online by national or administrative agencies

If specialist thematic maps such as geology or land use maps will be included in a GIS, government departments and research institutes responsible for managing geological and environmental resources should be contacted. For a cultural heritage GIS, government agencies responsible for generating census data and for managing land transactions, should be contacted as they may have useful statistical and map data.

Regional and global spatial data archives:

A number of regional and global initiatives are creating archives to make available digital and analogue spatial information products. These initiatives facilitate exchange and accessibility of spatial data within the scientific community through global networks of cooperating institutions. Each institution archives spatial data relating to its field of specialization and/or geographical location.

2.3. GIS processes – Maps

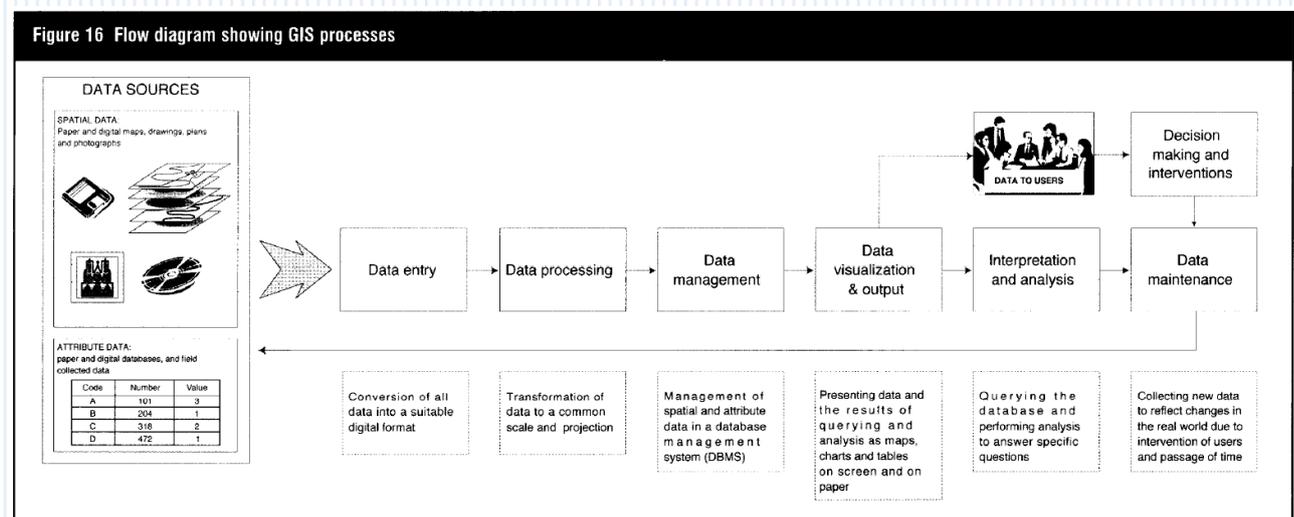


Figure 32. GIS processes flow diagram (UNESCO 1999)

2.3.1. Data collection, mapping and analysis

Once the relevant data have been collected and organised in the computer system and GIS software, the analysis of the CL case study can begin. The following analytical processes (Table 9) are a short but essential list of current GIS software analytical capabilities for simple and complex tasks (UNESCO 1999, 2012) (Krek and Evelpidou 2009).

GIS analysis

i Map overlay

As already discussed in 2.1.2., map overlay is one of the main advantages of digital maps and besides the on screen display order and superimposition of map layers information, involves the analytical capabilities of GIS between map objects and the descriptive information related to the presented objects. The geometrical characteristics of the objects are directly shown within the map window. A combination of layers may be done by calculating the logical intersection of map objects on two or more information layers (Figure 33). Descriptive information is stored within the database of each information layer and geographical information may be calculated by the GIS and added to new fields or layers of the database. Map overlay is essential for analytical GIS functions.

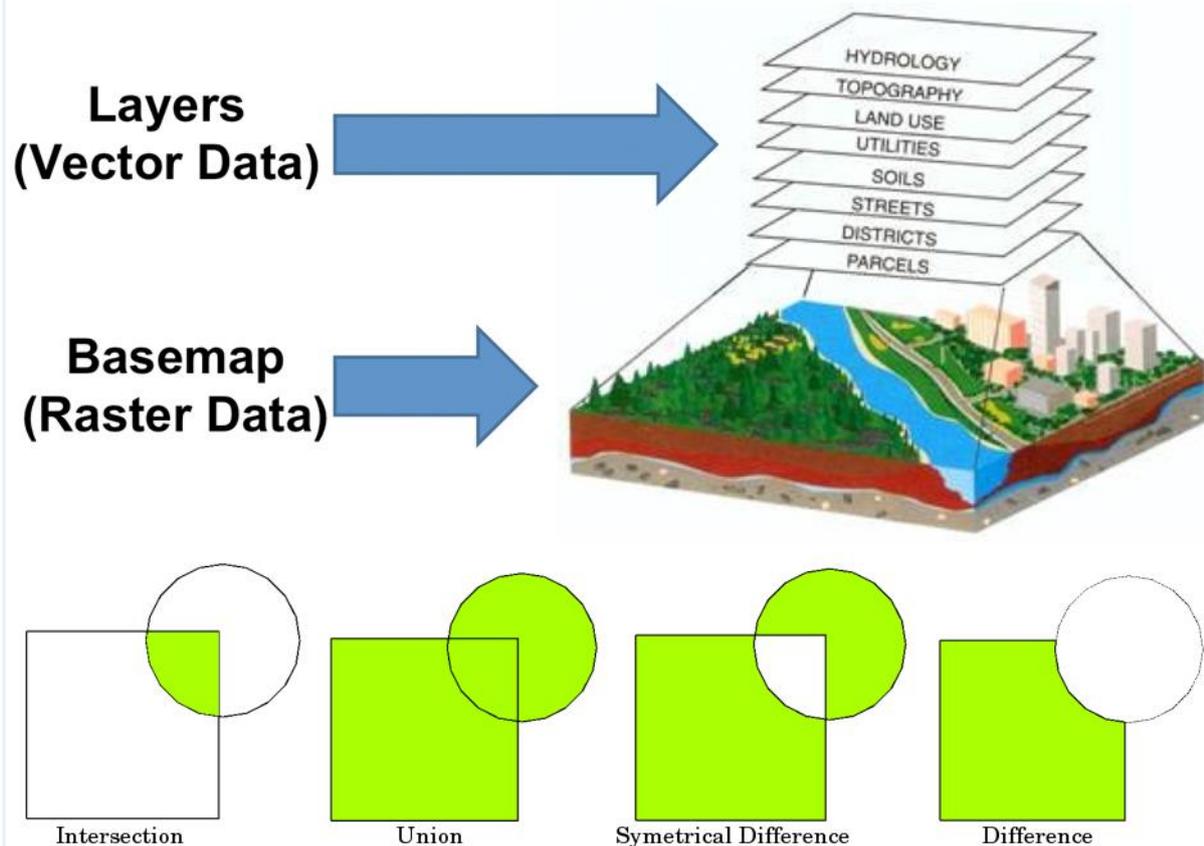


Figure 33. GIS layers overlay and Spatial overlay: A process that allows you to identify the relationships between two polygon features that share all or part of the same area. The output vector layer is a combination of the input features information. In this example with overlay with two input vector layers (a_{input} = rectangle, b_{input} = circle), the resulting vector layer is displayed green. ([Introduction to GIS Fundamentals](#) by Dunks, Brelsford and Pappas) ([A Gentle Introduction to GIS](#) Sutton, QGIS 2009)

ii Simple-Complex Query and retrieval

The ability of a GIS to browse, search and selectively retrieve information from a geographic database is one of the most important capabilities of the technology. An attribute table is used to store the data associated with objects in the map. The link between the map and the attribute table is a unique reference code number. This code can be either the geographic coordinate of the feature or an alphanumeric code. Therefore, it is possible to search either geographically (via the map) or directly search the database to retrieve information of interest. Many GIS also have the ability to search databases using Standard Query Language (SQL) an internationally accepted standardized query language for computers. SQL enables the user to formulate a complex criteria-based selection of database records (Figure 34).

Figure 17 Standard Query Language

This example shows an SQL statement that would output the name and construction date of all monuments built before 1200, from a database called 'monuments'.

	column names		database name		column name	operator	variable
select	[name, date]	from	[monuments]	where	[date]	< (less than)	1200

Figure 34. SQL Query statement to output the name and construction date of all monuments built before 1200 from the monument database (UNESCO 1999)

Searches in a map also can be made to identify all objects of a specified type within defined geographical area. Geographical-based searches can be carried out in the following ways:

1. Defining a search area using a radius from a specified point
2. Defining the search area by defining a polygon using three or more points
3. Creating a buffer around a point, line or area feature in the digital map.

Simple queries are the basic functions included in a GIS which among others include functions "find", "select", "info" and "distance measure". The function "find" enables the user to find particular features or patterns. Finding leads to the identification of items of interest either to the map or to the database. "Select" enables the selection of map objects with specific characteristics which may be depicted both in the map window and in the database. For single maps, or relatively small areas, the human

brain is very efficient at finding and selecting map objects. However, as data volumes increase, automated methods are required to effectively extract and use information from the map. “Info” returns the information stored in the database for the selected map object. The “distance measure” function enables measuring the distance simply by pointing the locations that needs to be measured on the map, and then displayed on the computer screen.

Complex queries may include the assessment of issues controlled by user defined variables. A GIS platform which contains appropriate data can evaluate different parameters and respond with an estimation for difficult questions/issues as, for instance “what happens if” type of questions.

iii Topological analysis

Connectivity: Network analysis is the modelling of movement through linear networks such as rivers or roads. One of the most common types of network analysis is the identification of the shortest path through a network. Any variable, such as distance, speed or rate of flow, from an attached database can be used as the basis for the shortest path analysis (Figure 35).

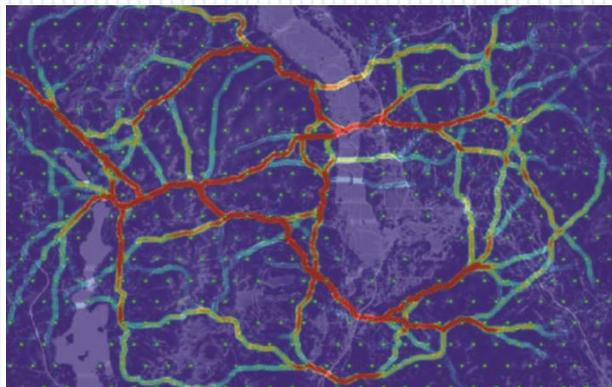


Figure 35. A factorial least-cost path analysis, evaluating least cost paths (lines in blue to red, with red showing paths with the lowest costs) among many source areas (green points) (Rudnick et al. 2012)

It is also possible to generate a point data set based on an expenditure value, referred to as cost, such as travel time in hours from any point in the network to a user defined destination. Each point would have as an attribute the cost of moving from that node to the user-specified point. A surface can then be generated from these points.

Adjacency: Using topological relationships between features, it is possible to identify adjacent polygons. For example, if a user has a layer of land-use data indicating the extent of monumental land and the surrounding land-use classes such as industrial, commercial, agricultural and settlements, then the user can identify all areas where potential threats to the monumental land might occur. It might be that settlements in the area are rapidly expanding and the user could identify all the areas where

settlements about monumental land in order to monitor the situation more closely.

Containment: Diverse sets of data are often incorporated within a GIS. Each layer records one theme such as roads, land use, geology or hydrology. Overlay analysis is used to determine which features or attributes share the same physical space. This data can be integrated so that relationships between the different data sets can be examined and analysed.

Simple overlay analysis can be used to assess the appropriateness of land use within a given area. For example a user wishes to examine land use within monument protection zones. By overlaying a land use map layer with a protection zone map layer it is possible to identify the land uses within the protected area. Boolean algebra, which specifies how the map features should be combined, is used to execute overlay analysis. Boolean algebra utilizes operators such as OR, AND, NOT, XOR (exclusive OR) (Figure 36).

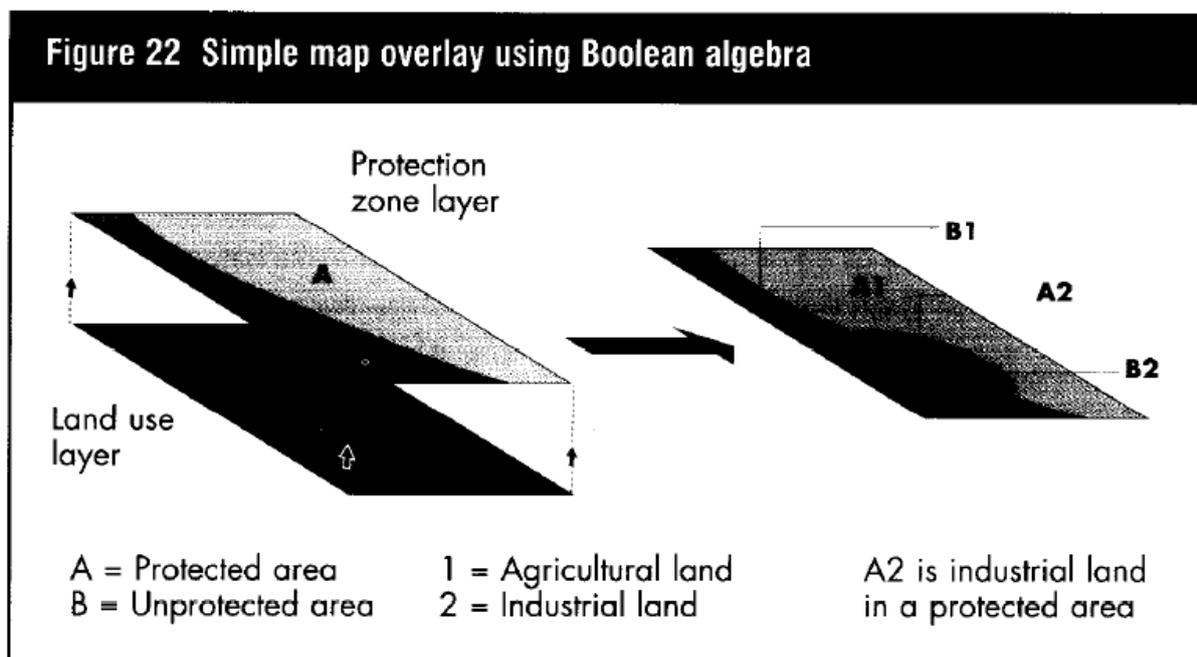


Figure 36. Containment land use within monument protection zones. By overlaying a land use map layer with a protection zone map layer it is possible to identify the land uses within the protected area. In the example it is clear that there is an area of industrial land within the protected monument zone. This identifies an incompatible and prohibited land use (UNESCO 1999)

iv Distance mapping

Distance mapping is used to calculate and display how far every point within a given area is from a user-defined source. A source can be anything from a road to a city to a site entrance point. Distance can be measured in terms of geographical distance or

in terms of effort to get from one point to another (cost). Thus, a distance map can be used for example to show the distance from archaeological sites to all other locations throughout the study area, in order to determine the likely impact of human habitation on the archaeological sites.

v Surface analysis – Spatial modeling

It is possible to generate three-dimensional models of the earth's surface, known as a digital elevation models (DEM) or digital terrain models (DTM). These models are based on measurements of height variation of the earth's surface taken from aerial photographs, satellite images or by directly measuring the earth's surface using topographic or other field survey techniques. Using a DEM it is possible to generate additional information about the physical surface of the area mapped like:

Aspect map: Indicates the aspect or direction of hill-slopes. Identifying the steepest down-slope direction from each cell to adjacent cells generates a surface map that represents the compass directions of each slope. These are indicated by different colours.

Slope map: Identifies the slope or maximum rate of change in elevation from each cell to adjacent cells. The derived slope angles or degrees are grouped into classes and displayed with each class assigned a different colour (Figure 37).

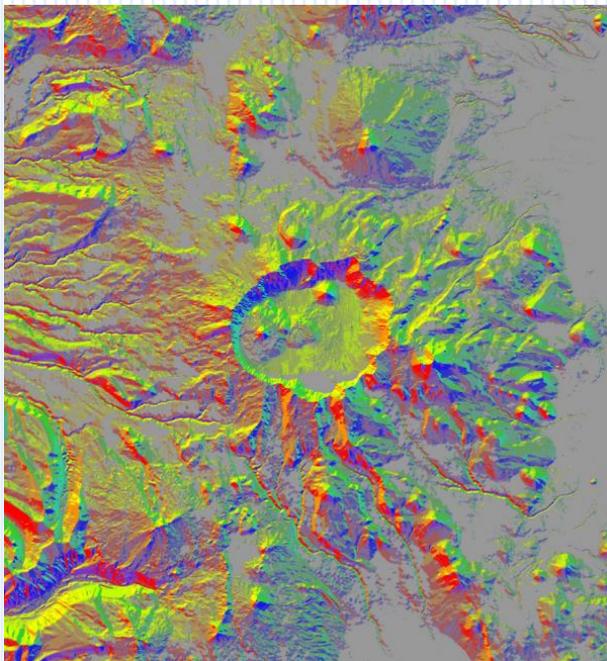
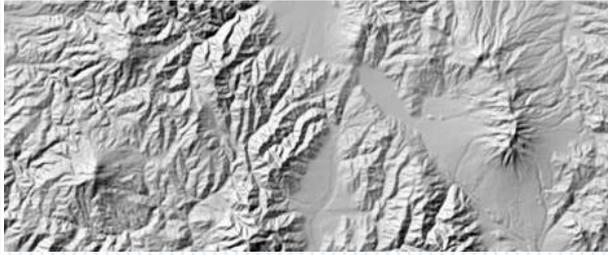
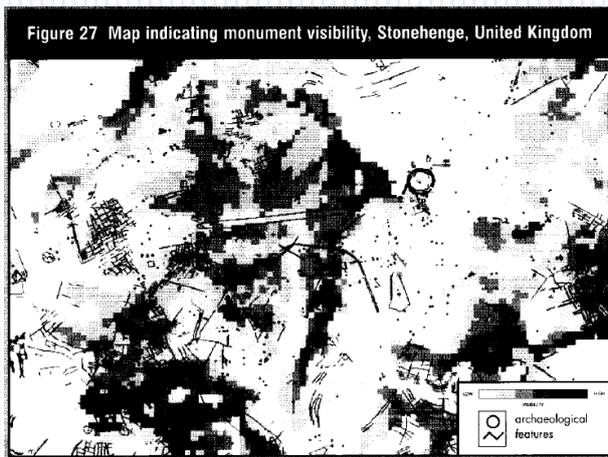


Figure 37. Aspect – Slope Map of the area around Crater Lake, Oregon. The map combines two properties, the direction of slopes (aspect) and their steepness (degree). The direction of the slope is expressed in the hue – different directions are different colours, and the steepness of the slope is expressed by its saturation – steeper slopes are brighter colours (Buckley ESRI Mapping Center Lead 2008)



Hill-shade map: Visualizes the sun's illumination on an elevation surface. A hill-shade map can be used to perform analysis, such as determining the length of time and intensity of the sun at a certain location (Figure 38).

Figure 38. A hill-shade is a grayscale 3D representation of the surface, with the sun's relative position taken into account for shading the image (ESRI ArcGIS for Desktop)



Visibility Map: By defining a viewing location (co-ordinates and elevation), it is possible to determine which locations within the study area will be visible from the specified point. Common application areas for visibility analysis are defence and intelligence, and real estate and site selection for construction (Figure 39).

Figure 39. Stonehenge monument visibility map, United Kingdom (UNESCO 1999)

Surface analysis and Spatial modeling uses and applications (GISGeography 2021):

Microclimate: When you expose slopes to sunlight, it creates microclimate conditions. In other words, these are mini-climate areas different from the area around them. For example, there can be a south-facing hill that supports small woody plant species because it is much hotter, dryer, and more desert-adapted. If you compare this to the opposite side, north-facing slopes receive less direct sunlight because of their orientation.

Specialized Agriculture: Cultivating south-facing slopes in the Swiss Alps using aspect data because it shelters from cold and dry winds which is critical to successful crop growth. Farmers also herd cattle and sheep on the Swiss Alps and move them away from the snow-covered peaks to the valley floor.

Ski Slope Selection: Aspect maps are ideal in ski slope site selection because the slope direction determines how much incoming solar radiation directly hits the face of the slope affecting the overall quality of ski slopes. For this reason, planners prefer north, north-west, and north-east slopes for ski slopes.

Remnants Rainforest: Remnants of rainforest (in Australia) are almost always found on east-facing slopes because it protects from the westerly wind. Also, lower radiation loads result in reduced water loss. This protects rainforests from fires and helps these species survive in these microclimates.

Building Constraints: Prohibiting construction on south-facing slopes because they undergo more extensive freeze/thaw cycles. This freeze/thaw cycle can erode the ground beneath and reduce the overall stability. Aspect data can determine these prohibited building zones.

Vegetation Erosion: Finding the dominant vegetation types dependent on aspect and enhancing erosion modeling using aspect and vegetation to see how slopes will erode over time along with precipitation, temperature, and growing periods. Also, land degradation by interpreting soil erosion and surface runoff has been extensively modeled using its aspect.

Table 9. Data formats and models

GIS and Cultural Resource Management: Manual for Heritage Managers” (UNESCO 1999)

Geographical Information Systems in Underwater Archaeology (UNESCO 2012)

The role of geoinformation technologies in geo cultural landscape research (Krek and Evelpidou 2009).

2.3.2. Data presentation and associative visualisation

Because GIS maps are recorded on different layers, it is possible to visualize any desired combination of data held within the system and to generate custom made maps. Traditional maps communicate only location and geometric information. However, because GIS uses locations for referencing attribute data, it is possible to visualize not only location of real world objects, but also values and characteristics associated with a feature at that location. Attribute values relating to map features can be visualized in map form. The method will depend on the nature of the data and the type of map feature related to the attribute. Most common methods visualizing attribute data in maps (Table 10) (UNESCO 1999, 2012) (Krek and Evelpidou 2009):

GIS associative visualisation

i Unique value map

In a unique value map a different colour is used to represent each unique value for the feature attribute being mapped (Figure 40). For example, in a land-use map the

colour used to fill each polygon corresponds to a specific land-use classification, e.g. red = residential, green = agricultural and black = industrial.

Unique value maps are useful for mapping three types of attributes:

1. Attributes describing the name, type, condition or category of a feature
2. Attributes that uniquely identify features, e.g. Asia-Pacific, Europe and Africa
3. Measurements or quantities which have already been grouped, e.g. monument age 1st-6th century, 6th-11th century and later than 11th century.

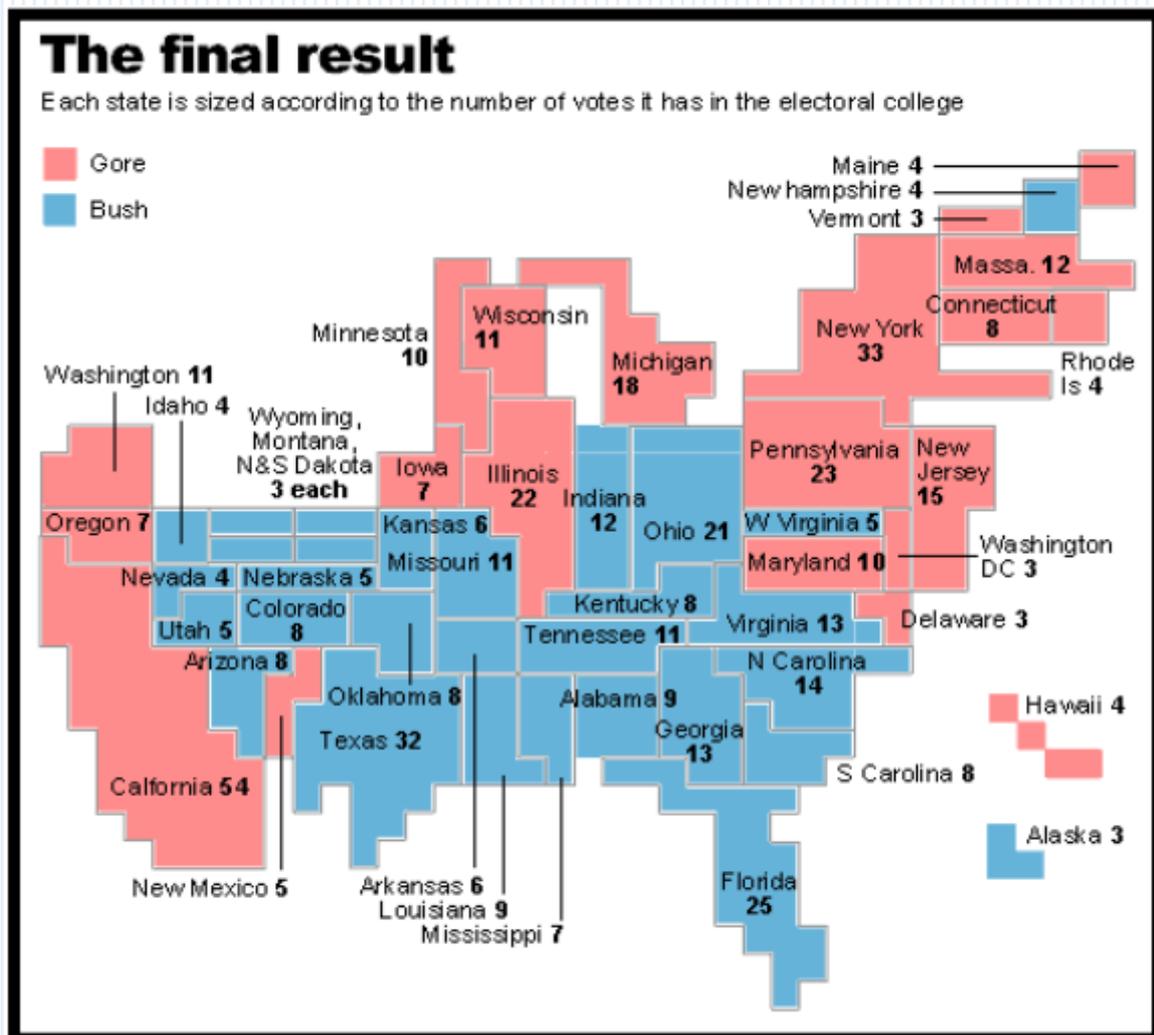


Figure 40. Area Cartogram – Electoral Votes by State, with attributes the number of votes in the electoral college per state and the person representing ([Introduction to GIS Fundamentals](#) by Dunks, Brelsford and Pappas)

ii Graduated colour map

In a graduated colour map (Figure 41) a range of values for an attribute are displayed using a graduating colour scale. Graduated colour maps are useful for visualizing data that are ranked, e.g. 1 to 10, low to high; or progress numerically, e.g. measurements or percentages. They often are used to show elevation or temperature. In the case of a temperature map, temperatures ranging from cold to hot are displayed using colours graduating from blue to red, as these colours are commonly used to symbolize low and high temperature respectively.

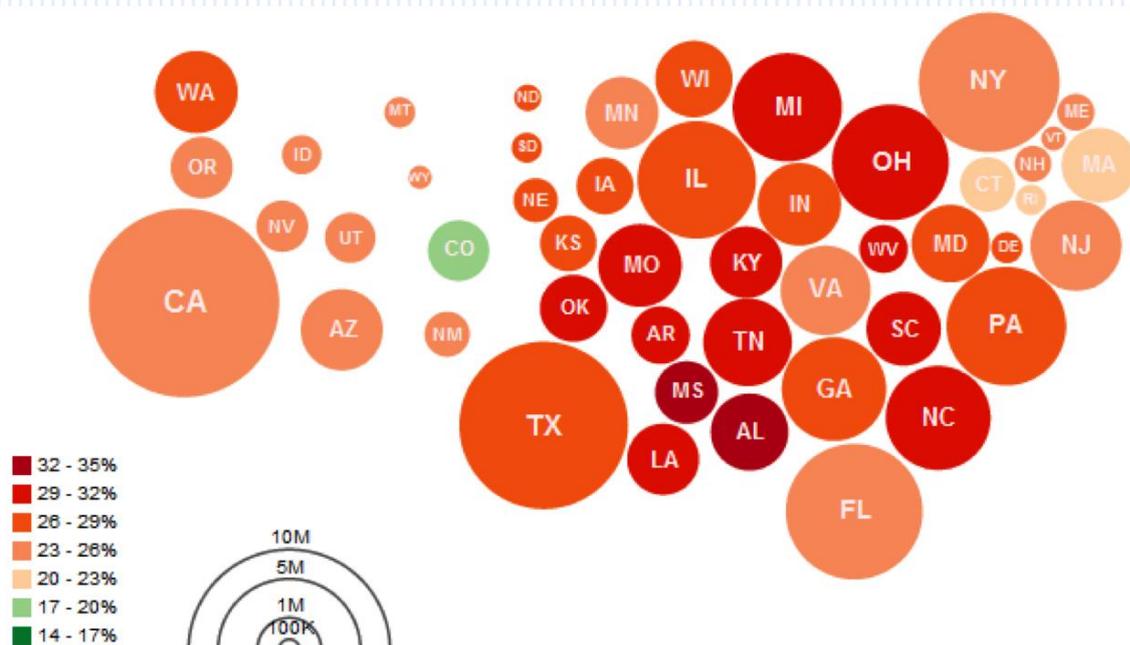


Figure 41. Dorling Cartogram – Obesity by State, with attributes the absolute number of obese people per state and percentage of obese people, represented with circle area and colour respectively. ([Introduction to GIS Fundamentals](#) by Dunks, Brelsford and Pappas)

iii Graduated symbol maps

Graduated symbols are used to represent values associated with point data. The points may represent cities, schools or monuments. Points can be plotted on the map using a symbol that is proportional in size to the value being plotted.

iv Dot density maps

Dot density maps (Figure 42) are used to graphically show the distribution and density of a particular phenomenon over a geographical area. Density maps are commonly used to visualize population density. In a dot density map, a single dot has an assigned value such as one dot equals 1,000 people. To produce a dot density

map, data are read from an attribute table and then the appropriate dot value is plotted on the map. For example, if one dot equals 1,000 people and a city has a population of 60,000, 60 dots will be plotted in the polygon representing that city.

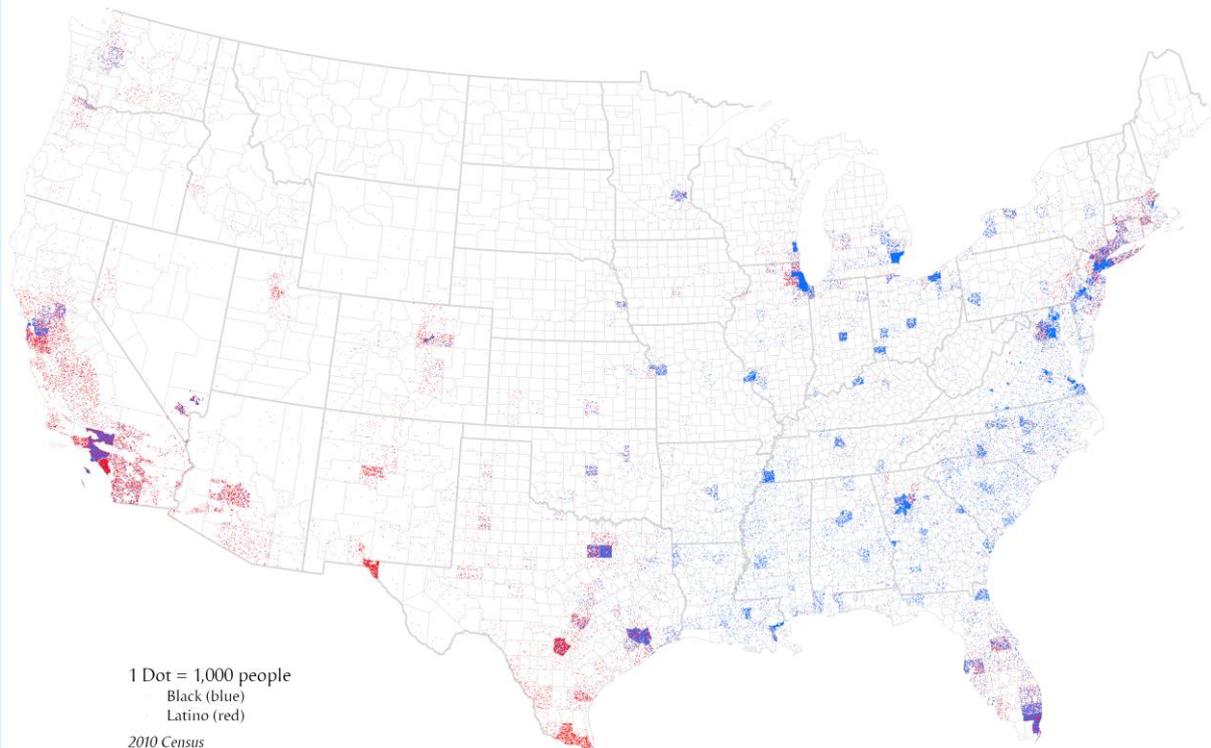


Figure 42. A bivariate dot density map showing the relative concentrations of the Black and Hispanic populations in the United States in 2010. (User:Bplewe, Wikipedia 2020)

▼ Chart maps

Chart maps (Figure 43, see also 10) utilize a pie, line or bar chart to show relative values at a location. Charts are used to display more than one attribute of a feature and enable comparisons to be made.

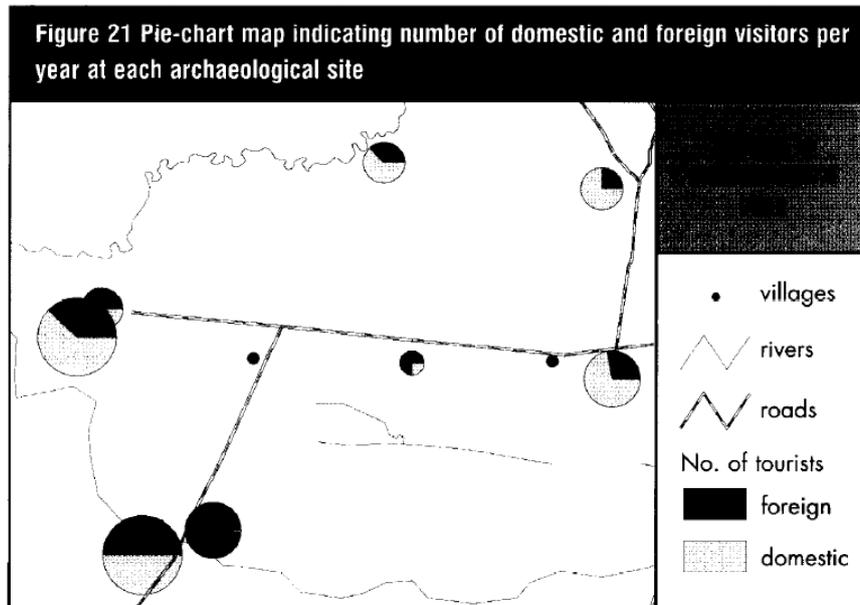


Figure 43. Pie-chart map indicating number of domestic and foreign visitors per year at each archaeological site (UNESCO 1999)

Table 10. GIS associative visualisation

GIS and Cultural Resource Management: Manual for Heritage Managers” (UNESCO 1999)

Geographical Information Systems in Underwater Archaeology (UNESCO 2012)

The role of geoinformation technologies in geo cultural landscape research (Krek and Evelpidou 2009).

Like Krek and Evelpidou (2009) argue visualisation can be used in all phases of a research. Very often it represents an intensive phase during the last stages of research, including the selection of the map sections that need to be printed, using an appropriate symbology, creating a legend, and generally following all necessary steps in order to develop a map (e.g. orientation, scale, etc.). Basically it is used as the substantiation framework of the study’s results and conclusions, but it usually starts at the beginning of the research, since every detail that comes from the observation of aerial photographs, satellite images, fieldwork, etc. is simultaneously gathered within different information layers.

The correlation between information layers is established through GIS, and it is the first step to develop a map. Maps and visual representations are also created in order to reach conclusions for research purposes or for a particular (geo)cultural landscape analysis. The creation of a map is not an easy process, since it requires knowledge of all the proper symbology of the depicted characteristics, as well as scientific know-

how that will filter out the inclusion of unnecessary data and will ensure the optimal depiction of the necessary characteristics.

In conclusion for data presentation a data layers selection and visualisation strategy is needed in order to present a clear message and enable a plateau of collaboration for all stakeholders that fosters sustainable CL use planning and management.

2.4. Implementation issues and challenges

Over the past few years, many technical and financial impediments to GIS implementation have been removed. Developments in hardware and software, and associated cost reductions have made it possible to implement GIS and to integrate remotely sensed data on a PC platform at a relatively low cost. Implementing a GIS within an organization will cause structural changes. However, there are issues (Table 11) that can have an impact on the success of GIS implementation. First, it is important to recognize that personnel and organizational or institutional factors play a role in determining the success and sustained use of the system.

GIS Implementation issues

i Institutional/Organisational

Prior to implementation, a study must be made to determine the scope of GIS implementation. The decision to implement a large-scale GIS has greater consequences in terms of organizational change. Implementation of a GIS to support the objectives of a specific department will cause a lower level of impact to the organization but restricts the availability of data and limits inter-departmental coordination. Whatever the scope of implementation, the system must be compatible with and be able to be integrated with any existing information management procedures. The organizational structure of an institution must be modified before beginning a GIS implementation, necessitating the formation of a small, dedicated GIS team that can draw on other human resources both within and outside the organization as needs arise.

ii Identifying and servicing needs of potential users

There are four conditions which must exist within an organization to ensure the effective implementation and utilization of a GIS:

1. The existence of an overall information strategy based on the needs of users.
2. The availability of the necessary resources within the organization such as staff skills and financing.
3. The personal commitment and participation of individuals at all levels of the organization
4. A high degree of organizational stability with respect to personnel, administrative structures and environmental conditions.

iii Training

To maximize participation from a GIS team, training programmes should be designed at the earliest stage of the project. Staff for a GIS team must be selected based on computer literacy, relevance of the field of expertise, personal motivation and level of commitment to both the organization and to the GIS project. Different training must be provided for each level of responsibility.

Communication should be established between the technical staff responsible for producing the information and the operational staff using the information to make decisions. Often, end users may be unaware of the capabilities of the system, and while the technical staff is aware of the system's capabilities, it may not know what analysis to carry out or what output to generate. Ensuring that there is a "knowledge overlap" between the GIS operators (data suppliers) and the management staff (data users) can solve this problem.

iv Communication

The introduction of a GIS will cause changes within an organization and may create some initial anxiety. Communication about the benefits of the system and what is going to happen and when is a key factor for successful implementation.

Four factors affect the end users and, therefore, must be clearly communicated:

1. All map-based information and resource data will reside in the GIS. The end user may witness the disappearance of local, individual paper-based records.
2. All information will be recorded and displayed in a standard format.
3. Data control and management will reduce the organization's dependence on any

individual “local expert” for local knowledge.

4. Data will become freely available across traditional departmental barriers.

The functions and data content of a GIS must be tailored to the specific requirements of the end users of the system. There is no single solution appropriate for all cultural resource management applications. A key issue in assessing feasibility of a GIS is the availability of a data supply infrastructure to support initial data and future maintenance needs. In order to implement a GIS within a limited budget, sharing data with other existing GIS users can enable a GIS realization that would otherwise be too expensive. Data maintenance efforts are crucial and are a significant future cost. To realize the potential of a GIS, there must be an ongoing financial and human resource commitment. GIS implementation is a serious commitment. A well-structured and stable organization with a suitable staff is a pre-requisite for successful implementation. If the necessary environment for implementation exists or is created, a GIS can revolutionize the handling and use of an organization’s spatial data.

Table 11. GIS implementation issues

GIS and Cultural Resource Management: Manual for Heritage Managers” (UNESCO 1999)

2.4.1 Scale, error and accuracy

The scale of data used is application dependent. It is likely that several different scales of data will be used to address various management and problem-solving objectives. It is very important to remember that although a digital map can be magnified greatly, the map data are only accurate at the original scale. Therefore, maps should only be used to perform analysis at the scale at which they were originally generated (Figure 44). Field visits are necessary to provide reference data in support of map generation and map accuracy. One method of assessing the accuracy of thematic map data is to utilize a random sampling strategy. A comparison is made of the classification of an area of land by means of image interpretation and the actual classification of the same area as observed on-site. The sample points should be different from those used for reference data when generating a map theme to avoid a misleading accuracy assessment (UNESCO 1999).

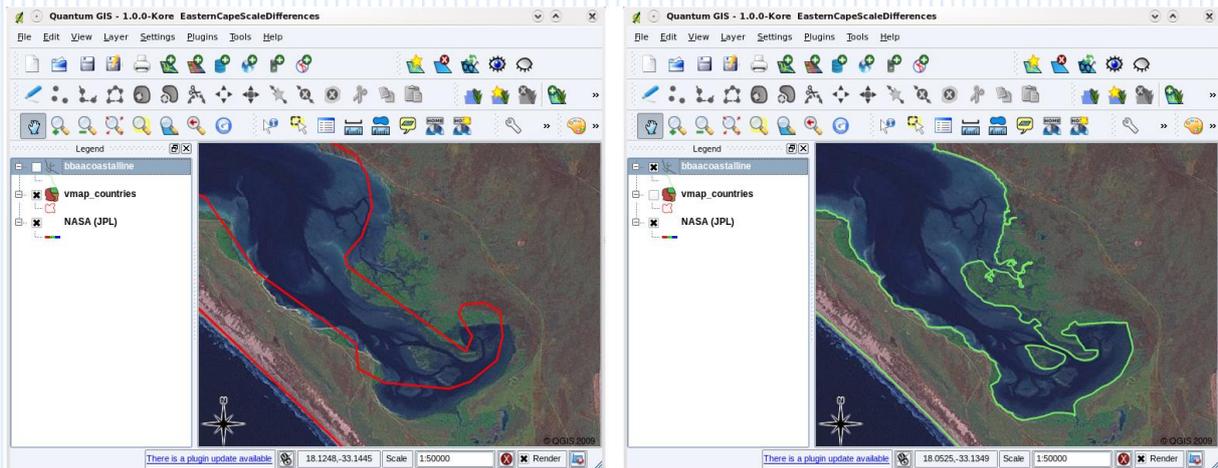


Figure 44. (Left) Vector data (red lines) that was digitised from a small scale (1:1 000 000) map, (Right) Vector data (green lines) that was digitised from a large scale (1:50 000) map ([A Gentle Introduction to GIS](#) Sutton, QGIS 2009)

A GIS incorporates data from a wide variety of sources that have varying degrees of accuracy. The sources of error must be identified. Errors can be either inherent or operational. Inherent errors refer to uncertainty and inaccuracy in the source materials, and operational errors are uncertainties that are introduced during the data capture process. Inherent errors are difficult to trace and correct, but operational errors can be reduced by careful control of the data entry process. Suitable data validation and verification processes need to be implemented to reduce operational errors to an acceptable level (UNESCO 1999).

2.4.2. Data origins and fragmentation

Yang and Han (2020) report that the fragmentation of heritage information is a major obstacle in the efficient conservation of their study case of Slender West Lake scenic area. As a cultural landscape heritage, the daily management of Slender West Lake requires a high degree of integration of multi-disciplinary, multi-period, and multi-sectoral information. However, the current heritage information is distributed among different institutions and in different forms and formats. Management departments, museums, libraries, archives and planning bureaus hold different sets of information about the historical and current status of Slender West Lake. However, this information lacks an integrated platform, which leads to the inability to fully consider the multilevel value of cultural heritage in making management decisions. Similarly, along with the wide variety of sources, with varying degrees of accuracy and in different forms and formats like already discussed, conflicting or identical entries of data between sources, regarding the same topic, monument or any other aspect of

cultural heritage may arise as a serious challenge in the implementation of GIS and sustainable CL management process.

2.4.3. *The intangible assets of CL*

Yang and Han (2020) reflecting on the new requirements for digital technologies in cultural landscape heritage conservation bring forward the division between humanities and sciences. Digital tools like GIS can represent the physical components, knowledge of physical settings, and the activities occurring in these settings; however, they can hardly represent some of the invisible landscapes, especially its spiritual connections. Authenticity and integrity of cultural landscapes in China, consist of spiritual connections created and delivered mainly through traditional landscape representations such as paintings and poetry. Therefore, a more straightforward way to solve this problem is to develop and expand the multimedia database functions of GIS. More powerful data compatibility, support for more data types and a more easily extensible database structure using GIS tools will provide a better platform for integrating traditional landscape representations artefacts.

A more practical problem for the GIS database was that items to be included in a GIS must have longitude and latitude values, which indicate a geographic location. However, many mythical or oral stories about Chinese cultural landscapes are not necessarily linked with any spatial locations. This lack of “physical carriers” is a significant barrier to the representation of these invisible landscapes using GIS. Therefore, objective documentation needs subjective interpretation. The information source of digital documentation should be extended to include phenomena not represented by experimental evidence (Yang and Han 2020).

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Co-developed Rural Regeneration plans⁷¹

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⁷¹ This chapter has been authored by Hanna Elisabet Åberg, Angela Santangelo and Simona Tondelli as part of the UNINET Cultural Heritage research group of the Alma Mater Studiorum - University of Bologna.

I. An introduction to Landscape Character Assessment

I.1. Background

Rural landscapes across the globe are the result of natural and cultural processes, embodying a continuous collaboration between man and nature. Within the European Union, rural landscapes cover around 95% of the whole territory (Agnoletti, 2014). More than half the population within the EU live in a rural setting⁷² and in the very same areas, almost half of European gross added value is created (EUROSTAT, 2018)⁷³. Despite this, many rural areas suffer from economic, social and environmental problems, leading to rising unemployment, civic disengagement, depopulation and marginalization, which in turn generates environmental degradation or loss of cultural, biological and landscape diversity that also threatens cultural and natural heritage resources (de Luca et al., 2021; Thurley, 2015). From this point of view, rural areas have an extensive economic potential that can be exploited in tackling their socio-economic challenges towards a sustainable regeneration of rural communities. In accordance with this, the Faro Convention (European Union Council., 2005) claims that there is an urgent need for emphasizing the value and the potential of cultural heritage as a resource for sustainable growth and quality of life across Europe. Rural landscape can be considered among the greatest assets of living heritage, not in terms of size (see above) but also as prospects in recreation, nature conservation, and water management (Vos & Meekes, 1999).

Besides an immense heritage value that must be protected, *landscape* can function a driver for development and regeneration. The EU-funded RURITAGE project (2018-2022) works specifically on this, and it demonstrates landscape as a driver through heritage-led regeneration strategies based on good practices extracted from successfully developed areas. Territories like e.g., the Wild Atlantic Way (Ireland), the Duero-Douro cultural landscape (Spain/Portugal) and the Austrått and Ørland,

Box I.1 List of abbreviations:

- CES – Cultural Ecosystem Services
- CHMP – Community-based Heritage Management and Planning
- CNH – Cultural and Natural Heritage
- ELC – European Landscape Convention
- RHH- Rural Heritage Hub
- SIA - Systemic Innovation Area

⁷² Almost 55% of EU's population lives in rural areas that including towns and villages.

⁷³ Almost 44% of the EU gross added value is created in intermediate and predominantly rural areas.

manorial landscape (Norway) represents example of diverse integrated landscape management and governance models that boosted regional development through their natural and cultural heritage (de Luca et al., 2020; Egusquiza et al., 2021). The RURITAGE project identifies six drivers for rural development under the concept Systemic Innovation Areas (SIAs), i.e., *Pilgrimage, Local Food Production, Art and festivals, Migration, and Resilience*. The sixth SIA is the theme that will be mainly treated in this guidance: *Landscape*.

Within the RURITAGE methodology *landscape* is not merely seen as places to protect and restore, but as rural territories with local communities that should be allowed to grow and develop. RURITAGE perceives heritage in its wider sense including natural and cultural heritage (for the definition, see UNESCO, 2011), beyond tangible monuments and artefacts, recognising intangible forms of traditions, social practices, and knowledge as the values that tie communities together and as a resource for sustainable local development. Although in rural areas the main economic activity has traditionally been agriculture, they are increasingly seen as multifunctional spaces: attractive for leisure activities, alternative lifestyles, and tourism. Rural landscapes provide vital ecosystem services, great biodiversity, and a habitat for many threatened species. There, RURITAGE recognize that maintaining a balance between protecting, conserving, and redeveloping heritage values of the rural landscape is foundational for a sustainable rural regeneration.

This guidance is based on the RURITAGE project's repeatable methodology for Community based Heritage Management and Planning (CHMP) (Ruritage, 2018; de Luca et al., 2021). CHMP provides guidance for rural territories around the globe to develop and enhance heritage-led regeneration strategies sustainably. The CHMP concept offers an innovative methodology that puts focus on co-development and co-implementation process in rural areas. As the methodology was developed within a European project, good practices have been extracted, tailored, and implemented in local territories across the world. The methodology builds on participatory planning, co-creation, and stakeholders' engagement through hands-on guidance.

1.2. Policy, scientific and research context

Traditionally, researchers have been carrying out their studies among themselves, policy makers have promoted territories that were of interest to them, and planners developed strategies and instruments that they believed would do the best job. However, in the last decades a new form of planning has taken shape: co-creation engagement processes that involves the local community in the planning process. Co-creation is a form of collaborative creativity that was initiated by firms first to enable

innovation together *with* rather than simply *for* customers. The user-centred design approach has been primarily a US-driven phenomenon. In Europe, much of the activity in participatory design has been going on in the Scandinavian countries where the Collective Resource Approach was established to increase the value of industrial production by engaging workers in the development of new systems for the workplace (Ruritage, 2018).

Within this framework, the notion of co-creative processes has been growing. Co-creation refers to any act of collective creativity shared between at least two people. These new types of processes encourage new behaviours, roles, and relationships. Citizens are no longer passive, but they participate as active members of the process providing inputs and they become a very valuable information source because of their final user perspective (Ruritage, 2018). The concept of co-creation had an evolution and has been transferred from the business sector to public-private collaboration. A well-known example of this is *Living Labs*. Living Labs is an emerging Public Private Partnership (PPP) concept in which firms, public authorities and citizens work together to create, validate and test new services, businesses, markets and technologies in real-life contexts (Niitamo et al., 2016; Ruritage, 2018), such as cities, city regions, rural areas and collaborative virtual networks between public and private players. The public is considered co-producers of services, policies and innovation strategies. Through citizen support, governments can solve problems more efficiently and accurately (Albury, 2005; Ruritage, 2018). Likewise, the RURITAGE methodology fosters participatory management, responsibility, and ownership of cultural and natural heritage in local communities through the establishment of Rural Heritage Hubs (RHH). The hubs are thought of as multifunctional spaces meaning that they are not only social spaces, but also physical spots where to meet and exchange ideas, practices, and experiences. Through the collective community-management within the hubs, the RURITAGE methodology gathers stakeholders and local communities in a new form of collaboration, engaging them in a participatory and community-based heritage management and planning.

While it is becoming increasingly common to set up living labs, innovation hubs, and co-creation processes in urban settings, the same approach has not been explored to an equal extent in rural areas (Egusquiza et al., 2021). Yet, the past decade has witnessed shifts in the rhetoric of rural development leading to reversals from top-down to bottom-up approaches, from centralized standardization to local diversity (Ruritage, 2018). From a landscape perspective, the potential and accuracy of involving local people in landscape planning and co-creation processes is explicitly expressed in both the Convention on biodiversity, the European landscape convention and the Aarhus convention (Plieninger et al., 2014; Stenseke, 2009; UNECE, 1998). The European Landscape Convention (Council of Europe, 2000)

definition of landscape is “*an area, as perceived by people...*” placing the public central to any understanding of landscape. Given this, there is clearly an increasing understanding and recognition of the need for involvement of citizens within landscape planning.

1.3 Cultural Ecosystem services provided by landscape

Human impact has always influenced and shaped the environment to enhance the availability of certain valued services. Human cultures, knowledge systems, religions, heritage values, social interactions and the linked amenity services always have been influenced and shaped by the nature of the ecosystems and ecosystem conditions on which culture is based (Tengberg et al., 2012). Planning for use of *landscape* today does not only contribute to safeguard natural Ecosystem Services. Nature also contributes to human experiences. This is called Cultural Ecosystem Services (CES) are the non-material benefits people obtain from nature. They include recreation, aesthetic enjoyment, physical and mental health benefits, and spiritual experiences. Through this, they contribute to a sense of place, foster social cohesion and are critical for human well-being (MA, 2005).

Box. 1.2 Cultural Ecosystem Services (CES)

Heritage values (intangible and tangible)

Cultural identity (sense of place)

Spiritual services (sacred, religious, or other forms of spiritual inspiration derived from ecosystems);

Inspiration (use of natural motives or artefacts in art, folklore, etc.);

Aesthetic appreciation of natural and cultivated landscapes;

Recreation and tourism

(MA, 2005)

Although everybody benefits from CES, their impact on life is mostly intangible, and as a result difficult to measure and quantify. However, in contrast to other ecosystem services such as carbon sequestration and erosion control, which can be documented, CES are directly experienced and subconsciously understood by people. The Millennium Ecosystem Assessment (2005) states that the importance of cultural services and values is not currently recognised in landscape planning and that this fields could benefit from a better understanding of the way in which societies influence ecosystems (MA, 2005; Tengberg et al., 2012). Simultaneously the EU Commission, highlights the importance of protecting and restoring the benefits that ecosystems provide to people has been promoted through the EU 2020 Biodiversity

Strategy, which explicitly acknowledges biodiversity and ecosystem services as underpinnings of employment, economies, wealth, and well-being (European Commission, 2011).

I.4 Stakeholder involvement for sustainable use of landscape resources

Box 1.3 What is a stakeholder?

The term 'stakeholder' refers to persons, groups or organizations that must somehow be considered by leaders, managers, and front-line staff.

(Bryson, 2004)

The RURITAGE's Community based Heritage Management and Planning (CHMP) defines local involvement as key to develop sustainable strategies and regeneration processes. These citizens defined as stakeholders that deliver important contributions in a participatory planning process (Swanwick, 2002). On a local scale, involvement of stakeholders is important to increase their knowledge of the landscape,

which is a necessity for an increased awareness of the importance of landscape (Antrop, 2007).

In the short, stakeholders are often defined as individuals or groups who effect or will be affected by a policy. Stakeholder participation can thus be defined as a process where individuals, groups and organisations are invited and choose to take an active role in making decisions that affect them (Ruritage, 2018). Stakeholder participation methodology are needed for establishing a foundation of awareness and understanding landscape values for sustainable planning. It has been suggested as a way to better understand how ecosystems relate to cultural values by having stakeholders define the contribution of ecological structure and function to CES production, relative to other ecosystem services (Chan et al., 2012; Daniel et al., 2012; Pleasant et al., 2014). Studies of perceptions, values, attitudes, and beliefs may generate more meaningful insights regarding the contributions of ecosystem services to human well-being than purely biophysical assessments (Plieninger et al., 2013). In particular, they give more precise understanding of the relevance of ecosystem services for local stakeholders, allowing greater cultural sensitivity (Pleasant et al., 2014) and recognition of trade-offs in ecosystem services valuation between different user groups, such as between tourists and local inhabitants (Fagerholm et al., 2012).

Keeping the cultural ecosystem in mind while planning is recognising the importance of a social-ecological system approach. Policy formulations should empower local people to participate in managing natural resources as part of a cultural landscape, integrating local knowledge and institutions (Tengberg et al., 2012; Virapongse et al.,

2016). Information from stakeholders brought into the deliberation contributes to avoid unintended consequences of decisions, such as environmental ones, and more adherence of those to an existing context. Stakeholder engagement increases public understanding of the issues and consequences of different choices and reveals both conflicts and agreements among different stakeholder groups. At the same time, open and inclusive stakeholder engagement, including representatives of different viewpoints, can sometimes resolve differences and build trust in the policy making process and therefore help secure public acceptance of decisions. Finally, the process of decision-making and final decisions becomes more transparent and legitimate.

2. From lessons learnt to Community-based planning: the RURITAGE methodology

2.1 Lessons learnt: landscape as the driver for regeneration

Within the RURITAGE project, three rural territories were recognized for using their local landscape successfully as a driver for regeneration. As recognised for their favourable development, they are called Role Model areas within the project. The areas that were studied were the Wild Atlantic Way in Ireland, the Duero-Douro cultural landscape bordering Spain and Portugal, and the Austrått and Ørland, manorial landscape in Norway. The project analysed and extracted good practices that could be learnt from the Role Models and replicated by other areas. The good practices were simplified to actions while further recognizing the objective behind each of them. Each recognized action can function as a collection of good practices, providing inspiration to other rural areas. The full list of recognized actions within the landscape SIA is found below:

Action ⁷⁴	Objective behind the action
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⁷⁴ The full list of actions within each SIA category can be further explored in RURITAGE deliverables 1.1, 1.2 and the journal article *Systemic Innovation Areas for Heritage-Led Rural Regeneration: A Multilevel Repository of Best Practices* (Egusquiza et al., 2021; Ruritage, 2019a, 2019b). Mentioned deliverables are also necessary for some of the activities further described under section 4.

Austrått and Ørland manorial landscape (Norway)	
Develop a participative process for the recognition and the evaluation of the cultural and natural heritage features, both tangible and intangible.	Understanding comprehensive values of the landscape
Design a framework for integrated management.	Integrated management that both protects CNH and ensures sustainable development
Duero-Douro cultural landscape (Spain/Portugal)	
Promote joint actions (also through PPP) to enhance heritage resources and create an internationally recognized brand	Implementation of a strategic tool (territorial brand) to facilitate the recognition and enhancement of existing heritage resources, the international projection and the promotion of the area not only as a tourist destination but as a competitive territory
Establishment of a Social Innovation Laboratory for the enhancement of the CNH	Implementation of a new working methodology that involves all agents operating in the territory in the decision-making process to give greater solidity to the proposals, based on real needs of interested representatives
Develop strategies to understand and manage changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity	Facilitate the development of more targeted programs and actions involving different actors with their real needs
Develop high level training programs for the management of the territory as	Improve knowledge, increase the perceived value and develop the sense of belonging of

"cultural landscape" (addressed mainly to professionals, researchers and public bodies staff)	the CNH for the communities. Promote a culture of collaboration between agents and including the population to develop a strategic orientation linked to heritage resources
Wild Atlantic Way (Ireland)	
Set out a strategy, an implementation framework and program for the sustainable implementation of the Wild Atlantic Way	Move Ireland and in particular the West side from a place to come "some day" to a "must visit now" destination
External Monitoring Group to ensure robust systems in place to ensure that there are no adverse effects on the environment	Ensure that all the direct and indirect environmental effects of the Wild Atlantic Way initiatives and actions are fully assessed to the satisfaction of competent authorities/agencies, the public and visitors
Local Economic and Community Plan developed for the region	Identify and implement actions to strengthen and develop the economic and community dimensions of the County. Reflect and support the implementation of existing and proposed National and Regional spatial, community and economic strategies
Action Plan for Jobs developed for the region and the State	To create the best environment for enterprise and job creation in the region
Strategy to maintain, strengthen and develop a thriving native language speaking (Gaeltacht) community that is defined by language	Creation of employment and development on an integrated basis of a modern economic, social and cultural infrastructure in the Gaeltacht region which will ultimately

and culture	strengthen the position of the Irish language as the predominant Gaeltacht community language
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Source: RURITAGE deliverables 1.1 and 1.2 (Ruritage, 2019a, 2019b).

2.2 Community-based Heritage Management and Planning methodology

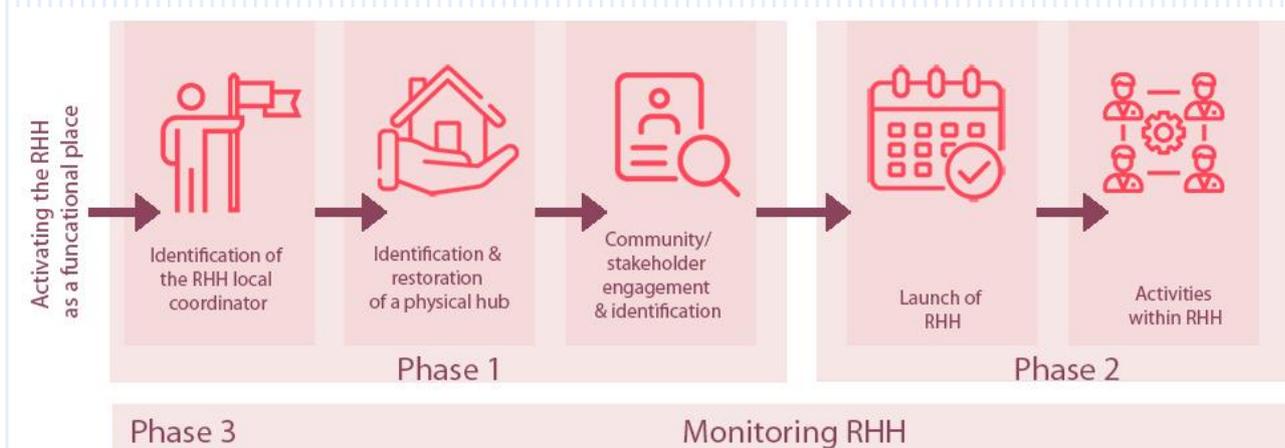


Figure 2.1. The Rural Heritage Hub phases, originally developed by RURITAGE (Ruritage, 2018)

In the following guidance each step of community development and engagement is based on the RURITAGE deliverable 2.1 RURITAGE methodology for Community-based Heritage Management and Planning (CHMP) (Ruritage, 2018). According to the RURITAGE methodology, opening a Hub would be to determine the primary intent for the community, to define the domain and identify engaging issues, to build a case for action, identify potential coordinators and thought leaders and create a preliminary design for the community. According to RURITAGE, the role of the community coordinators has often underestimated but should be understood as a crucial factor for the success of co-creation process. Therefore, during the first phase, the first step towards developing a Regeneration plan is to appoint a coordinator (read more under section 3.1). This person should identify important issues, plan, and facilitate community events, informally and actively link community members. The second step is to identify and restore/re-use a physical place as an RHH (read more under section 3.2). The third and last step of the first phase is to engage the local community and identify relevant stakeholders. This also includes maintaining and continuing to engage the community through dissemination (read more under section 3.3).

During the second phase, the local community will co-develop the Regeneration plan containing actions and strategies for heritage-led development with landscape as the driver. The main aim of the second phase of community development is to generate enough energy for the community to develop relationships and sufficient trust to discuss problems and discover what knowledge should be shared and how. During this stage communities are often particularly fragile, as the energy of starting the new endeavour often has already gone while stable structures and cooperation patterns have not yet developed. Therefore, CHMP methodology suggests as a first step arranging a launch of the RHH (read more under section 4.1). Community events like help to further build connections between stakeholders to support new ideas, identify opportunities and insights. As a second step, activities such as workshops developed to guide the making of Regeneration plans are foreseen (read more under section 4.2). The Regeneration plan contains a common vision for an area set up through a co-development process. It contains actions with specific activities aiming to make sure to realise the regeneration of the rural territory. To see examples of ready Regeneration plans, three minimized versions are visible under section 6.

The third phase will run in parallel with both the first and second phase. This phase focus on the monitoring the progress towards Regeneration in the rural area and more specifically the actions defined for the plans (read more under section 5). RURITAGE has developed a full Monitoring Platform⁷⁵, available online, where quantitative data is gathered and analysed. However, in this guidance, the focus will be on monitoring qualitative data, based on the toolkit that is fully accessible online⁷⁶. My CultRural Toolkit is a monitoring tool that is used for collecting images and feedback from citizens to monitor changes to cultural heritage with rural communities, an ecosystem service framework will be employed, and the key cultural ecosystem services (underpinning cultural heritage) will be identified by community groups (local and visitor) through workshops and surveys. In particular, My CultRural Toolkit focuses on capturing benefits from CES and their impact on life.

3. Establishing a co-creation process (Phase I)

To ensure that strategies for heritage-led rural regeneration includes the experience and knowledge of the local community, RURITAGE suggests involving all members of society and motivate them to participate in civic, social, economic, and political activities at local level. The local Rural Heritage Hub (RHH) constitutes the main meeting place for innovation and discussion with stakeholders to develop, implement,

⁷⁵ Available here: <https://www.ruritage-ecosystem.eu/kpi>

⁷⁶ Available here: <https://www.ruritage-ecosystem.eu/culttool>

and monitor the heritage-led rural regeneration plans. RHHs are thought to be social spaces, communities of stakeholders at local level, located in a physical place.

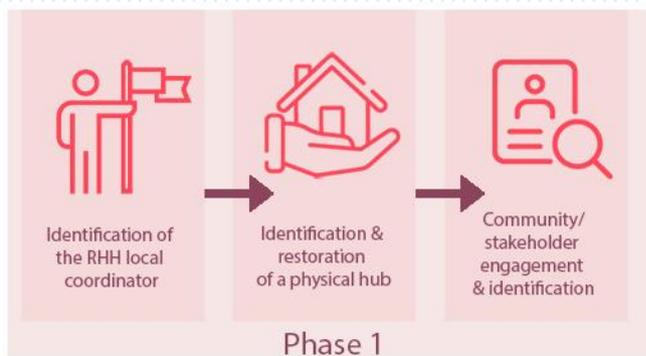


Figure 2.2 The Rural Heritage Hub phase I, originally developed by RURITAGE (Ruritage, 2018)

3.1 Definition and role of the RHH Coordinator

According to the RURITAGE methodology it is important to recognise a representative for the Rural Heritage Hub. The role of the Hub coordinators is fundamental to ensure an effective organisation and implementation of activities and events. The coordinator will be responsible for providing inputs for discussion and to guiding stakeholders towards the co-development of the heritage-led rural regeneration plans. In particular, the Hub coordinator work tasks should include: 1) Responsibility related to the hub refurbishment; 2) Coordinating the identification of the RHH stakeholders; 3) Launching the RHH; 4) Coordinating all the logistics of the Hub; 5) Knowledge brokering; 6) Maintaining a dialogue with the stakeholders and informing them about the project progress; 7) Coordinating communication and dissemination activities; 9) Monitoring the progress of the project.

To ensure a good communication and exchange of knowledge and experiences within the Hub, the coordinator is suggested to have capacity to appraise evidence to evaluate its quality, importance, and applicability to a particular context. Communication skills. Coordinators should use active listening skills to gain insight into the interests, issues and innovation of the Hub members. Mediation skills: capacity to assemble teams and foster collaboration amongst individuals and groups who would not normally work together. Coordinators should be able to facilitate the identification of shared goals and negotiate mutually beneficial roles for all group members. They shall be able to work with people with different ages, cultures, backgrounds.

3.2 Identification of a place

The RHHs have a role of living lab of open innovation and co-creation through the participation of a wide range of stakeholders in the development, implementation, and monitoring of the heritage-led rural regeneration strategies. The establishment of a physical place can be crucial to engaging local stakeholders. As a result of low digital literacy of the rural communities, a physical place can support communication and engagement activities that usually take place also online

in urban areas (de Luca et al., 2021). Place attachment supports community social cohesion, organized participation and community development (de Luca et al., 2021; Manzo & Perkins, 2006). For this reason, and to enhance and valorise local CNH, the RHH should be in a building characterized by historical and cultural value, with spaces and facilities that facilitate the undertaking of a variety of activities, depending on the number of participants and the activities themselves. RURITAGE promotes the use and reuse of already existing places. Ideally, in the identification of the RHH, rural territories should apply a circular adaptive reuse as a “restorative, regenerative and a sustainable form of conservation that extends the life of our cherished heritage, stimulate civic pride and responsibility, and preserve cultural values for future generations” (Gravagnuolo et al., 2017).

Renovation and adaptive re-use of buildings with recognized identity and heritage values turned can symbolise an important activity for the communities, since it offered them the possibility of further developing heritage ownership and it supported the place attachments fostering social cohesion and value recognition (de Luca et al., 2021). Within the RURITAGE project lifetime, several communities have chosen to reuse neglected buildings as their Rural Regeneration Hubs. An example of this is found in the town of Appignano del Tronto, Italy, where built heritage has become an important illustration of resilience. An old nursery school has been partially renovated and subsequently converted into an auditorium as the RHH.



Opening of the RHH in Appignano del Tronto (Ruritage, 2020)

Box 3.1: List of Stakeholder types:

⇒ Policy:

- Regional and local governing bodies and institutions with responsibility for territorial development, planning, management of CNH sites, tourism, education, culture, innovation, environment, disaster risk management, etc.

⇒ Public/User:

- Schools and other education and training centres;
- Civil society organizations, especially focused on management of CNH sites/buildings, arts, tourism, education, environment, etc.;
- Local Action Groups;
- Museums and libraries;
- Individual citizens interested in the management of CNH, tourism, and education.

⇒ Research:

- Universities and/or research institutes engaged in research relevant for the project such as CNH governance/management, territorial development, territorial planning, architecture, regeneration processes, economics, governance, sustainable planning, cultural and historical studies, social sciences, etc.

⇒ Industry/Services/Investors:

- Representatives of key value chains, such as tourism value chain, cultural and creative industries value chain, food value chain, arts and crafts etc;
- Public investors, e.g., institutes or centres for territorial development;
- Private investors, such as banks, foundations, etc.
- Key service providers in rural areas, like transport, education, health, leisure, mass media, telecommunication and ICT etc. Service providers differentiate from representative of key value chains since those can include both for profit and no profit organizations.

(Ruritage, 2018)

The seismic sequences, which stroke the region in 2016-2017, had extensive consequences on the built heritage of the historical heart of the town. The introduction of a hub has thereby, become an important symbol of resilience and demonstrates a new start after the disaster for its local inhabitants. The old nursery represents adaptive reuse of built heritage as social practice intertwined with its objects. The partners of RURITAGE show that buildings are not to be perceived as static objects of solely history and architecture but as living spaces for local communities as an essential part of those communities' sense of belonging. It is not just about conservation – reuse is living conservation – where old buildings get new life along with its community. Besides, the recognition importance of a physical meeting place and, the RURITAGE project also show that flexibility of the RHH is a key to engage the community (de Luca et al., 2021).

3.3 Establishing a community of SH

A participatory approach is thus an approach in which everyone who has a stake in the intervention has a voice, either in person or by representation, and the right to contribute to a decision-making process. In this sense, a participatory approach does not include simple communication where stakeholders receive an information or provide information and knowledge to well-defined questions. RURITAGE state that stakeholders need to be consulted early in the process and with an open and iterative approach a decision-making process to be participatory. This allows stakeholders to provide inputs and suggestions for the decisions to be taken and feedback on reformulation of decisions by policymakers.

3.3.1 Stakeholder profiles

To ensure a wide range of visions and opinions in the discussion within in the Hubs, RURITAGE recognizes four areas of relevant stakeholders for rural regeneration plans: 1) Policy, 2) Research, 3) Public/User, 4) Industry/Services/Investors. Guidelines for stakeholders and, according to these, a list of the most important groups of stakeholders to be involved in the Hubs defined. The reason for having defined these stakeholder groups are the following:

1. Policy: to change policy frameworks and goals. This implies regional and local governments.
2. Public: to inform and empower communities. Examples are schools, civil society organisations, Local Action Groups, individual citizens.
3. Research: to help inform research.

4. Industry/services/investors: to support the creation of new business models and sources of funding.

Examples from these categories are the representatives of key value chains, public and private investors, and key service providers in rural areas. The box (3.1) on the right-hand side provides examples of different typologies of stakeholders.

3.3.2 A growing community

The active participation of members of the RHHs are one of the most important factors for a sustainable regeneration process. Therefore, Hub coordinators, in charge of managing the Hubs and communicating with stakeholders, shall invest in a thorough identification of potential Hub members participants and invitation and recruitment process. The main points for RHH dissemination are recognized in following points:

Box 3.2:

Step 1: Prepare initial information in local language

The starting point of communication with local stakeholders must be the preparation of information materials in the local language, including leaflets / flyers and a list of potential questions that.



Step 2: Identify and engage local multipliers

'Multipliers', i.e. partners that have the capacity to reach out to a wide number of local stakeholders, should be identified. The local multipliers should be approached directly, and sufficient efforts should be invested in engaging them into the RHH (as participating stakeholders or at least as supporters). Once such partners share the vision and goals of the RHH, they will contribute to RHH formation by distributing information through their channels and inviting their contacts to join the RHH.



Step 3: Reach out through existing actors and channels

Local communities are encouraged to rely on own local experience. Informal communication with the members of stakeholder groups would be very helpful, (i.e. simply asking them what the best way to reach out to their organisations/institutions is).

In this sense, a strategy would be to identify ‘local leaders’ – well-known and respected representatives of local communities – and to invite them as the RHH stakeholders and local multipliers, since they can potentially reach both residents as well as local organisations and institutions.



Step 4: Organisation of Information Days

When contacting stakeholders as presented above, it is recommended to invite them to an Info Day where detailed information about RHHs will be presented. During the Info Day, the stakeholders should be invited to join the RHH.

(Ruritage, 2018)

4. Co-development of regeneration plans (Phase 2)

The hub is not only a physical meeting place but a community of local stakeholders where co-creation activities take place. The objective of this phase is to involve the local stakeholders and all the civil society in a participatory process of co-development and co-implementation of the heritage-led rural regeneration strategies. The RHHs represent living labs, where local stakeholders and inhabitants cooperate to develop heritage-led regeneration actions for their territory. The knowledge and skills acquired from other rural areas, via a participatory planning process allows rural areas to tailor and adapt strategies to the specific

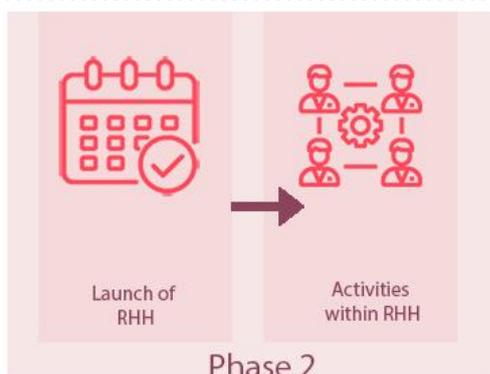


Figure 4.1 The Rural Heritage Hub phase 2, originally developed by RURITAGE (Ruritage, 2018)

needs and challenges. During the co-development phase, the CHMP methodology suggests organizing several workshops, open public events, and other meetings with local stakeholders. Within RURITAGE, according to the guidelines of the CHMP methodology, a minimum set of activities have been defined for the co-development phase of the heritage-led regeneration strategies. This chapter is aimed at explaining

the overall objectives of the different events and workshops that has been organised, and the main outcomes.

Box 4.1: List of co-development events to establish a Regeneration plan:

1. Launching event of the RHH
2. Serious game
3. Participatory preparatory workshop
4. Event to define business models
5. Round table with the key stakeholders
6. Final event to launch implementation phase

(Ruritage, 2018)

4.1 Events for increased local outreach

Once relevant stakeholders have been identified and engaged the stakeholders, the local community should officially open the Hub. CHMP methodology recommends organizing a first public event (1). The RHH will then become the place for co-developing, co-implementing and co-monitoring the actions in the following tasks. It is worth highlighting the importance of engaging the local community in making use of the physical Hub location for other activities not directly related to the project. In this way, these spaces will become vibrant and alive with a wide range of activities and events targeting as many different groups as possible. The local communities must put efforts on this point from the beginning of the establishment of the RHHs. It is also important to arrange a final event (6) to state that the implementation of actions that have been defined in the Regeneration plan will start.

4.2 Workshops for co-developing the Regeneration plans

The objective of this phase is to involve the local stakeholders and all the civil society in a participatory process of co-development and co-implementation of the heritage-led rural regeneration strategies. Each local community will have to discuss the challenges and opportunities of their rural landscape in a critical way, leaving room for additional ideas and proposal coming from the RHH participants. The RURITAGE

methodology suggests organising several dedicated activities within their engaging representatives of their local communities. One Hub coordinator has been identified at the start of the project and will be responsible for the smooth running of the activities organised within the Hub space. Each RHH are suggested to arrange the following activities on their path to develop Heritage-led Regeneration strategies and plan:

Box 4.2: Serious game⁷⁷ (2)

Objective: to develop a shared vision of the future of the area

Methodology: a board and role game where various scenarios can be developed.

Participants: around 10 people per group.

Moderator skills: no facilitation skills needed, but it is necessary a good knowledge of the game dynamics.

Outcome: shared vision of the future of the area, stronger collaboration among stakeholders participating.

Learn more: RURITAGE deliverable 2.2 (Ruritage, 2021a)⁷⁸

Box 4.3: Participatory workshop (3)

Objective: to start the development of the heritage-led strategies starting from the good practices of RURITAGE (see section 2.1) developed in form of playing cards. Extend the discussion on regeneration plans to a wider audience and complementing input gained from serious game activity.

Methodology: a participated workshop where stakeholders use RURITAGE cards to discuss good practices and tailor those to their territory.

Participants: flexible number

⁷⁷ To get an overview of the Serious Game, there is also a video available:
<https://www.youtube.com/watch?v=OxV0UesYhV8>

⁷⁸ Yet to be published

Moderator skills: no facilitation skills needed, but it is necessary a good knowledge of the workshop dynamic.

Outcome: Good practices selected as more relevant by local stakeholders, new practices and idea coming from the stakeholders.

Learn more: RURITAGE deliverable 2.1 (Ruritage, 2018)

Box 4.4: Event to define Business Model (4)

Objective: to develop Canva business model for some of the selected action in the participatory workshop.

Methodology: an adaptation of the traditional Canva Business model with the integration of an online tool

Participants: flexible number.

Moderator skills: good knowledge of the CNH adaptation of the Business model Canva is needed. **Outcome:** prioritization of the different possibilities to be undertaken within an action.

Learn more: RURITAGE deliverable 3.3 (Ruritage, 2019c)

Box 4.5: Round table with key stakeholders (5)

Objective: to define the details for the implementation of the action and the role and contributions of the local stakeholders to action. Based on this to draft the agreement with them (public-private partnerships, voluntary agreement, etc.).

Methodology: a series of informal meeting with local stakeholders.

Participants: depending on the type of action and the stakeholders involved.

Moderator skills: no facilitation skills needed, but it is necessary a good knowledge of the game dynamics.

Outcome: shared vision of the future of the area, stronger collaboration among stakeholders participating.

Learn more: RURITAGE deliverable 2.1 (Ruritage, 2018)

5. Qualitative monitoring: My CultRural Toolkit (Phase 3)

The development of methodologies that assist with the collection and understanding of perceptual and natural data. This deep workshopping approach allows stakeholders to engage with the natural environment and convey the landscape values that are important to them. Traditionally, perceptual tools for involving people have generally been a one-way approach, in that professionals provide information and/or proposals and stakeholders respond by providing their views (Carys Swanwick, 2002).

Box 5.1: Five diverse tools

The kit consists of three physical tools and two digital tools.

The physical tools are:

- I) Mini-Landscapes,
- II) Object Mapping
- III) Walking Maps.

The digital tools are:

- IV) Rate My View App
- V) Landscape Connect App

(Resource Ecosystem, 2020.)

The stakeholders are generally rather passive in this process and are not invited to take an active part in developing ideas or proposals. It can be argued that it is more rewarding and constructive if stakeholders' participation is active. A wide range of interactive methods exist which are geared to meaningful involvement of stakeholders and can be adapted for use.

My CultRural Toolkit is a powerful co-monitoring tool that is used for collecting images and feedback from citizens to monitor changes to cultural heritage with rural communities, an ecosystem service framework will be employed, and the key cultural ecosystem services (underpinning cultural heritage) will be identified by community groups (local and visitor) through workshops and surveys. Local and visitor perceptions of changes to cultural ecosystem

services and heritage as a result of actions in Rural Regeneration plans can be monitored by employing ubiquitous technologies and community workshops. The development of the digital My Cult-Rural Toolkit helps building capacity within the

communities to monitor and evaluate the success of actions/projects designed to enhance cultural heritage values in the region in the future.

My Cult-Rural Toolkit offers three physical tools focused on three physical participatory research tools that use local and raw materials to co-create temporary installations allowing generate discussion between participants of the initiative. It also offers two digital tools in the form of applications which allows texts and images to be geo-referenced. The My Cult-Rural Toolkit has been designed and developed to assist and build capacity within local communities to assess the impact of locally driven actions. This guidance is based on the toolkit that is fully accessible online⁷⁹.

5.1. Physical tools

Participatory workshop methods emphasize local people's involvement in building knowledge and the understanding of the research area through collective enquiry, collaborative actions, and shared reflection. These tools are in the form of hands-on workshops with small groups of local participants. The collected evidence is mostly of qualitative character. The researcher can expect to obtain a deep, qualitative understanding of the participants' unique experiences. Training, as preparatory materials, have been developed for each tool.

Questions for workshops and apps customization will be designed to fit site action. Once participants have finished digging and scaping, the workshop facilitator will asks open-ended questions about their senses, which will have been heightened during the activities she has orchestrated. They then encourage group responses and individual responses as well as follow-up activity, during which they digitally record and maps the data and shares it back.

⁷⁹ Available here: <https://www.ruritage-ecosystem.eu/culttool>

5.1.1 Walking maps

Walking Maps is a participatory workshop organised around walking shedding light on the interaction between participants, and their embodied and mental reality, and the environment. Walking is here used both as a tool to facilitate an interactive approach to the surrounding, expanding beyond generalised description, and as a metaphor calling for discursive and narrative reflection on the shared questions. Participants are invited to take a walk around the chosen area and collect some materials, objects that caught their eye on the way. They are asked open questions at key intervals. The answers are recorded in relation to location and collected objects. Once the group has completed the walk, they display an exhibition containing the objects, participants' responses and the trace of their trail



Photographer: Andy Hughes (Ruritage, 2019g)

5.1.2 Object mapping

It works as an outdoor participatory workshop centred on reflective interaction between participants and their landscape. Participants are asked to bring an object related to the area and that means something to them. At the start of the workshop the participants are divided into four groups and invited to create a diagrammatic landscape map using local materials and a grid.



Photographer: Andy Hughes (Ruritage, 2019f)

On completion of the map, participants are asked to video each other discussing their object. The exercise finishes with the participants mapping their object and again discussing its importance and its location in the map. The exercise involves both participants and facilitators collecting

5.1.3 Mini landscape

Mini-Landscape method is a participatory deep workshopping activity that involves participants creating a mini-landscape in an outdoor setting. Participants are divided into groups of four or five and asked to explore the area and produce a mini-landscape in vivarium that represents the group's view of the area. As the tasks progresses facilitators ask open



Photographer: Andy Hughes (Ruritage, 2019e)

questions and discuss the process of construction. Towards the end of the task, participants answer these questions by writing only one or two words upon glass slides, and then placing the slides into their minilandscapes wherever they choose. Mini-landscapes and words are then documented (visually, and/or in transcription).

5.2 Digital tools

Participatory geo-spatial information management methods have the benefit of combining participatory research methods with geographic information systems (GIS) that allow mapping of the spatial distribution of cultural ecosystem services. Participants become expert in understanding and mapping their own experiences within the landscape. The two applications can both record individual, subjective experiences using survey methods, with geo-spatial information. This category of tools allows researchers and participants to co- examine the interpersonal and spatial distribution of the perceived benefits of CES

5.2.1 Rate My View



Photographer: Andy Hughes (Ruritage, 2019d)

Rate My View app that allows in-the-field data collection, combined with a server-based back end that allows real-time data analysis. The app is free to download and allows text and images to be collected and georeferenced using smartphones or tablets. It uses GPS technology to pinpoint the users location and also detects the direction the user is facing.

5.2.2 Landscape Connect

Landscape Connect app allows in-the-field user data collection, combined with a server-based back end that allows real-time data analysis by researchers and workshop facilitators. The application collects images and text linked to the geo-referenced location of the mobile user. Textual data is obtained through questionnaires presented to the mobile user. The researcher can create questionnaires of any degree of simplicity or complexity, using the main conventional survey question types. Collected data is uploaded to the server in real time allowing for facilitated workshops where results can be analysed, and used for discussions during the course of a workshop



Photographer: Andy Hughes (Ruritage, 2019h)

6. Heritage-led Rural Regeneration plan examples⁸⁰

To create a basis of reference, this section contains three illustrations of well executed cases of Rural regeneration plans. All of them were established within the framework of the RURITAGE project. Only one of them focused on the Landscape SIA as the main SIA of reference. However, the other two have implemented actions where landscape as a driver is key. All the below Regeneration plans have been compromised to an overview format. One example action will be displayed in the below version. The full version can be found in the RURITAGE deliverable 3.4 (Ruritage, 2020). Below is an overview of the Regeneration plans:

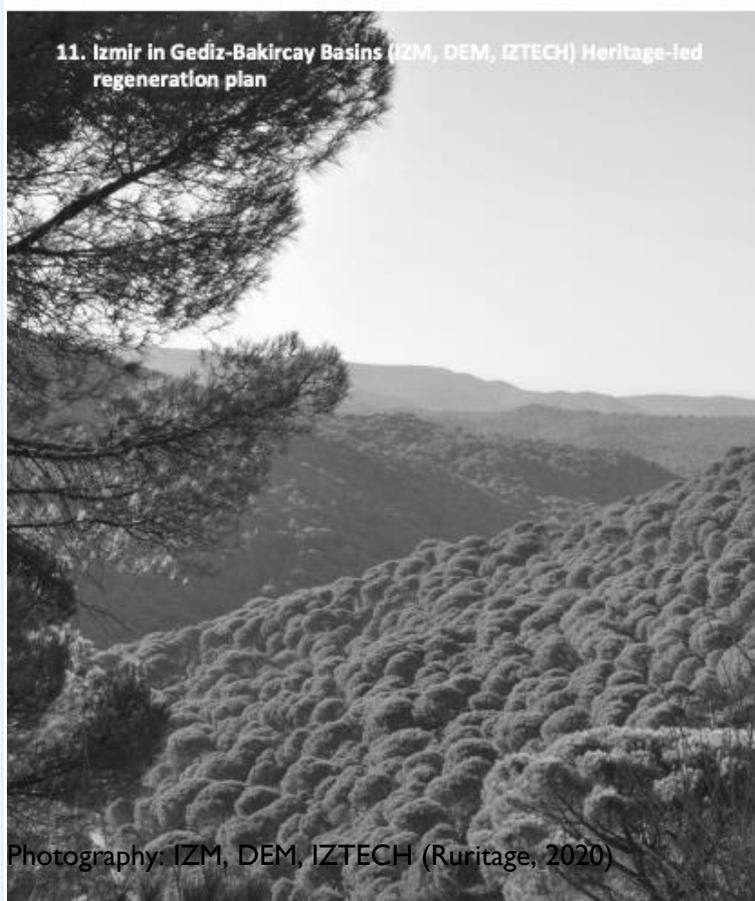
- 6.1. Heritage-led Regeneration plan: Landscape as a main driver in Turkey
- 6.2. Heritage-led Regeneration plan: Landscape as a co-driver in driver in Slovenia/Austria
- 6.3. Heritage-led Regeneration plan: Landscape as a co-driver in driver in Germany

⁸⁰ The full Heritage-led Rural Regeneration plans can be found in deliverable 3.4 (Ruritage, 2020)

6.1. Heritage-led Regeneration plan: Landscape as a main driver in Turkey

Heritage-led Regeneration plan in Izmir

Brief description: The Izmir Metropolitan Area, the Technical University of Izmir and DEM Energy developed their-heritage led regeneration plan working with the Integrated Landscape as their main reference. The plan includes a total of 9 actions; Landscape is directly addressed by 6 of them.



Location: Izmir, Turkey

Type of area: Region

Overall aim: The overall objective of this heritage-led regeneration plan is to create an integrated landscape management model for the case study area based on local cultural and natural resources. The developed model will work as an effective showcase for rural regeneration. The action plan tries to achieve the main objective focusing on the local assets of landscape, arts, food and handicrafts revealing tangible and intangible heritage of the community. Economic objectives are more focused

on local food and its relationship with tourism activities. Landscape consists of various CNH assets that will be considered as drivers for the rural regeneration of the area where social, cultural, economic, environmental, technic, and technological aspects are considered. Micro and macro scale actions of RURITAGE will generate a ground for policy and investment decision to go further. This action plan is developed to fulfil the general objective of ensuring the sustainability of the region's unique landscape qualities and improving the welfare and the quality of life of local people through natural and cultural heritage led strategies. Six main aims have been identified in the region: 1) Create new sources of income through natural and cultural heritage

development; 2) Improve partnership and collaboration among different stakeholders of the region for the integrated landscape management; 3) Increase the strong sense of belonging by raising awareness of the importance and sustainability of the cultural and natural assets for the region; 4) To foster the visibility and the value of local food production; 5) Prevent the extinction of the natural heritages and use them as driver for creating economic values; 6) To foster the visibility and the value of local food production.

Overall challenges: All the challenges proposed by the report are mainly connected to economy and livelihood of the citizens of the area. There is unemployment within the area due to the loss of harvest and agriculture in general not being very profitable in the country. Also, youth move to cities looking for employment opportunities. There is a challenge in passing on traditional crafts, arts, food to younger generations would lead to loss of cultural heritage. Since elderly population is higher in the region; access to innovation, emergence of new ideas or new ways of doing business is quite low. Also, there is no awareness about the distinctive heritage values of the region and the potential that can be used for economic development. There are some widely known cultural heritage sites, but they lack tourist attractions and offers. Therefore, the overnight stay rates are quite low. Five main challenges have been identified in the region: 1) Depopulation and ageing of the local population; 2) Lack of recognition of distinctive cultural and natural heritage of the region; 3) Lack of efforts and motivation to explore alternatives potential income sources; 4) No marketing and branding strategies for the products of the area (food, art, crafts); 5) High risk on extinctions of cultural and natural heritage assets (arts & crafts, natural resources).

Example of action: Building of a Geology Road map through Citizen science

Brief description of the action

This action will create a participatory map of tangible heritage by using “citizen science” as a participation tool in which local volunteers will be involved in data collection and analysis. The initial study will be carried out by international students and academics who are interested in geological science as a summer workshop for the participatory mapping of geological heritage in the region. The results of this workshop will be discussed with local citizens to be tailored and adopted by them.

Objective and target of the action

The main objective of this event is to create first draft of geological road map of the region is an important first step to attract geo-tourists in the area. It also aims to initiate efforts becoming a geopark. 1 summer school with around 15 international students in the field of geodesy and photogrammetry. 2 workshops in the RHH with local citizens and stakeholders – at least 30 - to tailor and validate the summer workshop results. 1 RURITAGE volunteering certificate to boost citizens participation and to make it certified and recognizable.

Specific activities

The action contains specific activities to illustrate the full process of the implementation of the action: 1) Development of the programme of the summer schools; 2) Identification of the trainers, experts, teachers; 3) Promotion and communication of the summer school/workshop through the university and the project communication channel; 4) Implementation of the summer school: Lecture sessions about the RURITAGE, project sites and the region Basic training on the scientific geological surveying methods Site survey of potential geo-trails Workshop sessions of making geology road maps in RURITAGE Izmir Coordination Centre - public discussion of the results of the summer workshop and selection of geo-trails; 5) Publication of material (maps, apps, to be decided); 6) Creating a “RURITAGE volunteering certificate” for the RURITAGE project

Type of Stakeholders involved

Besides project partners, an additional university will organise the international student workshop. Tourism Development Cooperative will provide basic logistics such as food, shelter, and local cultural activities. Chamber of Geology Engineers will provide technical assistance for site surveying.

6.2 Heritage-led Regeneration plan: Landscape as a co-driver in driver in Slovenia/Austria

Heritage-led Regeneration plan in Karavanke/Karawanken

Brief description: In 2015 Karavanke/Karawanken was established as an UNESCO Global Geopark through a bottom-up process involving all relevant local and regional



Photography: Karavanke/Karawanken (Ruritage, 2020)

stakeholders and authorities in the area: landowners, community groups, tourism providers, and local organizations. By raising awareness of the importance of the area's geological heritage in history and society today, UNESCO Global Geoparks give local people a sense of pride in their region and strengthen their identification with the area. This aims to empower local communities and give them the opportunity to develop cohesive partnerships with the common goal of promoting the area's significant geological processes, features, periods of time, historical themes linked to geology, or outstanding geological beauty as well as other capitals present in the area. When Karavanke/Karawanken is referred to as a geopark, the plan does not talk just about the geographical areas, rich in geological, other natural and cultural heritage, but also about people, living in the geopark, local communities, in the case of the Karavanke/Karawanken UNESCO Global Geopark, local inhabitants of 14 municipalities.

Location: Geopark Karavanke/ Karawanken, Slovenia/ Austria

Type of area: Crossborder Geopark

Overall aim: The main aim of the action plan is to support the rediscovering of the area in all its aspects, through the development of our natural and cultural heritage resources, considering the holistic Geopark characteristics. The geological, natural, and cultural heritage is an essential element of the territory, that should be more valorised. The Regeneration plan contains five actions that have been developed and will be implemented together with our partners and relevant local stakeholders, aiming at generating positive effects thus fostering a sustainable development of our cross-border region. The following specific objectives identified are written to ensure a strong commitment among our members: 1) Better conservation of geological and natural resources and the cultural and natural heritage; 2) Raising awareness, information and education about the geological, other natural and cultural heritage of the Geopark Karavanke/Karawanken; 3) Fostering new economic opportunities for the region based on geo tourism; 4) General cross-border cooperation.

Overall challenges: Five main challenges have been identified in the area: 1) High rate of depopulation and unemployment; 2) Lack of resources dedicated to maintaining the heritage; 3) Lack of visibility of and sense of belonging for the area; 4) Lack of cross border cooperation between inhabitants; 5) Lack of overview of what the area has to offer.

Example of strategies/actions:

Example: The digital use of the Karavanke/Karawanken Geopark

Brief description of the action

In the frame of the action the park will create a digital solution (mobile application), presenting the Karavanke/Karawanken pilgrimage route and the entire Geopark and informing users about events, accommodation possibilities, touristic attractions, restaurants, etc. so it will be used by tourists visiting our Geopark for different reasons and interests. The digital solution will also be useful for local inhabitants to better know what is going on in the area and to generate contents thus making the digital solution a living tool.

Objective and target of the action

The objective of this action is to make the area more accessible for tourists/pilgrims and for local people, by gathering all the events and happenings from the municipalities in the cross-border region. Local offers and products, such as food and restaurants as well as all the various tourist sites will become more accessible.

The target audiences of the action are Pilgrims and tourists. Qualitative target: better accessibility to local products such as food and to local sites will be more approachable.

Specific activities

The action contains specific activities to illustrate the full process of the implementation of the action: 1) Co-creation with the stakeholder of the first draft of mobile application; 2) Open an invitation to submit offers for the creation of the Geopark Karavanke/Karawanken mobile application; 3) Obtaining offers for the app; 4) Evaluation of the received offers; 5) Select the most appropriate company. This will include signing a contract with the company for the creation of the Geopark Karavanke/Karawanken mobile application; 6) Developing the mobile application together with the chosen company; 7) Presentation and promotion of the mobile application (FB, web-page, pressrelease with the presentation of the mobile application).

Stakeholders involved

A local tourism agency will support with data collection concerning events, touristic offers, accommodation providers, restaurants. At the same time, a local development agency will support with data collection concerning events, touristic offers, accommodation providers, restaurants. Lastly, an active stakeholder will support the creation of the first draft and content of the mobile application, co-working with external expert, maintaining a mobile application.

6.3 Heritage-led Regeneration plan: Landscape as a co-driver in driver in Germany

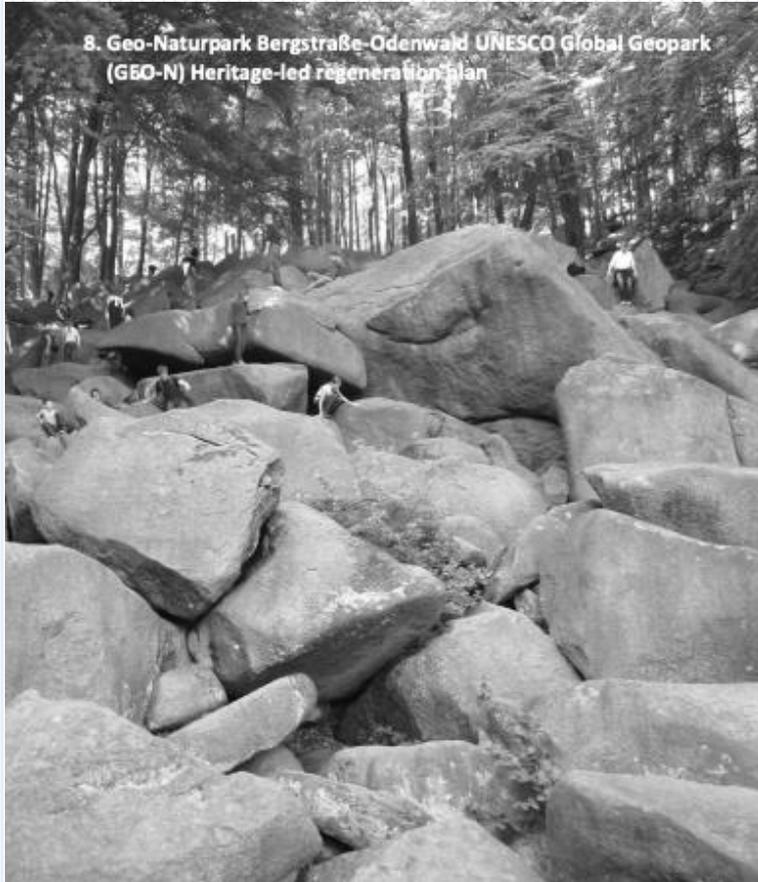
Heritage-led Regeneration plan in Geo-Naturpark Bergstraße-Odenwald

Brief description: The Geo-Naturpark Bergstraße-Odenwald (Geo-N) is in southwest Germany, covering the states of Hesse, Bavaria and Baden-Württemberg which includes 102 municipalities. Within Bergstraße-Odenwald you find representation of various geological, natural and human history, this includes three UNESCO World Heritage Sites. The Geo-N offers a more than 500 million years old history of our planet, a diverse landscape, from agricultural land to deep forests, and a rich cultural history. Being as central situated makes Bergstraße-Odenwald

recreation accessible for millions of people. For now, the geopark offers a wider range of education, tours and fieldtrips in cooperation with various stakeholder.

Location: Geo-Naturpark Bergstraße-Odenwald (Geo-N), Germany

Type of area: Geo-Park



Photography: Geo-N (Ruritage, 2020)

Overall aim: This Regeneration Plan is intended to support the regeneration of the area through the development of our natural and cultural heritage resources and considering the holistic Geopark approach. In addition, the idea is supporting a sustainable integration of migrants into the community. Working according the bottom-up approach, integrating the local communities with participatory processes, a wide range of options to get into contact with the local heritage is key to strengthen the mutual understanding between people of different

nations. The integration of vulnerable groups like migrants or other minorities is a task, which can support the social, economic, and ecological development of the territory. The plan defines a total of nine specific objectives.

Overall challenges: During the migration crisis of 2015 a lot of people arrived in Germany. In 2019, most of these migrants are following successful governmental integration programme. However, there are those that live separated from the society in border areas of the communities. It is therefore essential to build bridges and create opportunities for migrants to join the Geo-N's offers to create an environment which fit into their needs for advanced integration. The situation has changed and the migrants are in an integration phase, which requires a more tailored support, which is foreseen in the plan consider related to our challenges, objectives and actions. As a consequence, the actions will focus on the invitation of migrants and inhabitants to newly developed approaches in cooperation with partners and

stakeholders, based on experiences and capacities as UNESCO Global Geopark. The Geopark will support the process of integration by offering a range of actions, where migrants and inhabitants learn more about the local CNH, regional identity, nature activities and language. Five main challenges have been identified in the region: 1) There is a clear shortage of migrants in outdoor activities due to segregation; 2) Language skills of migrants are not sufficient to engage in events expressing and communicating the CNH; 3) Our Geo-N landscape is vulnerable and needs intense care from all groups of society including migrants to increase awareness of the value of our CNH; 4) Lack of opportunities for integrating migrants through creative and artistic projects in nature that contribute also to mental and physical health.

Example of strategies/actions:

<p>Example: Increasing the awareness of cultural and natural heritage by cultural landscape interpretation</p>
<p>Brief description of the action</p>
<p>Besides the ranger programmes, the Geo-N network comprises many voluntary groups engaged with documentation, preservation and teaching cultural and natural heritage at the local base. The described action involves advanced trainings for rangers, the geopark-on-site teams, volunteers as well as the development of local guided tours for visitors, residents and migrants based on the concept of cultural landscape interpretation. These activities will be complemented by “hands-on” workshops dealing with special aspects of the historical/cultural landscape as beekeeping, a photographic landscape expedition and experimental historical mining (e. g. charcoal burning and building a historic smeltery).</p>
<p>Objective and target of the action</p>
<p>This action focuses on strengthening the awareness that the local landscape is vulnerable in its cultural functions. Besides the touristic efforts, Geo-N now tries to implement a broader understanding of landscape evolution to increase this knowledge about the direct living environment for both residents and new inhabitants. This encourages more people to take care and enjoy the cultural and natural heritage of the region at the local base according to the motto “Only what you know let you feel home, only what you understand you will appreciate, only what you enjoy together will connect you with others and only if you learn to know each other, you lose fears.”</p>

Specific activities

The action contains specific activities to illustrate the full process of the implementation of the action: 1) Discuss almost unknown but specific phenomena and themes of landscape environment (which are particularly threatened and what should be done to minimize the threat?) with geopark-on-site teams; 2) Detailed planning of guided ranger tours and hands-on actions for each threatened CNH element, bringing together Geo-N, rangers, the abovementioned geopark-onsite guides and volunteers; 3) Public relation work advertising the events; 4) Realize "heritage cycle events": I) Photographic landscape expedition; II) Charcoal burning; III) Building and driving a historical bloomery furnace (iron smeltery); IV) Beekeeping-workshops; 5) Plan & realize additional and further heritage cycle events based on the existing activities and specific hands-on activities of the park rangers; 6) Plan and realize a post-event advanced training for rangers, Geopark-on-site teams and other multipliers on methods, realization and results of the projects.

Stakeholders involved

1) Park Rangers: The rangers get involved in the action as regional experts local CNH. This will facilitate the choice of abovementioned specific landscape phenomena to be interpreted. 2) Geopark on site-guides: These two on site-guide teams provide voluntary support organizing the specific guided tours and "hands-on" workshops. One of the team involves beekeepers, who will carry out the beekeeping-workshop with their own expertise. 3) AG Altbergbau Odenwald (Historical Mining Association): This voluntary group carries out historical mining research and cultural landscape mapping in cooperation with the and therefore will act as multiplier especially for cultural heritage: This information centre will provide environment and logistic support and knowledge for the planned beekeeping-workshop. Local municipality: To support the experimental charcoal burning, which will be performed by the voluntary group.

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ICOMOS – POLAND

Historical Landscapes' Transformation to Modern Needs

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I. Introduction

The cultural landscape concept significantly emphasises the constant evolution of the landscape over time and the connectivity between people, places and heritage artefacts. It recognises that the present landscape is the product of long-term and complex relationships between people and the environment. Regardless of the region, some historical activity will have taken place. The concept of landscape in itself is already highly cultural, although the term 'cultural' has been added to express the human interaction with the environment and the presence of tangible and intangible cultural values within the landscape. This cultural landscape, besides protection and conservation per se, should be used consistently for modern functions, and therefore properly managed and continuously composed for future generations.

Cultural landscapes defined by human geographers are also regarded as an expression of landscape change, as individual regions, and as the result of the interaction of humans with their physical and material environment. Cultural landscapes are established by people as they modify and use the natural landscapes. Due to the current increasing pressure exerted by man on various types of cultural landscapes, it is not possible to decide on appropriate land use without knowing the history of the mechanisms operating there. Therefore, understanding individual parts separately is not enough, because what is true for a certain element does not apply to the whole (countryside, landscape) and vice versa.

Cultural heritage values may be complex and multi-layered, based on coherence between natural, historical, geological, ecological, human, tangible and intangible heritage values. The above-mentioned elements and their interconnection have an impact on the further use and transformation of cultural landscapes. They form the basis of landscape management plans and strategies developed taking into account the individual characteristics of each cultural landscape.

The aim of this chapter is to present and discuss issues related to the transformation of cultural landscapes to modern needs.

The materials developed are mainly based on the achievements of the National Heritage Board of Poland, international materials by ICOMOS, UNESCO, ISCCL, IUCN, as well as scientific books and papers.

2. Regulations and conventions regarding the use of cultural landscape

The Venice Charter of 1964, one of the basic doctrinal documents in monument conservation, did not devote much attention to presentation of monuments. However, it is noticed that “every means must be taken to facilitate the understanding of the monument and to reveal it without ever distorting its meaning”. In 1972, the **UNESCO Recommendation concerning the Protection of the World Cultural and Natural Heritage was created**. It was stated in the document that a country where given heritage is located should endeavour proper presentation of the heritage to the society. In order to obtain best effects of such presentation, heritage should function in the life of the community. The function in such place should be selected by proper experts, equipped with relevant technical means. The same session of UNESCO General Conference adopted one more document: **Recommendation concerning the Protection of World Cultural and Natural Heritage At National Level**. The necessity of effective presentation of heritage as one of the most important elements of a regional plan of site development was emphasised in the document. Presentation should show people the values of the protected heritage and the local community should be involved in such presentation.

The Council of Europe adopted in 1986 **Recommendation on Urban Open Space**. Even though the document did not focus on historic sites, attention was drawn for the first time to the necessity of ensuring attractiveness for a given site as a factor enabling its preservation. Attractiveness may be obtained not only via proper selection of materials applied in the design concept, but also via application of various functions for a given site.

In 2003, upon the initiative of UNESCO, **Convention for the Safeguarding of the Intangible Cultural Heritage** was created. According to the approved document, one of the manners of safeguarding such heritage is conduct of studies on its identification.

The Leipzig Charter on Sustainable European Cities (2007). Charter is a document that states the European Union, which contains a common and consistent principles for sustainable urban development. Historic buildings, public spaces and their urban value must necessarily be retained. It is assumed the creation or development of sustainable, accessible and affordable transportation. Integrated urban

development and high self-awareness of their residents support the social and intercultural dialogue. Its solutions are part of August in the mainstream of New Urbanism. Promotes a comprehensive revitalization of city centers and increasing their attractiveness.

The ICOMOS Recommendation on the historic urban landscape – 2011.

The historic urban landscape is the urban area understood as a result of diffusion layers of cultural and natural resources, going beyond the concept of "historic center" or "complex" to include a broader urban context and its geographical location. This wider context includes, in particular topography of the site, geomorphology, hydrology and natural features of the built environment, both historical and contemporary, its infrastructure above and below ground, its open spaces and gardens, and land used. The historic urban landscape in this context is to preserve the quality of the human environment, improve the productive and sustainable use of urban spaces, while recognizing the dynamic nature, and promote social and functional diversity. Approaches to the historic urban landscape should learn from the traditions and communities, respecting the national and international community. In order to promote the protection of natural and cultural heritage, the emphasis should be placed on the integration of historic zone management strategies and planning in local planning processes of cities for which the application landscape approach would help maintain urban identity. The principle of sustainable development provides for the preservation of existing resources - active protection of urban heritage and its sustainable management is a condition of healthy development. Its solutions are part of the mainstream of the **New Urbanism**.

The ICOMOS Declaration on Heritage and Landscape as Human Values (2014),

indicated the problem of maintaining identity of a community as one of the most important subjects of the modern discussion on paradigms of cultural heritage protection. In line with recommendations of this document, the feeling of a community's identity may be intensified by planning proper interaction and social communication, which may help people understand the core values of the protected cultural heritage. However, this requires a number of changes intended to deepen mutual understanding and tolerance among various social groups, local community and tourists visiting such site. In recommendations the feeling of a **community's identity** may be intensified by planning proper interaction and social communication, which may help people understand the core values of the protected cultural heritage.

However, this requires a number of changes intended to deepen mutual understanding and tolerance among various social groups, local community and tourists visiting such site. Direct contacts between tourists and heirs of heritage of the past should take into account restrictions related to authentic customs and places of worship of a given community.⁸¹

The ICOMOS-IFLA Principles concerning rural landscapes as heritage (2017) - this document encourages deep reflection and offers guidance on the ethics, culture, environmental, and sustainable transformation of rural landscape systems, at all scales, and from international to local administrative levels.

Rural landscape as heritage: Refers to the tangible and intangible heritage of rural areas. Rural landscape as heritage encompasses physical attributes – the productive land itself, morphology, water, infrastructure, vegetation, settlements, rural buildings and centers, vernacular architecture, transport, and trade networks, etc. – as well as wider physical, cultural, and environmental linkages and settings. Rural landscape as heritage also includes associated cultural knowledge, traditions, practices, expressions of local human communities' identity and belonging, and the cultural values and meanings attributed to those landscapes by past and contemporary people and communities. Rural landscapes as heritage encompass technical, scientific, and practical knowledge, related to human-nature relationships. There is a great diversity of rural landscapes around the world that represent cultures and cultural traditions. They provide multiple economic and social benefits, multi-functionality, cultural support and ecosystem services for human societies.

The ICOMOS-IFLA Document on historic urban public parks (2017) - the importance of integrating public parks in town planning schemes was acknowledged in the 19th and the early 20th centuries, so many of them date from that era, but some urban parks may be older or younger.

Definitions for concepts such as promenade, boulevard, avenue, tree-lined street, canal, etc. can be added as footnotes to the document by authorities and park management in their respective countries as necessary:

⁸¹ Sroczyńska J., 2015, Modern presentation of cultural heritage – a review of selected documents, in: Technical Journal – Architecture 6a -2015, p.183-189

- The concept 'public park' rests on the principle of openness and accessibility for all people to visit and enjoy. The concept is not limited or defined by size.
- Public parks are typically in public ownership and represent 'common wealth'. They may be owned by one or more public bodies or public foundations that are responsible for their oversight, knowledgeable care, and stewardship.
- The concept of 'park' is sometimes used synonymously with words such as garden, square, or similar expressions. (Conversely, the word 'park' can denote 'grounds' in some languages.) Fundamental to the identity of historic urban parks is their composition and dependency on such elements as vegetation, architectural elements, water features, paths, or topography. These elements contribute to their character, seasonal interest, shade, and spatial and visual identity.
- Historic promenades, boulevards, avenues, and tree-lined streets are not public parks, but constitute a special category of public space. It is important that adequate care be taken to preserve their particular characteristics.
- In many cases, historic urban public parks may be located along, or linked by, boulevards or tree-lined streets (see the previous passage). They form green arteries that can connect public parks with other public spaces. They and their component parts must be preserved, regardless of the fact that some parts may have been created at different times.
- Historic urban public parks often accrue a range of values, including social and intangible values to local or wider communities; aesthetic values for their design or character; horticultural and ecological values; and civic value as places where public protests or major gatherings, such as celebrations, etc., have occurred. Due to their value to communities, these values, meanings, and functions should be explained, celebrated, and safeguarded. They often form the core of why public parks continue to matter to people.

In addition to these international Conventions a series of Recommendations have been adopted of which the following three are relevant to cultural landscapes:

- Recommendation concerning the Safeguarding and Contemporary Role of Historic Areas (1976): There are discussions under way on a revised or new Recommendation following the Vienna Conference on “World Heritage and Contemporary Architecture – Managing the Historic Urban Landscape”, (2005). Historic Gardens, *The Florence Charter*, 1982: http://www.international.icomos.org/charters/gardens_e.htm.
- Recommendation concerning the Protection, at National Level, of the Cultural and Natural Heritage (1972): This Recommendation was prepared in parallel to the World Heritage Convention (1972) to enhance conservation at the national level.
- Recommendation concerning the Safeguarding of Beauty and Character of Landscapes and Sites (1962): This was one of the earliest recommendations on landscapes and covered “the preservation and, where possible, the restoration of the aspect of natural, rural and urban landscapes and sites, whether natural or man-made, which have a cultural or aesthetic interest or form typical natural surroundings”. (Article I) It was envisaged to supplement natural heritage protection measures.

A number of global declarations may also be relevant, such as the Nachitoches (2004) and the Xi’an Declaration of the ICOMOS General Assembly (2005) which deal specifically with heritage landscapes and the setting of sites.

International Conventions related to biodiversity and natural heritage:

There are five key Conventions in the field of biodiversity and natural heritage: Ramsar Convention on Wetlands (1971) World Heritage Convention (1972) Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES, 1973) Convention on the Conservation of Migratory Species of Wild Animals (CMS, or the Bonn Convention, 1979) Convention on Biological Diversity (CBD, 1992) In addition to these, the Treaty on Plant Genetic Resources for Food and Agriculture (2001) is specifically relevant for World Heritage Cultural Landscapes.

While each convention stands on its own with its own specific objectives, procedures and commitments, there are linkages between the issues covered and complementarities in monitoring, reporting and implementation processes. A joint

liaison group discusses cooperation matters. With the target of achieving by 2010 a significant reduction of the current rate of biodiversity loss, set by the Strategic Plan of the Convention on Biological Diversity, and later endorsed by the World Summit on Sustainable Development and incorporated into the Millennium Development Goals, the need to promote cooperation among the biodiversity-related conventions while reducing duplication of effort has become increasingly relevant.

Agenda 21. After the 1992 Earth Summit in Rio and the widespread dissemination of Agenda 21, the action framework which arose out of the United Nations Conference on Environment and Development, landscape diversity was recognized as a resource being impacted on by economic, social and cultural globalization processes and technological advances which have a homogenizing effect. As a result of increasing international awareness of global linkages many countries are currently working on programmes that advance landscape protection while developing sustainable use of this resource. Sustainability means using natural and cultural resources so that their capacity to meet human needs into the future is not diminished. The concept evolved in relation to perceived threats to natural resources. Those involved in cultural heritage management have transferred relevant concepts to the survival of cultural resources, the fabric of monuments, sites and landscapes.

Sustainable use as defined in the 1992 Convention on Biological Diversity shows that the concept is meaningful only in relation to entire ecosystems, not individual species. This also applies to cultural landscapes which require an encompassing environmental approach.

The European Landscape Convention (2000). The European Landscape Convention was adopted in Florence (Italy) in October 2000 by the Council of Europe. It recognizes that landscape is an essential feature of human surroundings, that it contributes to the formation of local cultures and that it is a basic component of the European natural and cultural heritage, contributing to human wellbeing and consolidation of the European identity. The Convention aims to encourage public authorities to adopt policies and measures at local, regional, national and international level for protecting, managing and planning landscapes throughout Europe. It covers all landscapes, both outstanding and ordinary, rural, peri-urban and urban, that determine the quality of people's living environment. The text provides for a flexible approach to landscapes whose specific features call for various types of action,

ranging from strict conservation through protection, management and improvement to the deliberate creation of new landscapes.

The Convention proposes legal and financial measures at the national and international levels, aimed at shaping “landscape policies” and promoting interaction between local and central authorities as well as transfrontier cooperation in protecting landscapes. It sets out a range of different solutions which States can apply, according to their specific needs. The text also provides for a Council of Europe Landscape award, to be given to local or regional authorities or an NGO which introduced exemplary and long-lasting policies or measures to protect, manage and plan landscapes.

The Convention notes that developments in agriculture, forestry, industrial and mineral production techniques and in town-planning, transport, infrastructure, tourism and recreation practices and, at a more general level, changes in the world economy have the effect of continually transforming landscapes. It also acknowledges that the public expect to play an active part in the development of landscapes and to enjoy high quality landscapes; and that landscape is a key element of individual and social wellbeing and that its conservation entails rights and responsibilities for everyone.⁸²

3. Impacts of development on cultural landscapes

There exist a range of features that influence the adaptation and use of cultural landscapes. Many countries have separate legal provisions in the field of spatial planning, where documentation is required assessing the impact of any investments and new facilities on the environment and landscape. In order to find an acceptable variant and an optimal solution, it is necessary to perform value, vulnerability and impact assessments. Apart from the development of the project itself, alternatives taking into consideration the development of cultural values should be discussed at an early stage of the investment.

Therefore, this should be determined by answering the following questions as to whether the project:

- dominates, strengthens or adapts to existing cultural values.
- increases or diminishes the possibilities to develop cultural values.

⁸² Mitchell, N., Rossler M., Tricaud P. (ed.) (2009). *World Heritage Cultural Landscapes. A Handbook for Conservation and Management*, World Heritage Papers 26: UNESCO World Heritage Center, Paris. PDF online.

- improves or harms the conditions for those working or living there to use the landscape.
- increases or diminishes the possibilities to experience the cultural heritage.

Also,

- what are the direct or indirect effects and what will they be over time?
- what cannot be measured, what factors are uncertain?

Furthermore, in terms of assessment, a range of information should be determined covering the following issues:

- Which cultural values or environments are strategically important in the region and in the landscape?
- Which actions, management strategies are realistic?
- How can goals and strategies be monitored (follow-up)?
- Which will the consequences be for the environment, the people, and society?
- What can be measured in economic, or other, terms?
- What can not be measured?
- Are any cultural values influenced? Directly? Indirectly? Threatened?
- Are alternative solutions needed?
- Are some factors uncertain?
- Can the development be used to strengthen the heritage value?
- Conserving the value? Developing the value?
- Can the development use the heritage value as a resource?

Infrastructure necessary to raise standards of living (e.g. power lines, telecommunication towers, pipelines, roads, etc.) or to enable the commercial development of these regions is very often introduced into World Heritage landscapes areas. These are usually investments that interfere with the landscape the most and their planning should be carried out within the scope of long-term action based on a management plan

4. Threats to the integrity cultural landscapes

In general, various threats to the integrity cultural landscapes may come from two directions: internally or externally. They may be natural events (e.g., weather phenomena or anthropogenic actions such as military conflicts or diseases), or they can derive from the impact of management processes, such as from new developments in the landscape, provision of utility services, adaptation of historic structures for new uses (and new functions), activities in a buffer zone (if present) with downstream effects, visitor pressures and associated infrastructure or simply sheer ignorance of the consequences of actions. Therefore, developing a shared landscape vision must be based on a brief statement describing the desired state of ideal condition for the cultural landscape in a specified future time.

Basically, in the Operational Guidelines for the Implementation of the World Heritage Convention, the nomination of properties requires a description of the following factors affecting the site:

- Development pressures,
- Environmental pressures,
- Natural disasters and preparedness,
- Visitor / tourism pressures,
- Number of inhabitants within site, buffer zone,
- Others (site specific).

Factors affecting cultural landscapes in detail:

Many cultural landscapes are under constant or potential threat from a variety of factors, including subjective, physical, economic and social factors. They are defined below using the Caribbean region as an example⁸³:

⁸³ The Caribbean Capacity Building Programme (CCBP) 2004. *Module 4: Management of Cultural Landscapes*, drafted by Isabel Rigol. PDF online, p. 37-38.

- **Subjective threads:**

- ignorance and a lack of awareness or understanding of what heritage means, or misinformation leading to a constricted or mistaken approach to the cultural landscape,
- lack of current legislation and strategies (at the local and supra-local level), lack of territorial classification of landscapes, and a shortage of specialised training and popularisation,
- breach of protection rules by investors.
- erroneous and aggressive concepts of protection and conservation that do not take into account the needs of communities and workplaces, which may result in the loss and transformation of the basic landscape elements under protection.

- **Physical threads:**

- geographic factors: location and geographic situation (e.g. small islands), genetic landscape sensitivity, geological structure (e.g. volcanic islands), limited resources along with the natural disasters to which they are exposed (e.g. volcanic eruptions, hurricanes, tsunamis and fires as well as materials and techniques for extinguishing them)
- climatic factors: climatic and environmental changes in terms of salinity, humidity, temperature changes, plagues of insects, infections of fungi, inadequate growth of the vegetation.
- human activity: catastrophic consequences may also follow soil erosion, deforestation, pollution of the air, waters, rivers and coastal regions, and the abusive use of herbicides can also be devastating. They can result in a decline or loss of biodiversity, which is one of the basic conservation values, affecting the welfare of the inhabitants.
- land use: changes in agriculture negatively affects the cultural landscape via the disappearance of historical crops and the traditional method of cultivation in favour of monocultures, liquidation of wet lands, flooding and watering crops, intensifying the use of pesticides

- tourism and human activity: the unplanned and unregulated development of tourism, commerce, industry, mining, transport and communication, and major infrastructure works are very destructive factors. In terms of tourism, the harm it brings may be summarised as follows: *‘an excess of visitors, big public displays, concerts, exhibitions, fairs, sports events are activities that have to be planned carefully to avoid causing deterioration. The behaviour of visitors can be decisive in these cases, bearing in mind the physical erosion that they cause, the waste and the sight and sound contamination.’*
 - criminal activity: vandalism, theft, negligence, accidents or other violent physical impact like armed conflict, looting and illicit trafficking, can erode cultural value on a scale difficult to estimate.
- **Economic factors:**
 - lack of funds in poor countries, which translates into low investment,
 - inadequate allocation of funds, especially in the case of tourism income, which is generally not re-invested in the preservation of cultural heritage,
 - speculation in land and real estate prices, influencing ownership changes, areas being fenced off, modified function and forms of sites,
 - high land value, uncontrolled investment and site deterioration,
 - market fluctuations and changing business interests,
 - subsidies on products intended for export causing sudden changes in cultivation,
 - reducing rural areas to an economic and productive role without preserving their traditional character and harmonious cultural landscape.
 - **Social factors:**
 - poor communities and deteriorating living conditions,
 - lack of opportunities to study,

- no access to basic services, such as electricity and energy, water and sanitation, refuse and waste removal,
- unemployment and an exodus of the original, mainly younger, inhabitants and an ageing population,
- lack of knowledge flow and the disappearance of traditional professions
- loss of priceless and intangible heritage passed down from generation to generation: music, dances, fiestas, crafts, costumes, instruments, oral traditions, food and drink, and rich ancestral customs,
- mass, uncontrolled tourism displacing local culture
- migration and displacement due to armed or ethnic conflicts,
- globalisation and its impact on local culture.
- people returning to rural areas with mistaken ideas of how these areas should function.
- intolerance, loss of spiritual values and abandonment of sacred places.

Lack of action aimed at effective management may cause irreversible deterioration, or the complete disappearance, of protected landscape values

5. The loss of biodiversity in cultural landscape

Protected areas are essential for biodiversity and sustainable development, but they can also be a potential hindrance to development. The conservation of cultural landscapes is not only about safeguarding something from the past. The needs of the community today must also be taken care of and the culturally and environmentally sustainable development of this historic territory must be planned for the future. Many cultural landscapes currently play a relevant role for nature conservation and may contain habitats valuable to the conservation of biodiversity.

Their importance is also underlined by the fact that even some designed landscapes are now considered important gene pools⁸⁴. As of the end of 2020 the World

⁸⁴ Mitchell, N., Rossler M., Tricaud P. (ed.), *World Heritage Cultural Landscapes. A Handbook for Conservation and Management*, World Heritage Papers 26 (2009): UNESCO World Heritage Center, Paris. PDF online.

Heritage List contained 114 properties defined as cultural landscapes with 5 transboundary properties⁸⁵.

The World Heritage Committee in 1992 defined three categories of cultural landscapes related with “*combined works of nature and man*”, where the level of biodiversity is diversified:

- clearly defined landscapes designed and created intentional by humans,
- organically evolved landscapes,
- associative cultural landscapes.

Many of the sites in the first category are excellent examples of historic, extensive parks and gardens associated with residences or ensembles, where biodiversity may have been purposefully controlled for aesthetic reasons by the gardeners (Versailles in France, Fig. 1). Similar places of special importance are botanical gardens (e.g. The Royal Botanic Gardens, Kew, U.K or Singapore Botanic Gardens). In their case, loss of biodiversity is controlled within the botanical collections⁸⁶. Development for new functions may not only be very visible in the landscape, but also spatially limited to selected locations due to the existing plant compositions, small garden architecture or the existing system of communication.

The second category highlights the long-term evolution of social needs in conjunction with the natural environment, either as a relict landscape whose distinguishing features are still visible in the landscape, or as a continuing landscape that plays an active role in contemporary society (traditional rural landscapes). Examples of such cultural landscapes in which the loss of biodiversity can cause major harm include the Rice Terraces of the Philippine Cordilleras, the Archaeological Landscape of the First Coffee Plantations in the South-East of Cuba or the Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato in Italy (fig. 2).

⁸⁵ <https://whc.unesco.org/en/culturallandscape> [Accessed 26.06.2021]

⁸⁶ Samuels, K.L. (2017). *Biodiversity in World Heritage Cultural Landscapes: Possibilities and Problems for Communicating Climate Change and Mobilizing Mitigation*. *Cult. Agric. Food Environ*, 39: 116-126.



Fig. 1. The Palace and Park of Versailles (photo: Łukasz Pardela).



Fig. 2. The vineyard landscape of Nizza Monferrato, Italy (photo: Paola Gullino).

The third category of associative cultural landscapes addresses the intangible (virtue of powerful religious or artistic elements) elements of cultural landscapes. In this case the natural elements are what counts, rather than evidence of material cultural, which may be insignificant or even absent. Examples of such landscapes include the ‘Cultural Landscape and Archaeological Remains of the Bamiyan Valley’ in Afghanistan (currently on the List of World Heritage in Danger) ‘Val d’Orcia’ in Italy or ‘Pimachiowin Aki’ in Canada.

Agriculture and rural landscapes

Agriculture is vital to rural landscapes and agrobiodiversity is crucial for traditional agroecosystems. All substantial changes, whether intentional or not, lead to an inexorable of the identity and spirit of a place (*genius loci*). ‘*The presence of traditional crops and local products, the permanence of historical land-uses and agricultural practices, and the presence of architectures related to agricultural activity, are considered by UNESCO to be the most important markers of integrity*’⁸⁷. There is no doubt that for places with cultural and spiritual values what is relevant is not only the protection of ecological values, but also the maintenance of biodiversity values such as agro-forest systems, food, medicinal plants, whereas when it comes to land/territory sites, the long-term sustainable system must be adapted to actual living conditions⁸⁸. A good example of this connection is the cultivation of traditional types of vines and preservation of the traditional Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato in Italy heritage site (fig. 3).

⁸⁷ Gullino, P., Larcher, F. (2013). *Integrity in UNESCO World Heritage Sites. A comparative study for rural landscapes*. Journal of Cultural Heritage 14, 389–395.

⁸⁸ Rössler, M., Lin, R.CH. (2018). *Cultural Landscape in World Heritage Conservation and Cultural Landscape Conservation Challenges in Asia*. Built Heritage 2, 3–26.



Fig. 3. The vineyard landscape of Calosso, Italy (photo: Paola Gullino).

Cultural landscapes often reflect specific techniques for the sustainable use of land. They take into account the characteristic topography, land cover, as well as spiritual aspects that constitute a relationship with nature. Good examples of this are the indigenous peoples of Sierra Nevada de Santa Marta, who believe *‘that all native food plants have their “fathers” and “mothers”, and that crop fertility has to be insured by offerings to these spiritual beings’*. According to their beliefs, different soil types such as clays or humus, have their own ritual names. Moreover, there are also categories of rains, winds and lagoons, along with the cardinal points to which they are associated. *‘These offerings are real evidence of indigenous knowledge, as ritual payment for the use of a particular species of tree to build a bridge consists of clearing and feeding sacred food to saplings of the same species dispersed in the forest, favouring their survival’*.

Rural landscapes are dynamic, continuously and constantly subjected to the pressure of external and internal factors resulting in transformations. Threats may include, for example, changes in land use, resulting from shifting socio-economic conditions, modifications in the living landscape quality, e.g. introducing fresh anthropic elements such as new buildings mainly linked to rural/industrial needs and to renewable energies, and this plays an important role in determining the landscape’s visual quality.

Among the documentation referring to traditional rural landscapes is above all the FAO (Food and Agriculture Organization) programme on GIAHS (Globally Important Agricultural Heritage Systems, Johannesburg 2002). The GIAHS programme aims to *‘identify, support and safeguard agricultural systems that sustain and conserve biodiversity*

and genetic resources for food and agriculture, rural livelihoods, knowledge systems, cultures and remarkable landscapes'. In turn, the issue of biocultural diversity was the focus of the Joint UNESCO – CBD Convention of Biological Diversity Program between biological and cultural diversity and the related Florence Declaration on the Links Between Biological and Cultural Diversity (2014).

The development and use of rural landscapes for contemporary purposes can be implemented using modern techniques of sustainable land use. It can be used to maintain and enhance the natural values of the landscape. The continued existence of traditional forms of land use supports biodiversity worldwide. Therefore, maintaining the functioning of traditional cultural landscapes is helpful in preserving biodiversity. So, it is necessary to counteract the lack of continuity in human intervention (the abandonment of the fields). Likewise, mitigation measures should be taken against the uncontrolled installation of industrial or residential areas, and to reduce the uncontrolled extraction of raw materials.

6. The impact of use on ownership changes and transformations of the borders of historic parks and gardens⁸⁹

It should be emphasized that the genesis of the difficult ownership situation of park layouts has its deep justification in the political and economic changes over the last 150 years. Already at the beginning of the 20th century, the historic values of residential estates and adjacent parks were realized, and in the interwar period, the first lists of historical gardens under legal protection were created. So the neglect and destruction that took place over the last century are not the result of a lack of awareness of the value of park layouts, but of much deeper devastation.

For example, according to the 2004 report on the condition of monuments in Poland⁹⁰, only 13% of historic parks are in good condition, 30% require minor maintenance and 41% of historic parks require full restoration. Parks in a satisfactory manner are primarily those that are privately owned by the owners of mansions and palaces. Parks near museums and city parks constitute a relatively small number. Most of the park layouts are in a state of far-reaching devastation. The areas of the cultural landscape belonging to the State Treasury and municipalities are perceived by the society as nobody's. They are used as landfills, cattle grazing places, and timber

⁸⁹ Pałubska K., Pudelska K., *Ownership changes and their impact on the condition of monuments and transformations of the historical boundaries of park layouts in the Lublin region*, Collection of Architectural, Urban and Landscape Studies, PAN, Lublin, pp. 86-101

⁹⁰ The data was included in the update of *the Report on the system of cultural heritage protection in Poland after 1989*, edited by Jacek Purchla, 2009. KOBIDZ (NID), Warsaw.

harvesting facilities. An additional complication is the fact that in the past, habitat or farm plots were separated from the parks for families living in palaces and manors. New residential, utility and temporary buildings were built there in an uncontrolled manner, which deformed the compositional layout of the park layouts. Historical forest parks with a large area, created next to large residences, which, due to an inappropriate land policy, were included in forests and used as forest production areas became another problem. The forest management surveys created by the forest services often indicate collision recommendations with the findings of the conservation services.

Constant changes of users and functions were a big problem, which led to further reconstructions and divisions. Such was the fate of the Małgiew-Podzamcze park and palace complex, which was successively an agricultural school, a workers' hotel, a production cooperative and, from 1956, again a primary and agricultural school. The transformations led to devastation and significant cutting down of the historic stand and the ruins of the palace itself.

In recent years, the ownership structure of monuments has changed significantly, which is related to the ongoing privatization process of state property since the 1990s. Currently, 30% of monuments in Poland are private property. The privatization process covered a very large number of gardens at palaces and parks. Then 21% of the monuments are municipal property, and 15% - the State.

The predicted natural tendency is the further privatization of historic landscapes. It is worth noting that, according to the authors of the report, 10% of monuments have a complicated ownership status or are subject to joint ownership, which in the case of residential complexes occurs when individual buildings have been or are purchased by various investors. This makes it difficult to protect these objects or complexes in accordance with the conservation rules, as only one owner or user can ensure proper maintenance of the monument. In addition, the owners' different financial capabilities and their different needs in relation to the functions performed by the objects have a significant impact on their protection. In addition, 1% of monuments have an unregulated ownership status, resulting from many years of court cases regarding the claims of their former owners or their legal heirs. And for 7% of monuments, there is no data on the state of ownership, resulting from the past related to the post-WWII term of abandoned property or the ongoing proceedings for the acquisition of property rights.

The report shows that a large percentage of the facilities requiring renovation are manorial and salary garden layouts, taken over in a very poor technical condition by private owners. On the other hand, among monuments with communal property, it is

disturbing, among the state of residential development with historic parks awaiting potential buyers. An example of such a state is the palace and park complex in Małgiew-Podzamcze (Poland), which is deteriorating because the commune, not having sufficient funds for renovation, has been looking for a private buyer for years - despite the fact that there is still a primary school and council apartments there, which makes it difficult to find a buyer.

The largest percentage of monuments requiring major renovation are monuments owned by several owners or with an unregulated form of ownership. There is a frequent phenomenon here of the inability to agree on joint investment activities, e.g. the undeveloped manor and park complex in Wola Osowińska (Poland), partly owned by the city and private owner, has been deteriorating for years.

For several years, there has been a noticeable improvement in the condition of historic buildings taken over by private individuals, especially manor and palace complexes. Despite financial difficulties, the owners of historic buildings more and more often undertake the adaptation of neglected park layouts, they understand the conservation requirements better and better - especially the need to preserve the original details.

There is also a growing interest of communes in monuments, which are beginning to be perceived as elements increasing the tourist attractiveness of the town and the region. In attractive towns, one can notice the phenomenon of buying historic real estate in order to locate new investments there, focused on servicing tourist traffic.

Often the culprit for inadequate protection, second divisions, uncontrolled ownership and utility transformations, and thus the poor state of preservation of monuments, is poorly prepared documentation of the monument. Information cards from the 50-80s. In the 1980s, park layouts are laconic, and sometimes they do not have a graphic appendix at all, with a precise definition of the boundaries and registration divisions, they do not protect the surroundings, or concern only part of the layout.

Additionally, despite the fact that the boundaries of the entry should run along the boundaries of the registration plots, and where it is impossible - along permanent elements of land development, e.g. a road, a ditch - their course was often intuitively marked on the plan along lines completely unrecognizable in nature. This gives further possibilities for secondary divisions in the future, along artificially designated protection lines crossing the cadastral plots. The most important thing is that the boundaries of the entry result from the preserved historic substance of a given park based on the recognition of historical boundaries and confrontation with the state of preservation of the composition. A feature that hinders the recognition of historical

boundaries is usually multiple divisions and consolidations of land, and thus secondary layers that make it difficult to formulate appropriate protective recommendations.

In addition, new buildings appearing in the course of evolution, which often bear historic features - although foreign to the style of the park under the entry - are usually not protected. Meanwhile, good practice shows that later layers can be protected - the boundaries resulting from ownership and design transformations, but also manifestations of revalorization (restoration or creation) activities of outstanding designers, for example from the 20th century.

7. Adaptation and revitalization of the cultural landscapes of historic cities⁹¹

Transformations of public spaces in historic cities, especially city squares and squares, show a disturbing trend of unification and duplication of solutions that, correct in their universalism, lead to the loss of individual features of cultural values and regionalism. Searching for forgotten values, discovering traditions and hidden meanings of selected small towns has become a challenge for the modern shaping of open spaces of social integration, acting as a catalyst for forgotten meanings.

- **mass culture**

Contemporary cities, despite the differences, should be perceived as a socio-spatial structure, one of the main assumptions of which is the fulfillment of human needs important for both society and the individual. In the current digitization era, an important part of the city structure with a positive impact on the development of society are public spaces, areas of special importance for meeting the needs of residents, improving the quality of life and a place for physical meetings of the population. They should attract a variety of social groups, differing from each other in terms of age, origin and social status. An important role to play is building the city's identity and tolerance⁹².

The research shows that almost all city authorities and residents are aware of the need to revitalize urban public spaces with the use of historic resources. Meanwhile, the dominant design trend towards the unification and globalization of space, creating

⁹¹ Pałubska K., 2015 *Hidden small towns of eastern Polish - identity building through an open public spaces*, in *Space and Form* No. 23 / Issue 2-2015, ed. PAN O / Gdańsk

⁹² de Sola-Morales M., *The Impossible Project of Public Spaces*, 2010, <http://www.publicspace.org/en/text-library/eng/c006-l-impossible-projet-e-de-l-espai-public>

the appearance of visual homogeneity, makes the space safe, aesthetically correct, but devoid of emotions, impressions and contrasts. That is why small historical cities do not want to be regional and familiar - they want to be modern. Stakeholder complexes have a direct impact on the lack of recognition of the most important advantages - exceptional natural and cultural values. Local communities internationalize looking for global symbols of belonging to a great global culture that dictates its own system of universal values. Its consequence is the exclusion of everything that is foreign to the standard patterns of "mass culture".

The genesis of this phenomenon are clones of symbols duplicated both by historical cities and cities that have lost their identity or are just building it. For example, in the Salt Market in Zamość, Poland, despite the high-quality materials used and aesthetic workmanship, the solutions do not refer to the former market square with any element of space with a city scale, a well and butchery - symbolism has been replaced with universalism (Fig. 4).



Fig. 4. Salt Market in Zamość – Poland, after the renovation in 2010. Source: il. K. Pałubska

Support for universal solutions means that every city square begins to look the same, each square and playground are designed according to identical patterns and standards - thanks to which, through analogy, they gain easy social acceptance. Looking at the investments made in the last ten years, it is hard not to notice the cosmopolitan trend of escaping from regionalism and tradition. Cities copy solutions

that have gained the favor of residents and opinion-forming circles in other regions. An example of twin copies in Poland can be seen in the solutions of the small-town town square of Chełm and Międzyrzec Podlaski (Fig. 5-6). The success of these projects is undoubtedly the use of high-quality materials and reference to the character of the historical space, which certainly increases the quality of the space.



Fig. 5. Market surface pattern in Chełm. Source: il. K.Pałubka



Fig. 6. Market surface pattern in Międzyrzec Podlaski. Source: il. A.Gromadzki

- **the identity of the landscape of historic cities**

People need places that are safe, innovative, readable in terms of composition, but above all, with their own individual character. That is why in historical cities more and more attention is paid to the concept of identity, both of the entire city and its constituent parts. The Leipzig Charter for the Sustainable Development of European Cities recommends a greater use of an integrated approach to urban development policy by creating and delivering high-quality public spaces. It gives the landscape an important social role in the sphere of culture and nature. It is a basic component of cultural and natural heritage, strengthening the identity of individuals and local communities.

The concept of *genius loci* becomes indispensable when we talk about public spaces. The concept originally signifying a ghost or a demon tasked with taking care of a given place is now very widely understood. One of the definitions is given by B. Gutowski, who considers (...) “*genius loci* to be a unique phenomenon, against which it is impossible to build a permanent ontology, because it is realized through the

temporality it contains. Genius loci forces us to identify with external contexts. They shape our subjective identity". Generally speaking, it can be concluded that a place with genius loci is a space characterized by high individuality, therefore it should be remembered that this concept is not objective and depends largely on the sensitivity of the individual. Communicating ideas, symbols and values beyond aesthetic values. It is important to intuitively feel the uniqueness of a given place. Finding or creating an individual spirit of a place is an important element in designing contemporary public spaces.

According to Z. Myczkowski⁹³, the concept of place identity can be considered a relationship between the culture and tradition of a place and its form. The specific formation of these dependencies determines the features of the landscape of a given place. Thus, the landscape is an expression of the identity of a place. The term "former identity of a place" should therefore be understood as a set of factors expressing the entirety of the continuity of tradition, culture and the canon of a place in their historical layers in the landscape. The familiarity of the city's architecture are the features that make the bonds of attachment and belonging develop between its inhabitants and the city⁹⁴. Currently, the common overtone of ethnographic "familiarity" unfortunately gives rise to the xenophobic impression of the backwardness of the inhabitants.

However, when designing a specific space in the city, it is worth realizing the character of this place. Tradition is the passing on of cultural content from generation to generation. The destruction of human communities in Eastern Poland led to the dying away of their traditions. When new communities entered the existing tradition, they ignored it, and even hated it or transformed it by expanding it with their own spatial traditions.

In the process of revitalization, the most important role is played by the authenticity of the place and the events that made up the history of a given place. Mixing forms and styles, modifying the functions of buildings and modern accents refresh the space and are a normal phenomenon of the piling up of successive epochs. It is becoming a problem to cut off the layers in favor of introducing new patterns. The renewal leads to the creation of a "brand", an area attractive to consumers, but devoid of local identity and connection with its community. Architecturally attractive buildings do

⁹³ Myczkowski Z., *Conservation creation in the cultural landscape*, in: Technical Journal, Cracow University of Technology, Kraków 2007, pp. 57-59

⁹⁴ A special emotional relationship is created between a person and his place of life, which gives a sense of being at home - a sense of familiarity. Usually, the place of life of a given human community bears specific features that define belonging and territorial distinctiveness. Pawłowska K., *Idea of the homeliness of the city*, Cracow University of Technology, Kraków 2001, pp. 4 and 8

not compensate for the loss of the opportunity to enrich the cultural offer available in the public space. The weakening of the role of public space and the phenomenon of "disappearing squares" are the weaknesses of the spirit of these places.

- **regionalism against the background of the European community**

The decentralization of power and responsibility for public space in a changing Europe resulted in the transfer of responsibility for shaping space to private investors or local authorities. Democratization and the free market economy took over spaces in a free and disorderly manner. The immaturity of the new situation was a symptom of many irreversible damage. Small cities, not having too large a budget and powerful investors, often escaped the plundering expansion of the 1990s.

It was not until the 21st century and EU funds that allowed to start revitalization and investment development on a large scale. With great sensitivity and respect for local identity, the old town of Kazimierz Dolny (Fig. 9) or Zamość in Poland was revitalized. Unfortunately, thanks to them, the now defunct two markets in Piaski were also modernized (Fig. 7-8.). Rejowiec Fabryczny, with a new square serving market functions (Fig. 10.) and the "Old Boiler House", which is the town's cultural and sports center, is an example of a town similar to Piaski that evades completely historical and modern canons of aesthetics. A relatively young city (it received city rights in 1960), at the turn of the 19th and 20th centuries a workers' housing estate for employees of the Nadwiślańska Kolej Żelazna and a powerful cement plant, it built its identity as early as the 16th century as the farm of Mikołaj Rej - the father of Polish literature and culture.



Fig. 7. Piaski - revitalized town square - the remains of the oldest part of town: the medieval market and the Jewish Ghetto. Source: il. K.Pałubska



Fig. 8. Piaski – main park of the city, then New Market of the nineteenth century to the revitalization of EU funds. Source: il. K.Pałubska



Fig. 9. Market Square in Kazimierz Dolny, the revitalization of EU funds. Source: il. K.Pałubska



Fig. 10. Market Square in Rejowiec Fabryczny, the revitalization of EU funds. Source: il. K.Pałubska

The devastation and misunderstanding of the unique cultural value has its origin in the phenomenon resulting from the common procedure of selecting companies that perform revitalization in a tender, where the only criterion is price, not quality and experience in preserving the cultural values of the place.

- **multi-ethnicity, multi-faith and multi-culturalism**

The history of religious relations, which plays a special role, overlaps with the turmoil of statehood. Religion has built social ties in many countries, supporting nation-building processes with a symbolic dimension. In Poland, Catholicism is still considered a pillar of national identity, and the eastern border has become the border between the Roman Catholic and Greek Catholic religions, where the Orthodox religion was associated with the tool of Russification and the religion of the invaders. The seized Orthodox church estates, now returning to their rightful owners, are still becoming a source of conflict in many Polish cities.

The need for symbolic domination of Catholics has made the landscape a battlefield: a place where groups fight for the best possible representation of their identities, trying, as far as possible, to shape the landscape and equip it with meanings that best correspond to the vision The identity held by the group at a given moment. The dominant cubature of the church in Piaski, among the low buildings of the town in the former Jewish district, clearly testifies to the domination of Catholicism over Judaism, once a city in 80% belonging to the Jewish culture. Currently, despite the revitalization of both Piaski markets, we learn nothing about the Judaic identity of this

city - the space has been renovated, but certainly not revitalized. Culturally it remains dead despite the colourful history of this small market town⁹⁵. In Chełm, which is a symbol of Judaic culture for Jews, it is also difficult to find information about the Jewish roots of the city's landscape.

The communes-Jewish districts, and then the Jewish ghettos, characteristic of most towns in Poland, disappeared spatially together with the extermination of Jews during World War II. The destruction of Jewish communities led to the dying away of their traditions, while the new communities displaced in their place ignored the existing tradition, and even hated it. In Międzyrzec Podlaski, a monument commemorating the murdered Jews of Międzyrzec called "Prayer", erected in the revitalized market square in 2006, was guarded by the police until it was officially unveiled, because the local authorities were afraid of the profanation or devastation of the sculpture. Attempts to open up a Jewish tradition still seem extremely difficult and meet a lot of resistance from local communities, which are afraid, above all, of losing their property to the restored Jewish communities.

- **building a new familiarity**

It has been noticed that local communities in their cultural development will now look for safe, unified forms. This feature accompanies the revitalization of city centers where local identity is disappearing. Former inhabitants are pushed beyond the limits of development, they are excluded as individuals not suited to the "creative society" striving for development and momentum in action. This phenomenon leads to the standardization of public spaces, which loses its uniqueness when looking for originality. Although urban repetition gives the hallmarks of a spatial order, in mass culture it becomes a model they lose their strongest value, which is local color, climate - genius loci. Paradoxically, most of the presented revitalization activities led to the blurring of the regional identity through the modernization and unification of solutions. Small town communities do not expect a surprise effect, they expect simple sidewalks, working lanterns, a few clean benches and swings for children. After years of neglect, this effect still makes a spectacular impression on them. They do not understand that they can expect more, maturing in aesthetic tastes, they accept everything that is new and clean.

⁹⁵ Spector S. i Wigoder G. (red.), *The Encyclopedia of Jewish Life Before and During the Holocaust*, t. II, New York 2001, s. 985, <http://www.sztetl.org.pl/pl/article/piaski/5,historia/?action=view>

A question therefore arises to what extent in the future the public open spaces of city squares and squares will create a sense of local identity, and to what extent, their own image, as a new brand.

8. Conclusion

The changes taking place in the cultural landscape result from spatial development, i.e. from the manner and scale of shaping the structure of functional and spatial systems - both settlement and ecological. These changes for many millennia did not threaten nature and landscape, but as social and technological development, the pressure on space and the natural environment, and thus on the landscape, was increasing. We now understand that the degradation or destruction of the landscape brings not only specific material losses, but also prevents healthy functioning in space. People are aware that the cultural landscape is a resource that fosters economic activity and is an important part of the quality of life. We recognize that the landscape not only contributes to the creation of local cultures, but is a manifestation of our culture. We want to shape and protect the landscape more and more consciously. We attach increasing importance to conscious spatial planning, which is to guarantee spatial order and care for the identity and style of landscapes.

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