

Using or reusing? Parameter analysis of infrastructure refurbishment projects as touristic products

Celia López-Bravo¹, Emilio Lonardo², Ana Costa Rosado³

1 · HUM 700 Heritage and Territorial Urban Development in Andalusia, Department of Architectural History, Theory and Composition, University of Seville, Seville

2 · Dipartimento di Design, Politecnico di Milano, Milano

3 · HUM 700 Heritage and Territorial Urban Development in Andalusia / CEAACP/CAM, University of Seville, Seville

ABSTRACT

The refurbishment of old abandoned infrastructures seems to be a useful driver for the development of some forgotten or problematic areas in both urbanized and rural contexts. The appearance of new social practices, the perceptual enhancement and economic development are some of the benefits that this practice can bring to the sites affected by these operations.

However, employing tourism as the new function is an engine that usually involves economic growth but also new dynamics, like the increase in the influx of people and traffic or the 'forced' relationship between locals and tourists. Working in a rural context, in a metropolis or even in a small urban centre needs the confrontation of architects, designers and policymakers and brings different needs and challenges.

The aim of this paper is the research of a series of parameters to evaluate, uniformly and globally, every renovation of obsolete industrial heritage. From these variables, objective valuation of any project's consequences could be completed.

On this purpose, the study starts from a case studies selection based on different physical, economic and e-motional features. Once these characteristics are detected, they are discussed and transformed into a methodological table by subdivisions into these three main categories.

Keywords

Development,
Economic growth,
Identity, Landscape
use, Mass tourism,
Quality of space

1. INTRODUCTION

If we think that the European Landscape Convention, in its Art.2, identifies as a field of action both the landscapes of everyday life and those degraded, we can easily understand how much the attitude towards the landscape debate has changed, opening scenarios considered scarcely unusual for designers until the last century.

2008, marked the outbreak of the international financial crisis, which resulted, in many areas of the world, in an attitude of adaptation. The theories of happy degrowth (Latouche, 2008), with the rediscovery of ethical principles such as frugality, are defining new models of life and behaviour that are, in fact, already in place. Many areas considered uninteresting have been rediscovered and readapted for tourist use, generating, with alternating fortunes, new economic and social processes.

In this regard, during the last years, we have attended to numerous recovery operations of historical infrastructures, in the specific field of the industrial heritage; many of them based on their pure adaptation to the tourist visit (see table 1). This new function, albeit removed from its primitive industrial functionality, has had the advantage of favouring citizens quick comprehension of industrial assets as a heritage typology. However, sometimes, it has also leaded territories, linked to the industry (energy, transport, etc.), to transform their economic dynamics, their accessibility, their appearance, and –last but not least– their way of life, as required to adapt to the upcoming arrival of several thousand daily visitors (Labadi and Long, 2010). In most cases, the service sector fully dedicated to tourism is now the main occupation in these areas and, in some cases, their sole remaining economic activity.

On a global scale, some of these industrial sites are now placed on an extreme situation. It is well known that the spread of the so-called World Heritage flag and the resulting mass tourism, have brought severe consequences for many cultural assets (Zhang, Fyall & Zheng, 2015). Many of these consequences are not just physical, as tourism's anthropology encompasses, more than visitors' numbers but also how individuals interact with sites and how sites and cultures are changed by this interaction (Smith, 1989). For many of world heritage awarded assets, their valuation has been paradoxically the engine of their physical and cultural degradation (Labadi, 2017).

Fortunately, not everything tourism brings affects negatively to these sites. Authors as Labadi and Long define tourism as the precipitator of modernity (2010). This statement allows a double reading regarding heritage tourism consequences, as both positive and negative aspects can be highlighted. On the one hand, it allows for grassroots development and the empowerment of specific cultural identities; tourism transformation boosts the economy in areas previously blighted by de-industrialization, business closures, unemployment

NAME	PLACE	DATE	PROJECT	PREVIOUS USE	CURRENT USE
Pont du Gard (Remoulins)	FRANCE	I	2000	Water supply	Cultural visit
Cava di Pietra (St.Margarethen)	AUSTRIA	I	2008	Minery	Cultural facility
La Darsena di Milano (Milan)	ITALY	XVII	2015	Harbour	Leisure time
Mines de Bruoux (Gargas)	FRANCE	XVIII	-	Minery	Cultural visit
Canal de Castilla (Castilla y León)	SPAIN	XVIII	-	Transportation	Leisure time
Million Donkey Hotel (Prata Sannita)	ITALY	XVIII	2005	Housing	Accommodation
Eric canalway corridor (New York State)	EEUU	XIX	2000	Transportation	Leisure time
Depósito Mãe d'Água de Amoreiras (Lisbon)	PORTUGAL	XVIII	1976	Water supply	Cultural facility
Pontcysylle Aqueduct (Wales)	GREAT BRITAIN	XVIII	2009	Transportation	Cultural visit
Carrieres des Lumieres (St. Remy Provence)	FRANCE	XIX	1976	Minery	Cultural facility
Brick Pit Ring (Sydney)	AUSTRALIA	XIX	2012	Industry	Cultural visit
Sweets Hotel Bridge Cabins (Amsterdam)	NETHERLANDS	XIX	2012	Communications	Accommodation
Caminito del Rey (Málaga)	SPAIN	XX	2015	Industry	Cultural visit
Gallerie di Piedicastello (Trento)	ITALY	XX	2008	Transportation	Cultural facility
Parque da Juventude (Sao Paulo)	BRAZIL	XX	2010	Imprisonment	Leisure time

and environmental degradation (Pardo, 2017); on the other hand, when not based on sustainability principles, it can bring destruction and erosion.

1.1 Which is the current discussion about industrial heritage tourism projects?

It seems critical that one of the leading global heritage issues is local sustainability problems, while cultural heritage is mainly valuable because of the meaning that people ascribe to it through personal identification and attachment (Labadi and Long, 2010). As many authors support, places once associated with production success only as tourist products when these operations consider the regional fabrics.

At a certain point, the World Heritage Convention determined the main sustainable development goals to be followed by heritage tourism. Community development is an essential part of these sustainable development policies integrated by the World Heritage Convention on the List of World Heritage in Danger (UNESCO, 2009).

This statement is not merely a theoretical concept since some recent studies show how residents perceptions and attitudes towards tourism development play a key role in shaping urban revitalisation (Xie, Lee and Wong, 2019) and several reviews highlight local development as one of the main themes when

Tab. 1 / List of lasts infrastructural recovery projects for touristic purposes. Case studies developed at TOURISCAPE Congress communication. Source: Authors (2019).

talking about revitalising industrial heritage (Perfetto and Presenza, 2017). As a method to characterise revitalisations, the guidelines on Industrial Heritage Tourism developed by the European Regional Development Fund establishes three kinds of industrial heritage conversion procedures (Mihic and Makarun, 2018): reuse as a cultural monument or site, reuse for tourism purpose and reuse with secondary tourism effect. The typologies of conversion affect the local population differently, and, consequently, different sorts of deterioration (material, planning coherence, natural environment) are the main reasons why recognised cultural assets of any of those categories become endangered, even entering the World Heritage in Danger List. Massive amounts of visitors and commercial purposes (some of them enhanced by tourism) can become causes of it. Other reasons, such as the loss of cultural significance and historical authenticity, can also become a risk, as it is seen at Liverpool Maritime Mercantile City or the city of Machu Picchu (UNESCO, 2020).

The State of Conservation Information System of UNESCO considers the most harmful factor to be inappropriate institutional management, including unsuitable functions such as tourism overuse, which affects more than the 75% of the Unesco listed cases since 2013. On this respect, ten years ago, the term 'slow tourism' defended the recovery of fundamental values to achieve a real and authentic experience as a tourist. It was focused on the idea of responsible and conscious visitors that could experience the local tradition visited.

On the other side, there are also good practices where local empowerment has worked as an advantageous factor. In operations performing as regional restructurers, there is a common factor: local appropriation has been taken into account, leading the cultural project to succeed in the long term. An excellent example of this is the case of the Pont du Gard in France, one of the case studies, or the old shipyard in Macau (Xie, Lee and Wong, 2019).

1.2 How have other researchers addressed this problem?

As post-industrial landscapes are a widely researched issue, many authors have addressed different perspectives. Geographers, designers or architects have work on their valuation as cultural assets during the last decades. Within the last ten years, the impact of 'touristification' on local development processes has been profusely studied, mostly from the geographical point of view (Del Pozo, Solís y González, 2018; Perfetto and Presenza, 2017; Brumann and Berliner, 2016; Mas and Sabaté, 2013). However, different nature problematics are being addressed from several perspectives: geography, sociology, economy, policy, architecture, design, sustainability, etc.

The analysis of the literature shows that most of the applied methodology concerns the use of 'hard' parameters that study the valuable and economic part of the projects, which is a fundamental but incomplete rating in reading the complexity of territorial dynamics.

The quantity and variety of cases and judgment express the need for a criterion to measure all these factors objectively. The understanding of which improvements or disadvantages these projects bring upon their subjects must be the goal. The method proposed should then establish which are the measurable and e-motional aspects, and work for particular cases, answering questions as 'what long-term changes of infrastructure's use cause in these territories?', 'are these transformations – for both the subject and its landscape – mere scenography or do they enhance heritage values?', 'which actions, accessibility and reception of visitors, affect these environments?' and 'what sociological changes bring these renovations in the area's inhabitants?'

2. METHODOLOGY, OBJECTIVES AND CASE STUDIES

2.1 Methodology and objectives

The aim of this paper is the research of a series of parameters to evaluate, uniformly and globally, every renovation of obsolete industrial heritage. From these variables, objective valuation of any project consequences could be completed.

On this purpose, the study starts from a case studies selection based on different physical, economic and e-motional features. Once these characteristics are detected, they are discussed transformed into a methodological table by subdivisions into these three categories.

Methodologically, the paper is structured in three parts: it starts from the categorisation of a broad spectrum of industrial recovery operations (see table 1), to reflect the different purposes for which these can be put into practice.

Since this work focuses on the infrastructural recovery as a tourist item, a review of the latest ancient structure refurbishments has been developed. These good architectural practices selected used to be functional constructions which, after a certain period of inactivity, have become a leisure and cultural facilities.

For a period that goes from 1976 to 2015, 15 recovery projects have been selected (table 1). They attend to the Guidelines mentioned above on Industrial Heritage Tourism, covering a wide range of conversion procedures all of them related to a certain point with tourism.

Two aqueducts (Pont du Gard in France and Pontcysyllte in Great Britain), three mines and quarries (Bruoux and Carrieres des Lumieres in France and Cava di Pietra in Austria), three canals (Canal de Castilla in Spain, Erie Canalway corridor in the United States and Darsena di Porta Ticinese in Italy), a water reservoir (Depósito Mãe d'Água de Amoreiras in Portugal), a pit (Brick Pit Ring in Australia), an hydroelectric power-plant infrastructure (Caminito del Rey in Spain), a tunnel (Gallerie di Piedicastello in Italy), bridge cabins (Sweets Hotel in the Netherlands), or a prison (Parque da Juventude in Brazil) complete the list.

They are now recovered into cultural facilities, tourist accommodations, public spaces and museums.

The second part of the work focuses on the analysis of three of the projects, by which we mean both the definition of the project aim and the formal one, trying to collect information through a literature review and by accessing the heritage archives. All of them are characterised by obsolescence from a structural, functional, typological or urban perspective. The study zooms in on the tourist evolution and heritage significance of these places. From these international cases (in bold at table 1), we propose a series of parameters to evaluate their mid and long-term transformations.

These parameters are assessed objectively along the third part of the study, focusing on the ones implies in their landscape debate and their social environment development.

As we can detect, water infrastructure results in a significant part of the cases at table 1, following this tendency, we have chosen three of them, an aqueduct, a dock and several bridge cabins, reused as a cultural landmark, a public space and a hotel respectively, to evaluate the local impact that their heritage transformation has resulted in. The three are examples of those as mentioned earlier 'industrial heritage conversion procedures' that were transformed in 2015, 2012 and 2000. This period places the study along a 15 years' process of valuation.

2.2 Case studies

The Pont du Gard, a cultural site

The Pont du Gard, today reused as a cultural monument, was built by the Romans, during the 1st Century a.C. It is part of a longer aqueduct which brought water between Fontaine d'Eure in Uzès and Nîmes. The bridge, 360 meters long and around 50 meters high, was placed close to the actual Remoulins, a little French town in the Provença, being nowadays the highest existent Roman Aqueduct. Its deterioration started during the 3rd Century, and its function stopped entirely in the 6th Century.

If during the 12th Century the bridge was adapted to allow the passage of the carriages, during the Renaissance it was already considered a monument, starting to be visited by Humanists and early travellers. At mid-18th Century, it continued being used as a road; then a second bridge was built to ensure circulation through it.

The Pont was protected as a Heritage Asset at the First Historical Monuments List published in France in 1840. From the 19th Century already, the Pont was considered to be linked to its landscape environment. The search for the 'picturesque' becomes a compromise, and it even led to the closing of a stone quarry located 80 meters from the monument in 1921.

The process of protection of the site continued throughout the 20th Century, with absolute superiority over the reality of the inhabitants. The natural site was protected in 1976 and 1994. Eventually, in 1985, the site was listed on the UNESCO World Heritage List.

The Pont du Gard used to be a place of the inhabitants, where they often went for leisure time, took the family portraits and celebrated popular parties and marriages. However, something changed during 1865 when a new establishment was opened on the right bank of the bridge, the first hotel called Chez Labourel. This fact, together with the proximity to the closest railway station, changed the atmosphere of the place. Significant tourist visits started so that this place became a prominent tourist spot in France.

From 1936 until 1980, the flows continuously increased. The hotels and restaurants multiply, the campsites appear, as well as a multitude of small shops, huts, snack shops, car parks, etc. The local authorities decided to build a tourist house and distribute facilities for seasonal activities (Berton, 2011).

From 1985, after the Bridge entrance on the World Heritage List, different projects for the site were developed. A first project called Camera Romana including parking lots, cultural program shops, bars and restaurants, two large amphitheatres, a hotel and a real estate complex among other things drove the inhabitants of the region to create the Comité Intercommunal de Défense du Site du Pont du Gard (CIDS) in opposition to the project. This creation was the beginning of the local participation of this region along with the different projects that had a place here. After several attempts, the current visitor facilities were open to the public in July 2000. The objectives were the protection of the environment and heritage, quality facilities for visitors and local development.

The new site, projected by the architect Jean-Paul Viguier, was structured into three areas, based on historical analysis. The reception infrastructures, the 'discovery zone' including the aqueducts and Roman quarries, and the third zone of Mediterranean forest. Also, the area is now car-free, and a maximum of 15.000 visitors per day is established.

The area of territorial influence of the Pont du Gard is also a remarkable fact. If the World Heritage Asset covers an area of 0.17ha, its buffer zone extends to 689ha, confirming its natural values and cultural significance inside the region.

The Darsena di Porta Ticinese, a public space with a secondary tourism effect

The Darsena of Porta Ticinese (dock) is the meeting point of the Milanese Navigli and has been reused with a secondary tourism effect. Into this bay, the Naviglio Grande flows and ends under the bridge called Ponte dello Scodellino. It is also where the Martesana Naviglio ends, along with the inner Naviglio and the Naviglio of Pavia (Codara, 1977). In the 20th Century, Lombard navigation faced a period of decline until 1921, but from then onwards, traffic

started up again, reaching 500,000 tons in the docks in the years before WWII (De Finetti, 2003).

The last barge loaded with sand reached the Darsena in the autumn of 1975. Commercial navigation on the Naviglio Grande toward Milan, still done without motors and going along with the current, was definitively abandoned that year. Still for some time, the shores of the city's most extensive water area¹ were used to deposit goods no longer transported via water but via land. A few years later, the facilities and port equipment on the shore bordering Viale Gabriele D'Annunzio were demolished and taken away, and the Darsena remained without a function, an 'urban vacuum', frequented only by a few haggard fishermen (Malara, 2012).

In 2004, after years of neglect use and abandonment, the Milan City Council announced an International Design Competition, but the project suffered administrative troubles and ten years of abandonment. In 2014, due to EXPO 2015 Milan got funds for infrastructural works, part of them dedicated to its waterways and the Darsena.

On April 26th, 2015, the Darsena was finally reopened after 18 months of intense work, registering 80000 visitors on an opening day: the final chapter of a troubled history that characterized the area in the last decade.

The project for the redevelopment of the Darsena by the architect Edoardo Guazzoni, winner of the competition held in 2004, reflects a long process of elaboration made of articulated steps, recording postponements and suspensions, programmatic corrections and repeated settlements, even at the construction site in progress, resulting in a more profound and more in-depth knowledge of the places.

The architectural and urban themes and objectives set in the early stages of the work have also been confronted with the complicated road, hydraulic and navigability issues and with the difficulty of bringing back to a unitary and coherent figure, an ample public space, a place of water that has had intricate construction events since the fourteenth century.

Project's protagonists are the walls, the spur, the market square and the new bridge. A rectilinear wall connects two promenades, one at the water level and the other at the city's height, separating the bay from the driveway.

The continuation of the new bank in front of the historical bridges, where the Naviglio Grande flows into, and the Naviglio Pavese begins, gives rise to a spur-shaped embankment. The demolition of the old municipal market made it possible to extend Piazza XXIV Maggio towards the bay. In terms of construction, the project's central theme is the comparison between the masonry character of the banks and the technical aspect of the fixed service

¹ / Milan boasts in addition to the Darsena, the little lake of San Marco, the little port of Santo Stefano and the little basin of Viarenna.

equipment. The new bridge's project connecting the northern bank and town area represents the collaboration between architects and engineers, such as the basement attachments of the new masonry, the embankments, and the mechanical current stirrers (Guazzoni, 2020).

The urban placement of the Darsena is also a point of interest, being placed along the border of the historic and dense urban plot of Milan City Center and an ancient industrial area to the South. The urban cityplan considers all this area conformed by the Darsena itself and the canals as a Beni Paesaggistici, which means an area where non-movable assets create a unique aspect having aesthetic and traditional values.

The Amsterdam Bridge Cabins, a new concept of tourism infrastructure

For a hundred years, Amsterdam's canals traffic system was controlled by bridge keepers. These workers used to live by the waterways in small private buildings called bridge houses that were spread all over the city. Nevertheless, technological advances, such as centralised bridge control systems, made these historical houses obsolete. Consequently, bridge cabins became abandoned until 2009, when a design project proposed their transformation into hotel rooms. Then, a master plan to reuse them with a tourism purpose started. A multidisciplinary team transformed 28 bridge houses into variously-designed double-bedrooms under the Sweets Hotel brand. The hotel is a new concept of tourism infrastructure, some urban acupuncture, where the rooms are each one in a different and extraordinary location between the city and the water, merging tourists and citizens and creating urban corridors along the canals. The constructions also express the different period and styles of architecture within the city from Classicism to Functionalism and Expressionism. The oldest guardhouse dates back to 1673, while the most recent one dates back to 2009. The sizes range between 230 square meters and 40 square meters, each designed and treated differently. Currently, 18 rooms have been completed, with 10 more to be completed by 2021 or 2022 (Sweets Hotel, 2020).

This new hotel is a small-scale recovery project that plays with a particular area, Amsterdam Canal District. The Seventeenth-Century Canal Ring Area of Amsterdam inside the Singelgracht was recognised as a World Heritage Site in 2010, due to its hydraulic engineering system and town planning, among other urban values. Precisely, some of the recovered cabins are placed along the Asset buffer zone (five of them), and the Canal District protected area (the Amstelchutsluis and the Walter Süskindbrug one).

3. RESULTS

The guidelines on Industrial Heritage Tourism have made it possible to define which case studies to analyse accurately, one by typology; moreover, the choice was also influenced by the historical period of the interventions, which have affected each project towards different interests.

In the cases of the Darsena project and the Sweets hotel, both renovative strategies, their short-term nature makes challenging the data collection, which suggests the interest in studying the development of these places in the time to come. On the other hand, Pont du Gard is with any doubt the most dated, being a source of spatial, economic and local participation parameters.

Focusing the study on the three mentioned projects, electing them as examples of transformations of infrastructures for tourist use, brings the outline of some parameters as the main result of the research. They can be used to analyse projects of reconversion of infrastructures for tourist use, to evaluate their effects on the places, on the inhabitants and tourists, with the possibility of drawing out an identikit. These parameters can be inscribed in three macro clusters displayed in table 2.

3.1 Physical parameters

The physical or 'hard' parameters are those that immediately impact the converted area. The modification of a space impacts on its surroundings, creating a possible attraction of new activities and new sociality.

The natural and extensive component of the Pont du Gard landscape area exemplifies how physical issues such as traffic noise, parking plots, or crowds of non-controlled people directly affect the Assets physical perception and enjoyment in cases with a significant natural component. As a result, several physical parameters were detected from the characterization of the aqueduct.

Among the physical parameters to be detected to study the impact of a reconversion project, there is first of all the surface affected by the project; i.e. how much has actually been reused and how much has changed function, or how much other space around it has been incorporated into the intervention. This parameter is used to identify the attractiveness of potential activities supporting the area or to understand what proximity has been modified, destroyed or created.

In continuity with the previous one, it was considered attractive to include, in the proposed parameters, also the percentage of areas that have changed use, within the project area.

Secondly, the proposal identifies the change in the number of car parks as a second fundamental parameter in the construction of the analysis; a high number of car parks, and therefore a large area of the project dedicated to them, presupposes that there is a tendency to vehiculate a road use of the area, with effects on the adjacent road network and air quality.

Consequently, to better understand the new or future vocation of the area, it is necessary to study also the number of green areas lost or integrated into the project.

DATA	MEASUREMENT	PARAMETER	PROSPECTS	
PHYSICAL	area	m ²	Area affected by the project	Minimisation of the area affected by the project and parking areas, diversification of uses and increase of green areas
	area	N° / m ²	Parking lots number and surface	
	area	%	Areas change of use	
	area	m ² / %	Loss of green areas	
	area	m ² / %	Increase of green areas	
ECONOMIC	quantity	\$	Project cost	Control over project cost and maintenance, the increase of project profit, positive impact on inhabitant's employment, the regional origin of workers and regulation of property price
	quantity	\$	Project annual profit	
	quantity	\$	Maintenance annual cost	
	quantity	"	Project payback time	
	increase/decrease	N° / %	Impact on inhabitant's employment	
	reward	.	Origin of workers	
	quantity	\$	Increase of property price	
E-MOTIONAL	itineraries	N°	Fluxus of people	Diversification of people flows, regulation of the number of visitors, control and adaptation over the number of inhabitants and residents
	increase/decrease	N°	Number of visitors	
	temporality	"	Timing of the project	
	increase/decrease	N°	Number of nights per visitor	
	arrangement	N° / %	Increase of visitors in the region	
	increase/decrease	N° / %	Number of residents	
	increase/decrease	N° / %	Number of inhabitants	

The physical parameters are the easiest to obtain and immediately available for almost all projects. Therefore, they are the starting point for any impact analysis of the transformations examined by the research.

3.2 Economic parameters

The economic parameters seem necessary to evaluate both: the success of the project and some of the dynamics that it may have triggered.

These functional features, from strengths to weaknesses, are present and more visible in cases as the Darsena one. The opening of new massive public spaces inside the cities needs great public investments, must deal with the proliferation of new commercial areas, the increase of property prices and high annual costs of maintenance.

Consequently, on the one hand, spending parameters are proposed, such as the cost of the entire project and its maintenance, as well as the projected return on investment. On the other hand, it is proposed to analyse those development parameters such as the average annual profit of the site after the intervention, compared with the average of previous years, the impact on the number of jobs offered to the inhabitants and the percentage of new workers.

Tab. 2 / Series of parameters to characterise industrial heritage refurbishment projects. Source: Authors (2019)

Economic parameters are more difficult to derive and trace, not least because those provided do not always reflect the truth. In any case, working on this type of data makes it possible to analyse the progress of the project, and also to hypothesise its life cycle.

3.3 E-motional parameters

In addition to the first two categories of parameters, more traditional, it was thought to introduce one that attempts to analyse aspects that have been defined as 'emotional'. This definition is based on considering these parameters e-motional, where the 'e' is the universal symbol of energy and 'motion' implies movement, so e-motional as that put energy into motion.

Either innovative projects -such as Sweets hotel-, or those that count on strong local participation through the years -such as Pont du Gard-, reflect other characteristics apart from the physical or economical to be measured. They are more related to fluxus, function and target hybridisations, respect towards the existing and attention to local necessities.

From this point of view, the first parameter concerns the difference in the fluxus of people; it is directly related to the difference of the number of visitors to the site. To have an idea of the response of the inhabitants concerning the project, it also seems useful to analyse the time taken to complete the conversion and the difference in the number of inhabitants, residents and tourists, the latter for the percentage of overnight stays in situ or the surrounding areas.

The e-motional parameters are, among the three families, those that are more difficult and reliable to find, but still allow to draw a portrait not only quantitative but qualitative, because it is more connected with people and how and how much they use the space.

At the present stage, the parameters identified are at a proposal stage. By trying to apply them on different case studies of different types, it will be possible to test their effectiveness and, if necessary, to calibrate them by adding new ones or remodelling the current ones.

4. CONCLUSIONS

It has been eighteen years since Hospers stated that industrial monuments could be useful for the global service economy. This author believed that this sort of heritage assets could reinforce local innovative policies and businesses (2002). During all these years, industrial sites recoveries had been developed all around Europe, as table 1 showed.

These renovations had been, in one sense or the other, related to tourism as the three case studies exemplify, being the tourist visit the main target of most of them, especially in rural areas. As an extrapolation from them, we can conclude three different considerations.

Rural recovery projects of industrial structures must count on the support of the local community, as well as avoid the full transformation of their way of life. That sort of drastic changes might bring economic improvements in the short term, by affecting the value of authenticity of the site. The loss of authenticity would affect both inhabitants and visitors' sense of belonging.

Industrial engineering scale is sometimes a benefit when talking about dense historic areas with a high number of visitors, such as the Milanese case. Opening this sort of spaces, which were hidden during decades when they were considered undeserving, contribute to new urban de-compressing experiences. These operations also help to read urban layers which show how historically functions were always mixed in the cities.

In the Amsterdam case, the main virtue of the project is its spread. This means, the project capacity to introduce a new function inside a consolidated land and merge it with the existing using sustainable development goals -such as reusing buildings, hybridising urban functions and adjusting tourist industry to current demands-.

These three cases have in common the significant work with their surroundings, the understanding of the project environment in any case. Three positions are possible: to protect it – as in the Pont du Gard-, to confront it – as in Darsena- or to hybridise with it -as in Amsterdam case-. This concerning seems to be essential to implementing a new successful function on an existing place; mainly talking about a predatory service such as tourism.

The contemporaneity of hybrids, made by functionally fluid landscapes and placed in static containers, leads to the construction of unstable habitats, which require rapid and constant adaptation to the needs of inhabitants or tourists. These phenomena often find public administrators and institutions unprepared and even architects, who are often asked to imagine something that is beyond their competence.

The heritage assessment of these historic infrastructures has led to the profound alteration of their environments. The cessation of historical agricultural and livestock activities has occurred in line with their economic growth, based on the tourism sector. In the long term, the lack of control over these changes could result in the inhabitants' loss of feeling of belonging. So, in those places, most of the local, regional or state investments should also focus on intangible values – such as place identity feelings –, which cannot be re-established by tourism strategies.

Perhaps the values supported by 'slow tourism' movements are also necessary for future interventions of significant heritage elements. These interventions would need previously defined parameters, attending to the cases shown. Not only during the development of the recovery project but also during

its functional management. Conscious and comprehensive management would take into account the alterations that these new dynamics imply in the perception of its inhabitants, perhaps determining a new way of intervening.

The three cases already shown, show some of the features that these 'slow heritage' interventions must consider, such as favoring exchanging spaces between locals and visitors, recycling obsolete buildings and supporting local employment while keeping local values and avoiding the loss of authenticity.

Being able to create an open but transparent methodology of slow heritage, that takes into account 'hard' and 'soft' aspects can be considered a well-placed challenge in the scenario of the near future, but also a useful tool to use for those who have the power to make transformational decisions on the territories.

ACKNOWLEDGEMENTS

This study was supported both by the University of Seville and Politecnico di Milano, where the authors respectively work as researchers and PhD students.

REFERENCES

- Alonso, A. D., O'Neill, M. A., & Kim, K. (2010) 'In search of authenticity: A case examination of the transformation of Alabama's Langdale cotton mill into an industrial heritage tourism attraction', *Journal of Heritage Tourism*, 5(1), 33-48.
- Berton, M. (2011): *La prise en compte des populations locales dans la mise en valeur et la gestion touristique des sites culturels l'exemple du site du Pont du Gard* (Doctoral dissertation, Université Paris 1-Panthéon Sorbonne).
- Brumann, C., & Berliner, D. (Eds.). (2016): *World heritage on the ground: ethnographic perspectives* (Vol. 28). Berghahn Books.
- Codara, G. (1977): *I Navigli della vecchia Milano*. Milano, Virgilio.
- De Finetti, G. (2003): *Milano. Costruzione di una città*. Milano, Hoepli.
- De Poli, M. & Incerti, G. (2014): *Atlante dei paesaggi riciclati*. Milano, Skira.
- De Poli, M., & Incerti, G. (2013): *Trasformazioni. Storie di paesaggi contemporanei* (1st ed.). Siracusa, LetteraVentidue Edizioni.
- Del Pozo, B., Solíz Vázquez, L. & González Espina, G. (2018) "De lugar geográfico a destino turístico: análisis, planificación y gestión de los procesos de cambio generados por el turismo". En (coord.) Somoza Medina, J., León. Universidad de León, 171-182.
- Del Pozo, P. B. (2002) 'Patrimonio industrial y cultura del territorio'. *Boletín de la Asociación de Geógrafos Españoles*, (34), 213-227.
- Gioffrè, V. (2019): *Latent Landscape. Interpretazioni, strategie, visioni, per la metropoli contemporanea* (2nd ed.). Siracusa, LetteraVentidue Edizioni.
- Glasl, S., Pool, M., Haccou, T., Hoogerheide S. & Van Schaik, R. (2013): *Sweets - Overview, Insight, Outlook*. Amsterdam, ARCAM Architectuurcentrum.
- Guazoni Edoardo (2020): *La Darsena di Milano*, <http://www.edoardoguazzoni.com/la-darsena-di-milano>, 25/02/2020. Edoardo Guazzoni Architetto.
- Hospers, G. J. (2002) 'Industrial heritage tourism and regional restructuring in the European Union'. *European Planning Studies*, 10(3), 397-404.

- Inti, I. (2019): *Pianificazione Aperta. Disegnare e attivare processi di rigenerazione territoriale*, in Italia. Siracusa, LetteraVentidue Edizioni.
- Labadi, S. (2017): "UNESCO, world heritage, and sustainable development: international discourses and local impacts". In *Collision or collaboration*, Springer, Cham, 45-60.
- Labadi, S., & Long, C. (Eds.). (2010): *Heritage and Globalisation*. Routledge.
- Latouche, S. (2008): *Breve trattato sulla decrescita serena*. Torino, Bollati Boringhieri.
- Lyon, S., & Wells, E. (2012): *Global tourism cultural heritage and economic encounters*. Lanham, Md, AltaMira Press.
- Malara, E. (2012): *Il Naviglio di Milano*. Milano, Hoepli.
- Mas Ibáñez, S., & Sabaté Bel, J. (2013) 'Gestión del patrimonio industrial en la renovación de la ciudad: la experiencia de Terrassa 1959-2011', *ACE: architecture, city and environment*, 7(21), 11-36.
- Mieg, H. A., & Overmann, H. (Eds.). (2014): *Industrial heritage sites in transformation: clash of discourses* (Vol. 6). Routledge
- Mihic I. & Makarun, E. (2018): *Policy Learning guidelines on industrial heritage*. https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1517754714.pdf, 08/01/2020, Interreg Europe, University of Rijeka.
- Norberg-Schulz C. (1979): *Genius Loci. Paesaggio Ambiente Architettura*. Milano, Electa.
- Pardo Abad, C. J. (2017) 'The post-industrial landscapes of Riotinto and Almadén, Spain: scenic value, heritage and sustainable tourism', *Journal of Heritage Tourism*, 12(4), 331-346.
- Perfetto, M. C., & Presenza, A. (2017) 'Conceptualising industrial heritage tourism management', *International Journal of Tourism Policy*, 7(2), 110-128.
- Perfetto, M. C., & Vargas-Sánchez, A. (2018). 'Towards a Smart Tourism Business Ecosystem based on Industrial Heritage: research perspectives from the mining region of Rio Tinto, Spain', *Journal of Heritage Tourism*, 13(6), 528-549.
- Pouverel, B. (1999) 'Reconciling numbers of visitors with the need for protection: the example of the Pont du Gard', *Cahiers Espaces*, (62), 54-58.
- Pouverel, B. (2004) 'Le Pont du Gard après la tourmente...', *Cahiers Espaces*, (216), 9-12.
- Smith, V. (1989): *Hosts and Guests: The Anthropology of Tourism*. Philadelphia, University of Pennsylvania Press.
- Sweets Hotel. (2020): *About sweets hotel history*, <https://sweetshotel.amsterdam/about-sweets-hotel-amsterdam/>, 20/01/2020.
- UNESCO (2009): *Compendium of key decisions on the conservation of cultural heritage properties on the UNESCO List of World Heritage in Danger*. <https://whc.unesco.org/en/158/>, 22/02/2020.
- UNESCO, (2020): *List of World Heritage in Danger*. <https://whc.unesco.org/en/danger/>, 10/02/2020.
- Xie, P. F. (2015): *Industrial heritage tourism*. Channel View Publications.
- Xie, P. F., Lee, M. Y., & Wong, J. W. C. (2019) 'Assessing community attitudes toward industrial heritage tourism development', *Journal of Tourism and Cultural Change*, 1-15.
- Yeoman, I., Brass, D., & McMahon-Beattie, U. (2007) 'Current issue in tourism: The authentic tourist', *Tourism Management*, 28(4), 1128-1138.
- Zhang, C., Fyall, A., & Zheng, Y. (2015) 'Heritage and tourism conflict within world heritage sites in China: A longitudinal study', *Current Issues in Tourism*, 18(2), 110-136.