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MANAGEMENT PERSPECTIVES ON INDUSTRIAL HERITAGE: AN EXPLORATORY RESEARCH

Presentata da: Ekaterina Baskakova

Coordinatore Dottorato

Prof. Riccardo Fini

Supervisore

Prof. Luca Zan

Co-supervisori

Prof. Paolo Ferri
Prof. Pegram Harrison

Esame finale anno 2021

For my mum and dad

Abstract

The current research project focuses on the analysis of the critical issues of industrial heritage management in Italy and the preservation of organizational history within the reuse projects of former industrial sites. The literature analysis showed that there has been a surge of attention to the regeneration of industrial sites in the last decades. However, it seems that the aspect that remains underestimated is the preservation of the intangible heritage (and in particular the organizational history of abandoned organizations) within the new reuse projects.

The organizational and managerial perspective is crucial on two levels. Firstly, it is important in the analysis of the original significance of the site, and in particular its organizational history, and its conservation within the new regeneration strategy. Secondly, it is crucial at the phase of management of reuse projects and its feasibility and sustainability analysis.

Based on the analysis of the literature, a unique classification of the reuse strategies that can be implemented in order to regenerate former industrial sites has been formulated. The exploratory research thus adapts a multiple case study design. Eight Italian case studies have been chosen, one for each type of regeneration strategy: Musealizing, Musealizing into a park, Maintaining the initial use, Transforming into a cultural hub, Public oriented services, Real estate, Launching a new production, Eliminating history.

Firstly, each case study is explored as a stand-alone entity. The analysis focuses on the chronological reconstruction of historical events: both on the history of the former industrial site and on the processes that stood behind the reuse project. This part aims to understand the local differences and idiosyncrasies of the specific context, the factors that stood behind the choice of the particular reuse strategy and the way the reuse project evolved through the years. Then, the current management of each reuse project is analysed by reconstructing its governance structure and financial business model. And finally, each former industrial site is analyzed by looking through the spatial dimension of the reuse projects (change of the space destinations and architectural conservation). The narration and musealization of the organizational history is investigated through the level of content (what part of the organizational history is preserved) and the level of expression (how it is narrated and exhibited).

Secondly, the case studies are compared through a cross-case analysis from three different perspectives: the issues on the phase of preparation and implementation of the reuse projects, the critical issues that stand behind the current management of new projects and the issues on the ways of preservation and narration of organizational history within the new project.

The research shows that all regeneration strategies are affected by the conflict between preservation and change, by the issue of materiality and selectivity.

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1. Introduction

Industrial heritage studies emerged as a discipline in the 1950s-60s and represent a huge field for interdisciplinary research. Architects and engineers discuss questions around the preservation and conservation of material heritage, economic historians talk about the economic development of the industry or the territory, sociologists – about the influence of industry abandonment and possible reuse on the local community. Meanwhile, issues about the preservation of the organizational practices, the know-how of the workers, governance, management and accounting system of the former industrial sites comes under the expertise of organizational scholars.

Industrial sites fall under the process of creative destruction (Schumpeter, 2010). After being abandoned, they represent objects that are no longer needed. However, as soon as their cultural-historical value is recognized, the ideas and values around them change. There are attempts to find new uses for them, from being production sites, they become, for example, tourist attraction sites, museums, residences, public services sites. There is a process of evident re-semantization of the object of the study, where different factors - historical, social, economic, cultural - contribute to the definition of the new value (Balzani, 2007, 2015) of the former industrial sites.

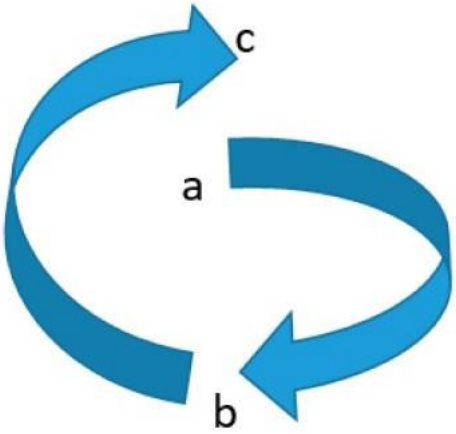
The reuse of industrial heritage can be considered as a process that does not end with the recognition of the testimonial value of a material artifact, but takes place in the all-encompassing act of its reuse. Reuse as a recovery of the historical (material and immaterial) heritage, as a regeneration of functions (social, economic, political), as a re-semantization of signs (Parisi, 2009). Immaterial heritage represents the set of skills, entrepreneurial attitudes, industrial specificities, contextual knowledge, and so on.

Thinking of the regeneration processes of the former industrial sites, it is important to consider not just the preservation of the walls, their physical dimension, but also to explain the organizational history. There are a lot of ways of preserving this intangible dimension, from publishing articles and books on it, to organizing archives. However, in the regeneration processes of the former industrial sites there is a complex interplay between preservation of the intangible heritage and the physical structures. The ways in which the organizational history can be conserved within a museum, within a university or a supermarket opened in a former industrial site is completely different.

This research was born from the idea to understand how the organizational history of abandoned organizations can be narrated within different reuse projects. As a first, the role of the organizational scholars in the regeneration processes of the former industrial sites has to be understood. Zan (2019)

based on the case study of the Venice Arsenal, identified a framework of the relevance cycle of management in the regeneration processes of the former industrial sites (see Figure 1.1).

Figure 1.1. A relevance cycle of management.



> *(a) Management as conducted in the original production processes and its transformations over time until the end of activity; (b) the problem of retaining the intangible significance of the complex in possible reuses; (c) the prospect for the feasibility of management in reuse projects* (Zan, 2019, p. 1186).

The role of organizational scholars is dual. Firstly, they are central in the analysis of the original significance of the site (and in particular, its organizational history) and its conservation within the new regeneration strategy. Secondly, the competencies of organizational scholars are crucial at the phase of management of the reuse projects and the feasibility and sustainability analysis.

Considering the lack of the organizational and managerial perspective in the literature on industrial heritage and the importance of the organizational history preservation, the exploratory research focuses on a single-country study (Italy) and proceeds in the following way.

Firstly, given the lack of the structured classification of the reuse types applied to regenerate the former industrial sites in the literature, this research starts from the explorative analysis of the literature on industrial heritage in Italy in order to reconstruct the discourses that stands behind the emerging phenomenon and to classify the regeneration strategies. Eight different reuse types emerged from this analysis: Musealizing (sites regenerated into museums connected with industrial history), Musealizing into a park (sites regenerated into park-museums in the open area), Maintaining the initial use (sites that have maintained their initial industrial use but are considered industrial heritage

because of their significance), Transforming into a cultural hub (sites converted for cultural uses but not connected to their initial use), Public oriented services (sites converted for public services use, e.g. municipality, university), Real estate (sites converted into a hotel, supermarkets, housing), Launching a new production (sites that are used as a space to launch a new production activity), Eliminating history (sites that were demolished).

Secondly, a multiple case study design was adapted. One Italian case study was chosen for each reuse type identified. The analysis of each case study started with the chronological reconstruction of the historical events: both on the history of the former industrial site and on the processes that stood behind its reuse project. This part aimed to understand the local differences and idiosyncrasies of the specific context, the factors that stood behind the choice of the particular reuse strategy and the way the reuse project evolved through the years. Then, the current management of each reuse project was analysed by reconstructing its governance structure and financial business model. Finally, each former industrial site was analysed looking through the spatial dimension of the reuse projects (change of the space destinations and architectural conservation). The narration and musealization of the organizational history was investigated through the level of content (what part of the organizational history is preserved) and the level of expression (how it is narrated).

This dissertation is structured as follows. Chapter 2 is dedicated to a brief overview of the phenomenon and to the analysis of the literature on industrial heritage in Italy. In chapter 3 the framework for the analysis of industrial heritage is presented. Chapter 4 gives an overview of the methodology applied in this research, as well as indicating case study selection criteria, data collection and data analysis methods. Then, eight case studies are analysed, firstly, as stand-alone entities (chapter 5). Secondly, a cross-case analysis is implemented (chapter 6). The final chapter (7) underlines the main conclusions of the research, as well as contributions and possible directions for future research.

2. An overview of the phenomenon

From 1950s in many countries the society has passed from the industrial to the post-industrial one, the manufacturing-based economy was replaced by the service-based economy. "De-industrialization processes, outsourcing of production in developing countries and obsolescence of some public infrastructures" (Lusiani & Panozzo, 2017, p. 376) have brought to the abandonment of a lot of industrial sites. Initially, many sites were demolished because of a strategy to return to the urban landscape of the city that existed before the industrialization (e.g. Jonsen-Verbeke (1999)). No particular attention was devoted to them apart from their functional dimension. Afterwards, the understanding of the cultural value of such sites increased. In the United Kingdom this happened in the 1950-60s, after a notable case of the Euston Station that was demolished but according to the locals should have been preserved because it was a symbol of the past. In Italy, for example, such awareness grew only in the 1970s. Researchers, policy-makers, urban planners and other cultural professionals have become aware of the tangible and intangible heritage of the industrial period that is valued above all as proof of the extraordinary documentation of this period in human history. It has to be conserved for future generations and its study and restoration can help to understand industrialization.

Along with the increased interest in industrial heritage in the fields of architecture, urban planning, design, art, culture, creativity and economic development (Presenza & Perfetto, 2015), the interest within different international organizations to the subject has increased[1].

The first definition of industrial heritage at the international level was given by TICCIH in the Nizhny Tagil Charter for the Industrial Heritage in 2003. Then it was integrated in the Dublin Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes in 2011[2]:

> *The Industrial Heritage consists of sites, structures, complexes, areas and landscapes as well as the related machinery, objects or documents that provide evidence of past or ongoing industrial processes of production, the extraction of raw materials, their transformation into goods, and the*

[1] 1973 – organization of the First International Conference for the Conservation of the Industrial Heritage in England; establishment of the International Committee for the Conservation of the Industrial Heritage (TICCIH). In 1974, the Committee held the first International Congress; since then such forums have been held every 4 years. In 1999 the E-FAITH, the European Federation of Associations of Industrial and Technical Heritage, was set up. It is an association devoted to cooperation between industrial and technical heritage associations and volunteers in Europe. In 2002 the European Network of Industrial Heritage under the ERIH Interreg II C project was established. The 2015 was announced as the European Industrial and Technical Heritage Year.

[2] Both documents were signed by ICOMOS in collaboration with TICCIH.

related energy and transport infrastructures. Industrial heritage reflects the profound connection between the cultural and natural environment, as industrial processes – whether ancient or modern – depend on natural sources of raw materials, energy and transportation networks to produce and distribute products to broader markets. It includes both material assets – immovable and movable–, and intangible dimensions such as technical know-how, the organization of work and workers, and the complex social and cultural legacy that shaped the life of communities and brought major organizational changes to entire societies and the world in general (ICOMOS - TICCIH, 2011).

The same document states that "the industrial heritage should be seen as an integral part of the cultural heritage in general" but "its legal protection should take into account the special nature of the industrial heritage". This special nature concerns, at first, the fact that the majority of the former industrial sites have never been considered as heritage before they were abandoned. They pass through the process of 're-semantization' (Balzani, 2007, 2015) in sense that from being production sites they become something else and the values attributed to them change. Thus their conservation usually consists of a more complex process that includes, as a first, attributing to the abandoned organization the value of heritage, thus motivating the need of its preservation and only after the process of its conservation and its possible regeneration (e.g. Alfrey & Putnam (1992)).

The definition of industrial heritage explicitly highlights its main dimensions within which are the tangible assets and the intangible heritage. The tangible assets include both immovable (the site and the structures itself) and movable (artifacts, machinery, objects, documents). The intangible heritage in turn includes "traditional craftsmanship, knowledge, practices, and skills relevant to the understanding of industrial processes and the material legacies of industrial production", as was highlighted in the interview by the director of the Ironbridge International Institute for Cultural Heritage, Prof. Mike Robinson (Kapp, 2019, p. 7). It refers, for instance, to the issues of history of the industry and technology, economic development of the industry and also to all issues connected to the organization and management of the former industrial site, of the abandoned organization. If the conservation of the tangible assets can be determined by the international and even more by the national legislation, and public restrictions, the preservation of the intangible heritage is more complex and need a further attention at the phase of redefining potential new uses (Zan, 2019). The intangible industrial heritage and in particular the issues concerning the organizational and managerial practices of the abandoned organizations can be preserved in different ways, such as publishing articles and books, organizing the archives, producing documentary films. But it can be preserved also *in situ*, within the physical structures regenerated for the new uses. However, the ways

in which the organizational history can be preserved within the museum of industrial heritage, the cultural gallery, the university, the supermarket opened in the former industrial site are completely different.

The regeneration of the former industrial sites is not limited just to the fact of recognizing them as heritage sites[3] with both tangible and intangible assets. Oevermann & Mieg (2015a) defines three discourses that stands behind the transformation processes of industrial monuments:

- Discourse on heritage conservation: preservation and conservation of the former industrial sites as the testimonies of the past.
- Discourse on urban development: use of culture and heritage for development. By enhancing urban environment, various stakeholders have interest in generating returns via investment and job opportunities.
- Discourse on the production of architecture: convert existing space into new forms and expressions of architecture. Architectural interventions that go along with partial demolition of the sites.

Only interplay and constellation of three discourses determine the transformation processes.

At first sight, museums of industrial heritage[4] seems to be the most evident way of preserving both tangible and intangible heritage of the former industrial sites. But because of the need of high investment (both for regeneration and maintenance of complex structures in order to keep them accessible), public interest, complex legislation, establishment of such museums as well as large-scale publicly funded projects are the exception (Schaal, 2015). Therefore, the former industrial sites have to be seen as a resource for sustainable re-use which balance the protection, conservation and change of material heritage (Oevermann & Mieg, 2015a).

There is still no general consensus on the international level on the ways of preservation and regeneration of the former industrial sites (see e.g. Oevermann & Mieg (2015)). Industrial areas are being repurposed into the spaces for "culture, leisure, sport, research, education, design, services, production, residences" (Robiglio, 2016, p. 1)[5]. This processes refers mainly to the adaptive reuse (Fragner, 2012; ICOMOS - TICCIH, 2011; Németh & Langhorst, 2014). It assumes that the sites "are not static entities designed simply for one single use during their life cycle" (Lami, 2020) and the

[3] Heritage not in the traditional understanding of cultural heritage, but mainly as a cultural process, "a process, or a performance, in which we identify the values, memories and cultural and social meanings" (L. Smith, 2006).

[4] For more information on industrial heritage museums and their typologies see e.g. (Großewinkelmann, 2012; Negri, 2012; Schaal, 2015; Wallace, 1987).

[5] For overview of different reuse strategies see e.g. Jonsen-Verbeke (1999); for museification and culture-led regeneration practices – e.g. Fu (2012), Lusiani & Panozzo (2017).

content of the new project has to be adapted to the existing container with the criteria of maximum conservation and minimal transformation (Robiglio, 2016).

According to (Stratton, 2000) regeneration works better when based on conservation principles and it is important to find the best strategies concerning different types of projects, their diverse history and conservation possibilities. Various issues that influence the decision making-processes of the regeneration processes are discussed in the previous research. The first one is the location of the former industrial site: if the site is integrated in the city area (e.g. the ancient sites in the historical center of the cities), collocated in the peripheral area of the city or outside of the city walls in the urban area. The second one is the architectural state of the site and the scale of intervention of the project. The third one is potential of the site (in the sense of maximizing both the preservation of the link with the past and adaptation to the new uses) (Da Canal, 2020; Lami, 2020; Robiglio, 2017).

The regeneration process of industrial heritage sites is based on their inclusion in the modern urban environment through their conservation, social adaptation and a maximum orientation of these objects towards the urban space and its social and cultural life, through various transformations and with maximum socio-economic and socio-cultural impact.

2.1. Reconstructing debate on industrial heritage in Italy

This research is positioned in the context of the Italian industrial heritage. Therefore, after a brief overview of the general phenomenon, it is indispensable to understand how the concept of industrial heritage has evolved in the Italian legislation.

The first reference text for industrial heritage in Italy was the Legislative Decree no. 42/2004 (Code of Cultural Heritage and Landscape) which included "mining sites of historical or ethno-anthropological interest" and "typologies of rural architecture with historical or ethno-anthropological interest as evidence of the traditional rural economy" into the definition of the cultural heritage (art. 10). The modification introduced with the Legislative Decree 62/2008 (D. Lgs. 62/2008) included in the definition of the cultural heritage also "immovable and movable things, to whomsoever they may belong, which are of particularly important interest because of their reference… to the science, to the technology, to the industry". National legislation was followed by several laws at the regional level[6]. However, there is no consensus at the national level neither on the

[6] For instance, the Umbria Region introduced the Regional Law 20/03/2013 "Valorization of the heritage of industrial archaeology" (Legge regionale 5/2013), which favors the valorization and promotion of the heritage of industrial archaeology present in its territory, recognizing its importance for culture and regional economic development. A further example is the Apulia Region, with the Regional Law 1/2015 "Valorization of the heritage of industrial archaeology" (Legge regionale 16/2015), promoting the valorization of industrial archaeology through cataloging its assets, valorization and protection and finally promoting tourism.

legislative level, nor on the study and protection of industrial heritage sites as opposed to, for instance, in France. In 1986 the latter launched the nation-wide location survey of industrial heritage and afterwards identified the conservation criteria (historical, quantitative, technological and criterion of noteworthiness) (Smith, 2012). Nevertheless, different Italian regional and local authorities have implemented studies of collection, cataloguing data on industrial heritage sites. Mazzotta (2009) mapped the catalogued industrial heritage sites in Italy: 162 in Abruzzo, 122 in Campania, 276 in Emilia Romagna, 628 in Friuli Venezia Giulia, 100 in Lazio, 812 in Lombardy, 95 in Marche, 100 in Molise, 469 in Piedmont, 509 in Apulia, 175 in Sardinia, 281 in Tuscany, 204 in Umbria, 103 in Valle D'Aosta, 1746 in Veneto. The list is not complete but it gives an overview of the enormous heritage across the whole country and shows the high importance of the phenomenon.

The pre-existing literature shows that there is a lack of an organizational perspective of analysis in the literature on industrial heritage. Therefore, in order to analyse the discourses around the phenomenon of industrial heritage and its regeneration processes in Italy, a unique database based on the articles published in the main Italian journal on industrial heritage *"Patrimonio industriale"* was constructed. It is published by the Italian association for archaeological-industrial heritage (AIPAI), which is the only organization for the protection of industrial heritage of its kind in Italy. It was founded in 1997 by a group of specialists and various Italian industrial institutions. AIPAI's lines of action are study and research, census and cataloging, training, information, dissemination, debate and awareness on the issues of industrial heritage, projects on archaeological and industrial sites and contributions to capitalization processes and networking policy. In 2005, several regional AIPAI sections were opened in order to follow projects at the regional level ("Associazione Italiana per Il Patrimonio Archeologico Industriale," n.d.).

The *Patrimonio Industriale* journal exists since 2007 and is published one or two times per year. In total 16 issues were published from 2007 to 2018. Each issue consists of an average of 29 articles and is dedicated to a specific theme (e.g., 1978-2008. Industrial archaeology in Italy; The colonies for children in the fascist Italy; Cement plants in Italy)[7]. Every issue is divided into different sections, such as essay articles, safeguarding and protection of industrial heritage, documents and research, archives and museums, AIPAI activity agenda, information on exhibitions, conferences, calls and competitions, book reviews, university theses, information on various websites and information from the regional sections.

A constructed database was built up from the journal articles, which focus on single or multiple case studies analysis. In total, 88 articles were chosen out of 475 (list of selected articles can be found

[7] The complete list of the issues can be found in the Appendix 1.

in the Appendix 2). The articles not focused on case studies but instead on the general analysis of economic development of the area (region, state), were not taken into consideration. Also the articles concentrated on the analysis of the industries without case study analysis along with the international focused articles, were not considered by this analysis.

The database contains information on the articles' summary, the author's background, specific information on the industrial sites, e.g. their geographical location, the type of industry it belonged to, information on the reuse type of the former industrial site and some particular criteria that represent the values of these sites that will be described later on.

The analysis of the database evolved in two directions. The first one is dedicated to the overview of the regeneration strategies of the former industrial sites. It seems that the literature lacks a full classification of different reuse strategies that could be implemented in order to regenerate former industrial sites. Therefore, in order to be able to analyse the ways in which the organizational history can be preserved, an overview of all possibilities for regeneration has to be understood.

Considering the huge variety of industrial heritage types, the analysis started from classifying them according to their initial use[8]. Having such a high variety of types of industries means, firstly, dealing with different historical backgrounds of each industry and each concrete site, and, secondly, the different possibilities of the reuse strategies based on the material composition of the site. These are usually sites of huge dimensions, that differ by close/open spaces, buildings (e.g. workers housing), huge open sites (e.g. railroads), complex sites with an underground part (e.g. mining sites).

The type of industries does not directly affect the choice of the regeneration strategy, rather the geographic position (e.g., in/out of the city center, near/far from the seaside) and the size of the industrial site (e.g., the sites of a huge dimension usually are objects for the tourism-focused reuse or mixed use)[9].

A unique classification of the reuse strategies that can be implemented in order to regenerate former industrial sites was formulated. It was a dynamic, iterative process that evolved step by step by a constant comparison between the data and the categories.

Finally, the following classification of the reuse strategies has emerged[10] (the examples from the database are indicated for each category):

- *Musealizing:* sites regenerated into museums connected with industrial history, e.g., Magma - new iron and cast iron museum in Follonica (Grosseto) in the former furnace; the Giovanni Mucci

[8] The HAER classification was taken as the reference (DeLony, 1999; Falser, 2001).

[9] This is aligned with the pre-existing research, see e.g. (Lami, 2020) on the regeneration of the abandoned buildings.

[10] The number of cases for each regeneration strategy is listed in the Table 2.1. It does not show the significant number of cases for each category but it served to have an overview of all possible categories.

candy museum in Andria in the former candy factory; the Shipbuilding museum of Monfalcone (MuCa) in the former workers' hotel of the company town build around the shipyard; the Piegaro glass museum in the ancient glass factory.

- *Musealizing into a park*: sites regenerated into touristic sites. These are usually former mining parks, like the mining park in Val Graveglia; the Tuscan mining geopark; the Floristella-Grottacalda mining park; or other open sites like the water supply system in Trento as a part of the Paneveggio - Pale di San Martino Nature Park.
- *Transforming into a cultural hub:* reuses dedicated to cultural projects but not connected to their initial use like contemporary art galleries, e.g., Ugo Marano Art Museum in the former iron foundry; Mario Merz Foundation – Center for Contemporary Art in the former Lancia factory; OGR Torino in the former repair center for locomotives and railway carriages.
- *Public oriented services:* reuses dedicated to public services use, such as municipality, university (e.g. Bicocca University in Milan in the area of ex-Pirelli), health care and rehabilitation centers in the former holiday camps in Rovegno and Montemaggio in Liguria.
- *Real estate:* sites that have been converted into a hotel, such as the Towers Hotel Stabiae on the Sorrento Coast in the former cement factory in Pozzano (Naples) or the Hilton Molino Stucky Venice in the former flourmill in Venice, supermarkets (e.g. Eataly inside the former vermouth plant in Turin), housing.
- *Launching new production*: former industrial sites used as spaces for the new production activity, e.g. Franco Tosi Shipyard in Taranto.
- *Maintaining the initial use*: sites that have maintained their initial industrial use but are considered industrial heritage because of their significance, e.g. cement plant in Spoleto; Taranto arsenal; furnace of the S.I.A.I. of Petacciato Scalo.
- *Eliminating history*: former industrial sites that were demolished, e.g., the blast furnace in Piombino, the wool mill in Frosolone.
- *Forgetting:* sites in a state of total abandonment both of material and immaterial heritage.

A high number of the cases in the database represent abandoned sites. This category was not included in the classification because it is not considered as a regeneration strategy. Nevertheless, the number of the abandoned sites from the database is indicated in the Table 2.1, as well as the number of the cases for which the information was not available.

In order to understand how the reuse of former industrial sites discussed in the magazine has evolved after the publication of the articles, the actual reuse status of these sites was verified. The number of the cases for each category is presented in the last column of the Table 2.1. Also here the

numbers are represented not to show any significance but in order to give a preliminary idea of the direction in which the situation has been evolving in the last years.

Table 2.1. Classification of the reuse strategies.

	Type of reuse strategy	Number of cases (reuse in the article)	Number of cases (current status of the reuse project)
1	Musealizing	11	13
2	Musealizing into a park	7	9
3	Maintaining the initial use	14	16
4	Transforming into a cultural hub	5	11
5	Public oriented services	5	2
6	Real estate	5	6
7	Launching a new production	1	2
8	Eliminating history	2	4
	Forgetting	26	14
	Information not available	18	17

The analysis of data from the database shows that a high number of case studies were focused on the abandoned sites, probably, in order to give them more visibility. And in fact, the current situation shows that the number of abandoned sites has decreased more than twice, while cultural-led reuses (e.g. reuse in the form of museums connected with industrial history of the site, tourism-focused sites, cultural hubs) have increased.

This analysis of the discourses on reuse strategies is a first step in understanding the relationship between organizational history's narration and physical structures.

The second part of the database analysis is dedicated to the analysis of the discourses, the hidden dimensions that stand behind the motivation for conserving former industrial sites. After careful study of all articles, three reasons for conserving such sites and values attributed to them were identified:

- Architectural dimension,
- Economic development of the area and
- The importance of the working conditions and practices.

The first one is the architectural aspect. It refers to the importance of the architectural characteristics of the site, the architect itself, the special particularities of the building, the structure

and spaces, the importance of tangible dimensions of the site. The following contributions from the database seem to have such perspective (title/citation translated, originals in Italian):

- *"Impressive building of industrial architecture"* (Arrigoni et al., 2014).
- *"Very complex structure and of extraordinary archaeological value"* (Arrigoni et al., 2014).
- *"An abandoned industrial site of considerable historical, architectural and landscape interest"* (De Maestri et al., 2014).
- *"Industrial architecture in the Bormida valley: SIPE and the architect Cesare Mazzocchi"* – importance of the architect (Manzini, 2013).
- *"The parabolic pavilion of the former SIR is one of the most significant examples of industrial architecture"* (Santarella, 2013).
- *The architectural form and name of the architect - Pier Luigi Nervi* (Castellano, 2013*).*

This tangible dimension appears more frequently in the description of the cases. The major part of the authors considers it as the most representative of the case. On one hand, it is essential for the site's conservation but on the other, there is the risk that it can become the only reason and important aspect for the reuse strategy, as if the former industrial site had been constructed as an architectural heritage with no other historical, economic or social reason.

The second aspect is the importance of the former industrial site for the economic development either of the city, or of the province, region or even the whole country or for the economic development of the industry. The following contributions from the database seem to have such perspective (title/citation translated, originals in Italian):

- *"The importance for the Italian steel industry"* (Galli, 2014).
- *"The potential of the territory"* (Maddaluno & Monte, 2012).
- *"Historical-economic value of the industrial site as part of an important political, economic and legislative change for the agricultural world."* (Pineiro, 2011).
- *"Of the great importance for the economy of the area"* (Del Prete, 2011).

This is a macroeconomic dimension, which represent the relevance of the sites in economic history, in economic development, its impact on the territory at different levels. This dimension also appears very frequently in the literature.

The third aspect is the importance of the working conditions, organizational practices. The following contributions from the database seem to have such perspective (title/citation translated, originals in Italian):

- *"Even the workers contributed actively during this phase by deciding to renounce the increase of ten lire in hourly pay to allow the ownership to face the costs incurred. On the other hand, they knew very well that their survival was linked to the survival of the cement factory that continued to produce for many decades until the final closure in 2008. The life of those who lived here was closely linked to the establishment"* (Bottini, 2014).
- *"Generations of miners who through a hard and dangerous job, and sometimes with the loss of their life, have contributed, significantly, to the first birth and then the development of the Italian chemical-mining sector"* (Rappuoli et al., 2017).
- *"Through one case study we intend to understand the technology used for industrial exploitation, business organization, entrepreneurial figures and management of the mass of workers, putting them in relation to the economic, political and social conditions of the period"* (Di Gregorio, 2014).

There is a lack of attention in the literature on the preservation of the intangible dimensions of former industrial sites – the organizational practices, its management and accounting system, the organizational structure, the know-how of the workers. This intangible dimension is underestimated in the literature and in the choice of the reuse strategy also because of the authors' background: 53% of the authors come from the field of architecture (architectural techniques, history of architecture, urban planning, engineering, architectural restoration and geology); 34% of the authors are from the human sciences field (history, arts history, archaeology, cultural heritage and tourism, industrial heritage, local policies, journalism, archival studies) and just 13% of the authors are from the field of economics and management studies (but the majority of them are economics and management historians and not organizational scholars).

3. Framework for understanding industrial heritage

The research starts from the idea to understand how the organizational history of abandoned organizations can be narrated within different reuse projects. This question can be analysed only if embedded in the overall analysis of the (former) industrial site before its abandonment and after, through understanding the original significance of the site (and in particular, its organizational history) and its preservation in the new reuse project, the local context in which the site is located which helps to understand the processes that stand behind the choice of a particular reuse type, the evolution of the reuse project, its feasibility and sustainability.

The next paragraphs are dedicated to the analytical framework that will help to undertake analysis in this research. It has to be pointed out that the framework used in this analysis is not theoretical (the one that through different theories helps to explain the phenomenon), but more analytical (explain how the analysis will be conducted).

The first section is dedicated to the positioning of the current research in respect to the literature on organizational history (para 3.1). The second and the third sections present the framework for the analysis of feasibility of reuse projects based on two concepts: governance structure (para. 3.2) and financial business model (para 3.3). The last section proposes the framework for the analysis of narration and musealization of organizational history within the reuse projects (para 3.4).

3.1. Organizational history

The literature on industrial heritage preservation raises various issues, like preservation of tangible characteristics of former industrial sites, ways of conservation of spaces and structures, ways of including them in the urban development strategy and the strategies of regeneration of these spaces. Instead, there is a lack of literature on the preservation of the intangible dimension of the former industrial sites, such as preservation of their organizational history. Through the regeneration processes, the former industrial sites become new organizations but only the historical analysis can help to "interpret existing organizational structures not as determined by laws but as the result of decisions in past choice opportunities, some of which were made intentionally and others more implicitly" (Kieser, 1994).

Studying organizational history means understanding how the organization was working, what were the organizational practices, the management and accounting system, the organizational structure, governance, the know-how of the workers (e.g. Zan (2004) on the accounting and

management discourse in the Venice Arsenal in XVI century; Macintosh & Quattrone (2010) on the case of the Society of Jesus). Organizational history is a field of research in organizational studies that combines history and organizational theorizing (Godfrey et al., 2016). But the majority of the research in organizational studies on organizational history is dedicated to study of still functioning organizations: how history can be and often is manipulated to serve top management's interest (Rowlinson & Hassard, 1993; Casey & Olivera, 2011), how organizational actors use history in the process of addressing organizational identity (e.g. Ravasi & Schultz, 2006; Stigliani, 2007; Kroezen & Heugens, 2012).

There is a stream of the literature on one preservation of the organizational history of the industrial sites in a form of corporate museums (e.g. Danilov, 1992; Duncan, 1994; Nissley & Casey, 2002). Nissley and Casey (2002) talk about how organizations (in the case of corporate museums) choose what has to be exhibited ("politics of remembering") and what is not exhibited ("politics of forgetting"). The authors also noted that "memory is prompted by the exhibited artefacts and seeks to create meaning about what is important from the past".

The study of how the preservation of organizational history of former industrial sites is important, differs from the study of corporate museums. Corporate museums represent the organizational history of still functioning structures. They are in charge of deciding what has to be exhibited and what cannot be manipulated by top managers for marketing reasons or in order to create a specific organizational identity. In the case of the abandoned industrial sites there is no need of such manipulations.

Thinking of the regeneration processes of the former industrial sites, it is important to consider not just the preservation of the walls, their physical dimension, but also explain the organizational history. There are a lot of ways of preserving this intangible dimension, from publishing articles and books on it, organizing the archives, etc. However, in the regeneration processes of the former industrial sites there is a complex interplay between preservation of the intangible heritage and the physical structures. The ways in which the organizational history can be conserved within a museum, within a university or a supermarket opened in a former industrial site is completely different. Understanding ways of narrating the organizational history of sites within such structures is one of the questions of this research.

3.2. Governance structure

In order to fully understand how industrial heritage regeneration projects function, it is important to discover how their activities are managed and coordinated.

There is a little agreement in the literature on what governance is. On one hand, in corporate management studies governance refers "to the whole system of rights, processes and controls established internally and externally over the management of a business entity with the objective of protecting the interests of all stakeholders" (Centre for European Policy Studies, 1995). On the other hand, in more political approach governance is defined as "the self-organizing inter-organizational networks characterized by interdependence, resource exchange, rules of game and autonomy from the state" (Rhodes, 1997)[11].

Industrial heritage reuse projects vary from being totally private, totally public and mixed (a mixed version can have a "soft" or "strong" involvement of the public sector[12]). Therefore, both corporate management and political sciences perspectives on governance can be incorporated in the industrial heritage management studies. Both perspectives stress the importance of the multiple stakeholders' involvement (e.g. Kjaer, 2004; Rhodes, 1997; Stoker, 2018). Moreover, the studies on the cultural heritage management shows that in order to increase the likelihood of plans being realized, there is a need for a cooperation and close interaction among the stakeholders (Allaert & Ludtke, 2007; Dewulf et al., 2013; Kosmala & Sebastyanski, 2013; Lusiani & Zan, 2013).

Governance of the industrial heritage regeneration projects has its complexities not only because of the involvement of different stakeholders, but also because of not clear legislation, conflicting logics and often conflicts of jurisdiction. Industrial heritage finds itself as a quiet new field with different roles and professional traditions inside, with the opposition of private to public both in the sense of property and management, in the middle of different sectors with their own legislations, such as urban planning, cultural and natural heritage, archaeology. There is no single governance model within different industrial heritage regeneration projects because of the various approaches used. One of the peculiarities of the industrial heritage is that its value is of a great importance to the specialists of different professions: these are heritage workers, architects, builders (equipped with aggressive techniques), investors (including developers, commonly with no personal relationship to the resulting use), community (which means having people with a great passion but usually no background in heritage or understanding of management issues) (Fragner, 2012).

The cooperation between the various actors (both public or private) can be formalized by the formal or informal agreement and by the type of cooperation, e.g. joint ventures, informal cooperation agreements. These collaborations can align the conflicting values of heterogeneous stakeholders by

[11] For more detailed review of two approaches see (Ruhanen et al., 2010).

[12] The common one in Europe recently is an interactive planning, in which the public authority no longer has a monopoly on decisions but carries out tasks of policy guidance and coordination within a cooperative and pluralist decision-making process (Preite, 2012).

assigning the disposition of roles and responsibilities between them (Dewulf et al., 2013). For instance, Swensen and Stenbro (2013) studied the transformation of three Norwegian industrial areas and found out that all "regeneration projects are run by a cooperation between public and private partners, but the role of public parties changes according to the jurisdictional level (State, Region or Municipality) and to the stage of their intervention in the process".

The industrial heritage regeneration projects often involve the local community at the stage of reuse alternatives selection (Cossons, 2012; Preite, 2012). In Italy the local community has been sometimes engaged in order to raise awareness to the site and not destroy it. In some European countries the role of participatory governance is important also at the phase of projects' preparation and even management of the heritage (Cortés-Vázquez et al., 2017; Nitzky, 2013; Turnhout, et al., 2010; Watson & Waterton, 2010). "Sometimes the very aim of preventing destruction or preserving a given heritage site may unite many actors around a common aim and at the same time help them to get to know each other, develop trust and stronger links" (Murzyn-Kupisz & Działek, 2013).

The literature review on industrial heritage literature in chapter 2 showed that in Italy former industrial sites regenerated into industrial heritage museums are mostly managed by the public authorities. Since 2008 industrial assets are recognized as cultural assets (D. Lgs. 42/2004, modification of 2008) the management of industrial heritage reuse projects benefits from the possibilities introduced for the cultural heritage organizations by various reforms: outsourcing of the additional services to the private sector operators (Legge 4/1993), devolution of the State functions to local authorities (D. Lgs. 112/1998; Legge 59/1997), managerializaton of local branches of the ministry by creation of the Superintendences and later the Museum hubs (Regional centres for cultural sites), privatization (possibility of selling the Italian state heritage) (a very criticized law 448 fo 2001 (Legge 448/2001)[13]. "Nevertheless, the model of government remains very centralised, although this most likely is because of the not fully defined role of the regions, which instead ought to be the central link in the overall organization" (Barile & Saviano, 2015).

Considering all particularities of the field, in this research governance is understood as "the solution designed to manage and coordinate the activities of an organization" (Zan et al., 2015) what includes:

- Legal form (public, private, mixed),
- Institutional organization of the bodies involved,

[13] For a review of this four novelties see Zan et al. (2007).

- Analysis of the involvement of various stakeholders (private companies, public administrations of various levels, e.g. regional, local administrations, Superintendence, Regional centers for cultural sites), their rights and the existing forms of influence,
- Roles and responsibilities of all involved actors ('who does what', how the organization is structured in departments, units), interdependence,
- The power structure (how the top management is organized, who takes decisions) (Baraldi & Salone, 2020; Ruhanen et al., 2010; Zan et al., 2015).

The current research looks through the different practices of the industrial heritage reuse processes in order to discover different complexities of institutional settings in the field and to understand if governance structure of the new organizations influence the preservation of the organizational history of the abandoned organizations.

3.3. Financial business model

The literature on industrial heritage is mainly focused on storytelling of the history of former industrial sites and of their reuse possibilities, on legislation procedures, sometimes on the analysis of stakeholders. But there is a clear lack of the literature on what happens when the former industrial site is regenerated, how the reuse projects operate, what are the business models that stand behind the new reuse projects and if these projects are sustainable.

The definition of business model is still questionable (e.g. Shafer et al., 2005). In this research business model refers to a 'view of the firm's logic for creating and commercializing value' (Osterwalder et al., 2005; Teece, 2010) and as 'a system of interdependent activities that transcends the focal firm and spans its boundaries' (Baden-Fuller & Mangematin, 2013; Baden-Fuller & Morgan, 2010; Zott & Amit, 2010).

Financial sustainability is a major issue in heritage conservation processes (Zan et al., 2015). And it is "one of the underlying conditions and at the same time one of the most critical for the development of regeneration experiences" (Baraldi & Salone, 2020). In order to understand if the new reuse project is financially sustainable, it is essential to reconstruct money sources, their destination, the possible dynamics of cross-subsidizing.

The literature proposes several components of the business models (Baden-Fuller & Mangematin, 2013; Osterwalder & Pigneur, 2010).

The first component relevant for this research is value proposition. It refers to the "products and services that create value for a specific customer segment". Often regeneration projects of the former

industrial sites represent mix uses with very different activities (e.g. museum and supermarket in the same building) with contrasting values they bring to the customers. The variety of the potential (sometimes conflicting) uses of the sites can be grouped as in (Zan & Yu, 2018) in three categories: site as a "cultural heritage (knowledge and conservation)", "site for visits" and "site for other activities" (e.g. hospitality, public services, commercial activities, industrial activities). This component is relevant in connection with identifying of the customers. The elements that can contribute to the value creation are e.g. newness of the activity, its performance, design, price, accessibility (for instance, making accessible the former industrial site for the local community who perceived it always as a closed venue) (Osterwalder & Pigneur, 2010).

Key activities are the second component of the business model – that refers to the main activities and services that are offered within the new regeneration project and if they are aligned with the initial aim of the project.

The third element of business model is revenue streams which refers to the ways money is raised. This element is considered together with the main costs. In the heritage and also in general in the field of industrial heritage regeneration, one of the most important issues is the distinction between capital and operating revenues. Capital revenues are the investment that are used in the phase of the project realization for conservation and preservation of the site. Operating revenues are the ones that are needed when the project is realized in order to keep in "alive". "The lack of attention to the different implications of investments and current costs is an ever-present issue in the field, for the cycle of politicians and the ego of politicians and directors tend to focus on short-term investment, rather than future conditions of action and responsibility" (Zan et al., 2015). The analysis in this research will focus both on capital revenues (type of investments and their conditions, investment sources) and on operational revenues (with attention on income gap (if present), and who covers it).

The current research seeks to understand how different business models affects the way organizational history of the abandoned organizations is preserved within new reuse projects.

3.4. Spatiality and visuality analysis in the organizational studies

In the regeneration processes of the former industrial sites there is a complex interplay between preservation of the intangible heritage and the physical structures. It is therefore evident that the relationship between spatiality and conservation of the immaterial industrial heritage is central to investigate in order to reconstruct the narration of the organizational history of these sites.

The relevance of the 'space' has already been highlighted in the organizational studies. Spaces are considered as settings for organizational acts and storytellers that communicate values, beliefs

and feelings using vocabularities of construction materials and design elements (Polanyi, 1966; Yanow, 1995). Organizational spaces are significant to human meaning-making and therefore to organizational practices, and interpretative methods provide ways of studying them (Yanow, 1998). In order to analyse 'spaces' of the former industrial heritage buildings and to be able to gather their main characteristics, in addition to analysis, semiotics methodology can be applied, and in particular the semiotics of space since its underlying assumption is that spatiality communicates and is articulated as a language (Giannitrapani, 2013). And as a language, spatiality is the relationship between level of expression (e.g. physical properties such as dimensions, heights, depths, full and empty) and level of content (e.g. organizational structure and practices). In fact, the former industrial heritage sites are physical and spatial representations of former organizations with their particular social structures and its analysis is important to understand the organizational history and to further reconstruct the ways in which it can be narrated.

Furthermore, the spaces retain traces of relations, of social relations, the ways society has organized itself (Greimas, 1991). The sense of space is constructed on the relationship between practices, objects and subjects. Space is constitutively linked to subjectivity. The analysis of the articulation of spatiality helps to narrate who are the actors involved and how their relationship should be interpreted. The analysis of spatiality therefore allows us to shed light on the organizational practices and the organizational structures of former industrial sites.

The space of the structures (museum, any other site) is considered to be as important as the content (Lefebvre, 1991; Munro & Jordan, 2013; Pezzini, 2011). Therefore, the 'containers' should be analysed with the same attention of the 'content'. The content of the site has to be analysed simultaneously with the analysis of spatiality, and its historical component. The object of the analysis in this sense should be considered as a syncretic text with multiple languages at the same time (they can be in dialogue, in conflict, in contradiction with each other). That is the reason why in the analysis of the former industrial sites different discursive levels have to be considered: exhibition (how), objects (what) and architectural discourse (where) (Hammad, 2006), in order to understand how they coexist within the new reuse strategy.

Simultaneously with the analysis of the spatiality of the former industrial sites, the analysis of the textual dimension with which the organizational histories of these sites can be narrated inside the physical spaces, is addressed. The textual dimension is articulated into the level of content (what is narrated) and the level of expression (how it is exhibited). An important aspect of the level of expression for this research is the visual dimension. Organization and management science has only recently started to pay closer attention to the 'visualization' of and within its domain (Becker, 1995; Kunter & Bell, 2006; Meyer, 1991; Meyer et al., 2013; Preston et al., 1996). The visual mode is

created, transformed, transferred, and put into practice by either the use of primarily visual objects and artifacts, or by integrating the visual and the verbal in such a way that neither can be fully understood without the other. Images and visual artifacts are not just add-ons to verbal texts, mere transmitters of information, or means of communication: they have become an elementary mode for the construction maintenance, and transformation of meaning. The meaning of artifacts is tied to the specific cultural contexts in which they are used; they represent visual manifestations of social knowledge and practice (Meyer et al., 2013). Contemporary organizations increasingly rely on images, logos, videos building materials, graphic and product design, and a range of other material and visual tools and expressions to compete, communicate, form identity and organize their activities (Boxenbaum et al., 2018). The current analysis is concerned with highlighting the main communication strategies produced by the visual language. From an operational point of view, the research analyse visual texts in themselves (e.g. a photograph, a video, a company brand, a map) in order to understand how and what they manage to communicate and to get different effects of meaning. Furthermore, the analysis takes into consideration the visual language also in relation to other forms of expression (e.g. verbal, sound) to understand the overall effects of meaning.

4. Methodology

The current research project is dedicated to the processes behind the management of reuse projects of former industrial sites and the ways the organizational history of abandoned organizations can be preserved within these reuse projects. It adapts the perspective of a process study of organizing which sees reality as a set of processes and not as a group of objects. This perspective reconstructs and tells the story of events, focusing on the continuous change that unfolds and develops among them (Van de Ven & Poole, 1995). The process study of organizing perspective does not seek to find the causal factors that explain social events but alternatively explain how it happened, what happened, what results it brought about, what were the initial objectives.

The analysis is implemented through an exploratory study based on multiple-case design. The research of the qualitative nature will collect both qualitative and quantitative data mainly through the field research predominated by the ethnographic approach, understood more like a genre than a method (Brannan, 2012; Watson, 2012).

In the next paragraphs the case study selection criteria will be presented, as well as data collection and data analysis processes.

4.1. Case study selection

The choice of the cases was based on the classification of the reuse types identified in the chapter 2: eight case studies, one for each type of regeneration strategy: Musealizing, Musealizing into a park, Maintaining the initial use, Transforming into a cultural hub, Public oriented services, Real estate, Launching a new production, Eliminating history.

The selection of the case studies was based on several criteria. Firstly, case studies have to represent sites with a significant industrial history already discussed in the literature in order to have a higher data availability. Secondly, the reuse projects of the sites have to be already completed in order to have a wider range of available data and to be able to analyse the current management of the sites and economic sustainability of the reuse projects. Thirdly, the choice of case studies was based on the possibility of the easy access to the field.

In order to better formulate the research questions and the logistics of the field inquiry a pilot case study was run (Yin, 1994). As a pilot case the reuse project of the Former Florio plant in Favignana was chosen. It seemed a suitable setting as its reuse represents a best practice of organizational history conservation. The inquiry for the pilot study was broader (e.g. the field visits were longer and better structured, more professionals were interviewed) than in other case studies. It helped to understand

better what issues have to be addressed, how to select the data in the other case studies, how to structure the interview protocol.

The selection of the other case studies was based on the determining examples of already regenerated sites from both academic and professional literature. The cases were not selected exclusively from the database described in the chapter 2 which merely aimed at reconstructing the debate. Several interviews with academics and professionals from the field were run in order to identify case studies for each reuse type. The list of the selected case studies is presented in the Table 4.1.

Table 4.1. List of case studies.

	Reuse type	**Description of reuse type**	**Case study**
Case study 1	Musealizing	Sites regenerated into museums connected with industrial history	Former Florio plant in Favignana
Case study 2	Musealizing into a park	Sites regenerated into park-museums in the open area	Archaeological Mines Park of San Silvestro in Campiglia Marittima
Case study 3	Maintaining the initial use	Sites that have maintained their initial industrial use but are considered industrial heritage because of their significance	*Manifattura dei Marinati* in Comacchio
Case study 4	Transforming into a cultural hub	Sites converted for cultural uses but not connected to their initial use	*Officine Grandi Riparazioni* in Turin
Case study 5	Public oriented services	Sites converted for public services use, such as municipality, university	Santa Marta Military Provisions Centre in Verona
Case study 6	Real estate	Sites converted into a hotel, supermarket, housing	Cazzola Woollen Mill in Schio
Case study 7	Launching a new production	Sites reused as a space to launch a new production activity	Ex Fratelli Bosio's knitwear factory in Sant'Ambrogio di Torino
Case study 8	Eliminating history	Sites that were demolished	The blast furnace 1 (Afo1) of the Lucchini Steelworks in Piombino

Moreover, the selected case studies are representative from the point of view of the management and governance systems of the reuse project. Half of the sites are publicly coordinated and the other half privately.

4.2. Data collection

The inquiry for each case studies was focused on three main issues: reuse project (the choice of reuse strategy, its research and implementation phases), musealization of organizational history of former industrial site and current management processes of the reuse project.

Before entering to the field, some preliminary deskwork was conducted for all case studies. It included primary analysis of the information about the site and its reuse project from both academic and professional literature. This helped to understand the main streams of the research connected with the particular site and the most important characteristics of the site that were highlighted by the literature trying to recognize the motivations of the site's preservation (architectural dimension, importance of the site for the economic development of industry or area, importance of working conditions and practices).

Once in the field, the data was collected through various sources: interviews, documents and observations. The semi-structured interviews were conducted in order to deepen the knowledge on the concept of the project, on its objective, motivations that stand behind the choice of the particular regeneration strategy, reuse alternatives that were considered, particularities of the current management and the issues of intangible heritage that were preserved within the new reuse project. For each case study several interviews were conducted. The first type of the interviews was based on a narrative interview approach (Czarniawska, 1998; Jovchelovitch & Bauer, 2000) which helped to understand the main important issues for each case study. The general interview protocol is reported in the Appendix 3. The second type of the interviews was based on the focused interview approach (Kenneth, 1994). They were run after the analysis of the data collected through the field visits in order to deepen the knowledge on the projects through more specific questions. The information on the field visits and the list of the collected interviews are reported in the Table 4.2.

The observations were dedicated to the collection of data on the spaces of the former industrial sites (which spaces of the former industrial site are regenerated, external and internal spaces, their size, disposition of different spaces, transition between them and their accessibility, past and present space destinations), on the artifacts (what is disposed, how it is arranged within the site, how the artifacts represent the history of the former industrial site), as well as on all supporting materials *in situ* like descriptive panels, audio and video support, illumination. During the field visits, photos, videos and audio registrations were collected, when necessary.

The documents collected for all case studies were on the history of the site (e.g. books, articles), on the reuse project (e.g. Masterplan, financial information, various conventions) and on the current management (e.g. budgets, various conventions and contracts, reporting documents, presentations).

Table 4.2. Field visits and interviews carried out during the research project.

	Field visit (date)	Interviewed (date)	Additional information
Former Florio plant	1st visit to the site (May 13-17, 2019); 2nd visit to the site (October 13-18, 2019)	- Director of the Regional Pole of Trapani and Marsala for Cultural Sites (May 15, 2019); - Official of the Superintendence for Cultural and Environmental Heritage of Trapani (interview 1 - September 13, 2019; interview 2 - October 18, 2019; interview 3 - November 13, 2020); - Collaborator of the Municipality of Favignana (October 15, 2019); - Mayor of the Municipality of Favignana (October 16, 2019).	Participation to the guided tour to the museum (May 14, 2019)
Archaeological Mines Park of San Silvestro	Visit to the site (November 26, 2019)	- Director of the Val di Cornia Parks S.p.A. (November 26, 2019); - Coordinator of the Archaeological Mines Park of San Silvestro (interview 1 - November 26, 2019; interview 2 - October 9, 2020)	Participation to the meeting of the National Network of Italian mining parks and museums at the site (December 13-14, 2019)
Manifattura dei Marinati	Visit to the site (January 16, 2020)	- President of the social cooperative "Work and Services" (interview 1 - January 16, 2020; interview 2 - November 6, 2020); - Official of the Regional Park of the Po Delta (October 15, 2020)	
Officine Grandi Riparazioni	Visit to the site (December 10, 2019)	- Responsible of the educational department (December 10, 2019); - Planning and control manager (December 7, 2020); - Former technician of the OGR (December 8, 2020).	
Santa Marta Military Provisions Centre	1st visit to the site (December 19, 2019); 2nd visit to the site (January 13, 2020)	- Technical officials of the University of Verona (December 19, 2019); - Coordinator of the exhibition and professor of the economic history (January 13, 2020).	
Cazzola Woollen Mill	no	- Official of the construction company "Zermiglian Costruzioni" (interview 1 - October 15, 2020; interview 2 - November 11, 2020) .	No field visit because of the Covid-19 emergency
Ex Fratelli Bosio's Knitwear factory	no	- Founder of the San Michele Brewery (October 20, 2020).	No field visit because of the Covid-19 emergency. Participation to the online press conference of the "Torino Heritage" project (November 2, 2020)
The blast furnace 1 (Afo1) of the Lucchini Steelworks in Piombino	no	no	Considering the nature of the site, there was no need for a field visit.

In addition, the promotional material on the sites was collected (e.g. website, social media, promotional videos, brochures, guidebook) in order to understand how the conservation and the narration of the former industrial site is positioned, which aspects of the site are brought to the light, how the site is presented and narrated.

Only through collection of different data it is possible to understand all the aspects of the history of the former industrial sites, of the reuse project, its current management and how the organizational history of the site is preserved and narrated.

For all case studies at least one field visit, two round interviews and collection of various documentation were carried out. For several case studies there was a need of a second field visit. Unfortunately, because of the Covid-19 emergency the field visits were not possible for two case studies (Cazzola Woollen Mill in Schio; Ex Fratelli Bosio's Knitwear factory) and all the data for them was collected remotely. The collection of the data on the last case study (The blast furnace 1 (Afo1) of the Lucchini Steelworks in Piombino) was based only on the analysis of the literature.

4.3. Data analysis

Firstly, each case study is explored as a stand-alone entity (Eisenhardt, 1989; Miles, 1979). Secondly, the case studies are compared through the cross-case analysis (Eisenhardt, 1989).

Based on the triangulation of the data, the analysis for each case study is structured through the following categories.

Historical background

The data on the historical background concerns the year of construction, location of the site and the information on the urban area, its former industrial type, site's dimension, main historical events, production cycle and its path, three motivations for its conservation (importance of the architectural dimension of the site; importance of the site for the economic development of the area; importance of the working conditions and practices within the site in the past). The goal of this section was to understand what was the past history of the site, its importance from different points of view (historical, social, economic, organizational) and the local area it was/is embedded in.

Reuse project

The data on the reuse project is brought together with the aim to understand the reuse strategy that was applied to regenerate the site, the reuse alternatives that were considered and the motivations of the choice of the final strategy and the aim of the chosen reuse project. Moreover, the attention

was given to the current property owner, the site's management company, the reuse project timing, the years of abandonment, the dimensions of the requalified part of the site compared to its total dimension (including the motivations that stood behind this decision), the actors involved in the reuse project. Furthermore, it is essential to understand if the reuse project during the implementation phase or not.

Current management

The data on the current management is analysed in order to understand the current governance structure of the new project and the financial business model applied. The following issues are addressed:

- earned income;
- income gap – low/medium/high and who covers it;
- financial autonomy;
- control over human resources;
- intended business model vs. realized one.

The data for the current management is considered only for first four case studies, the reuse projects of which are dedicated to historical/cultural projects. The motivation is explained later in the chapter 5 and 6.

Musealization of organizational history

The analysis of the musealization of organizational history is executed through three dimensions: 'spatial dimension', 'level of content' and 'level of expression'.

At first, each site is analysed looking through the 'spatial dimension' of the reuse project (space destination and architectural conservation). The analysis starts from the comparison of the map of the site in the past and the map of the site after the reuse project was implemented in order to compare the past use of the spaces and their current use (sometimes intended use within the reuse project but currently not realized). This is the first step on the way to understand how and to what extent the history of the abandoned organization is preserved within the new project. In the analysis of each particular space, its architectural characteristics are considered: if the space was left as it was before in the past or some structural modifications were carried out. The focus is on the motivations that stand behind these decisions rather than on the architectural modifications themselves. The data on the spatial and architectural dimension is analysed through the following scheme:

Space destination (current use vs. past use):

- **History of the space**: the history of what was in this space in the past is narrated (history_space);
- **History of the site**: the history of the former industrial site, but not this particular space is narrated (history_site);
- **History of the industry**: the history of the industry connected to the site is narrated (history_ind);
- **Local history**: the history of the area in which the site is located is narrated (history_local);
- **Cultural use not connected**: e.g. exhibition space; space for conferences and workshops; library (diff_cult_use);
- **Facilities**: e.g. reception, bar/restaurant, documentation center, warehouse, offices, bookshop, company shop (facilities);
- **External use**: the space is rent out to an external company (ext_use);
- **Abandoned**: the space is totally abandoned and closed (abandoned);
- **Production activity**: the space is dedicated to a new production activity (production).

Architectural aspect:

- **Maintained the same**: the architectural features are kept the same as they were in the past (same);
- **Partly changed**: the architectural characteristics of the space are partly changed but the general aspect is remained as it was in the past (changed);
- **Completely reconstructed**: the space is completely reconstructed in respect to its aspect in the past (reconstructed).

Then, the narration and musealization of the organizational history is investigated through the level of content (what part of the organizational history is preserved) and the level of expression (how it is narrated). The analysis is dedicated to the added meanings that are communicated through the different supportive materials (videos, audios, descriptive panels).

'Level of content' refers to what is communicated through different texts (e.g. videos, audios, descriptive panels, photos). The aim is to outline which part of the organizational history of the site is narrated and what motivation brought to one or another decision. The data on the 'level of content' is analysed through the following scheme:

2. **Level of content** (content of the videos; audios; descriptive panels):
   - **Plant history**: supportive materials about the history of the plant (plant_history);
   - **Industry history**: supportive materials about the history of the industry connected to the plant (ind_history);
   - **Local history**: supportive materials about the history of the area in which the plant is located (local_history).

'Level of expression' refers to the ways the content is communicated. It can be communicated through different supportive materials like videos, audios, descriptive panels, illumination, smells etc. The aim is to understand what are the most frequent ways used to narrate the organizational history. The analysis aims to grasp how the history of the organization can be narrated through various artifacts and how they can be perceived by the visitors, to what extent the visitor is involved in the regeneration discourse and to which type of visitor they are addressed. There is neither no need to analyse each object, nor to produce a catalogue of historical descriptions of all objects. Instead, the approach is structural and is devoted to understanding of the overall strategy, the consistency of all elements and not each element in detail, which is the focus of historians and curators.

3. **Level of expression** (how the 'content' is narrated):
   - **Video** (video);
   - **Audio** (audio);
   - **Descriptive panel** (descr_panel);
   - **Photograph** (photo);
   - **Artifacts/machinery:**
     - **Original artifact/original location**: the artifacts were used in the past in the plant and they are disposed in their original location (orig_art_orig_loc);
     - **Original artifact/changed location**: the artifacts were used in the plant in the past but they are disposed in another location (orig_art_no_orig_loc);
     - **Not original artifacts**: the artifacts were not used within the plant in the past but are important from the historical point of view (no_orig_art);
     - **No artifacts** (no_art).

After the exploration and analysis of each case study as a stand-alone entity based on the discussed scheme, the investigation proceeds with the cross-case analysis through different perspectives: the issues in reuse projects (chapter 6, para. 6.1), the issues in management (chapter 6, para. 6.2), the issues in organization history musealization (chapter 6, para. 6.3) and finally from an overall perspective (chapter 6, para. 6.4).

5. Management of industrial heritage and musealization of organizational history

This chapter is dedicated to the analysis of selected case studies (Table 4.1) as stand-alone entities. Each case study is structured in the following way.

Firstly, the main historical events from the construction of the former industrial site till the moment of its abandonment are illustrated. The aim of this part is to understand the original significance of the site. Three dimensions that stand behind the motivation of the site's conservation (identified in the chapter 2) are indicated.

Secondly, the main moments and details of the reuse project are discussed. The analysis of the local context in which the site is located helps to understand the processes that stands behind the choice of the particular reuse type and the evolution of the reuse project.

Thirdly, the current management of the reuse project is analysed through reconstructing its governance structure and financial business model. This research focuses on the detailed analysis of the current management processes only for the projects mainly dedicated to some form of cultural reuse (e.g. museums, cultural hubs). This distinction is made by answering to the question if according to a commutative property, the location of the reuse project is relevant or not. It means to understand what could have changed for the management of the project if it was located in another place. Surely, for any even not cultural project, its location in the former industrial site spaces can add more visibility, prestige, credibility, but the issue is to understand if its operational, managerial dimension could be different in another location. For this reason and considering the fact that the central question of this research is the preservation (in the sense of narration and musealization) of the organizational history of the abandoned industrial organizations, the current management issues are discussed in detail only for the first four case studies. It would be appropriate to analyse also the current management of the Ex Fratelli Bosio's Knitwear factory as one of its reuses is dedicated to the cultural activities and one of the future projects – to the preservation of the organizational history of the abandoned industrial site, but the collection of the data for this case study was restricted by the Covid-19 emergency and the impossibility to execute a field visit to the site which is essential in the collection of data for such kind of research.

The fourth part of each case study is dedicated to the conservation and musealization of tangible and intangible heritage of the former industrial site.

Finally, all critical issues that stands behind the reuse project, its current management and the musealization processes are brought together in the discussion part.

The last case study is represented by the demolished site, so its storytelling will follow another logic. Firstly, the historical background of the site before and after abandonment will be discussed. Secondly, the processes that brought to its demolition will be reviewed.

Given the distinct nature of the regeneration strategies; the questions posed by this research project; the extent to which the organisational history of the abandoned industrial heritage sites is preserved within the new projects; and the different availability of data for the various case studies (caused in part but not only by the Covid-19 emergency), the case studies discussed in the following paragraphs contain different levels of detail and extent of analysis.

5.1. Musealizing: *Former Florio plant in Favignana*

The Former Florio plant in Favignana is one of the oldest Mediterranean tuna traps. From ancient times tuna fishing has played an important role in the history of the Favignana island[14].

The site was built in the 1880s on the shore near the buildings and storehouses of the ancient *tonnara* and was kept functioning until 1982. It was the largest tuna production plant in Italy and represented, up until the 1960s, the most advanced canning industry for conservation of tuna as well (Lentini, 2011).

Figure 5.1. Former Florio plant in Favignana.

Source: Lombardo (2017).

[14] Inside the Genoese cave of Levanzo there is a graffiti dating back 9000 years B.C. which proves the presence of this activity already in that period. Moreover, in 1341 the first written act on tuna fishing in Favignana was written, a testimony that stayed until present days.

The Italian term *tonnara* is an all-encompassing term that includes the sea tuna fishing plant - the installation of the complex system of nets inside the sea, the land tuna fishing plant – the site where the tuna was processed and, in a broad sense, all human work that took place there (Lentini, 2011).

The tuna was fished with the method of *mattanza*[15], performed only once a year during the migration period of tuna between May and June. For Sicilians *mattanza* historically represents the symbolic value of the eternal struggle between man and nature, popular ritual, choral tradition, intense and cruel ceremony imbued with strong cultural meanings. Fish schools driven by the eastern Mediterranean currents can be found every year in the spring in the warm waters of the Strait of Sicily where the fishermen organized a sophisticated method of capture, according to an ancient and rigidly codified technique (Inzerillo & Russo, 2013). Two *tonnara* of the Aegadian Islands were historically the most productive not only in Sicily but from the second half of the 1880s in all Italy as the government data show (Pavesi, 1889).

While the tuna production plant was abandoned in 1982, the tuna trap continued working and was kept in function till 2007 when the traditional method of *mattanza* was prohibited in Italy. At the same time, the plant was sold to the *Regione Siciliana* in 1991. From 2009 it represents an example of regeneration of former industrial site into a museum of the industry and the history of the plant.

5.1.1. Historical background and abandonment period

For the centuries Favignana island was the heart of the tuna fishing industry. The first reference on the development of the ancient tuna trap in Favignana can be found in the notary documents of 1272 (Ravazza, 2014). The most significant period for the Favignana tuna fishing and production industry began in the end of the XIX century with the arrival of the Florio family to the island[16]. In 1841 Vincenzo Florio took *in gabella*[17] for 18 years both the tuna factory and the tuna traps of Favignana and Formica from the Pallavicino family, who had purchased the Aegadian Islands from the State Property of the Kingdom of Sicily in 1637. Back then the factory as we know it nowadays, still did not exist. In 1859 the tuna traps were taken *in gabella* for 18 years by a new tenant, Giulio Drago, who built a first part of the new plant, so-called *Torino* building. Meanwhile, in 1874

[15] From the verb 'mactare' which means "to kill" in Latin.

[16] The arrival of the Florio family marked the history and the success of the Favignana tuna trap. The Florio family was an important entrepreneurial Italian family, that moved from Calabria to Sicily, where they expanded their entrepreneurial activities to shipping (Navigazione Generale Italiana), shipbuilding (Palermo Shipyard), sulfur industry (sulfur mines), metallurgy (Fonderia Oretea), ceramics (fabbrica ceramica "Florio"), wining ("Marsala" wine production), motor racing (Targa Florio).

[17] Rent (from medieval Latin).

Vincenzo's son, Ignazio, entirely bought (at the price of 2 million 750 thousand lire) the Aegadian Islands from the Pallavicino family. In this period the factory was constructed around the *Torino* building, by architect - Giuseppe Damiani Almeyda and engineer - Filippo La Porta. This was the most flourishing period for the Florio family, but things changed and Ignazio Florio Junior, son of Ignazio Senior, was not able to maintain the same level of entrepreneurial activities. So in 1929, due to financial difficulties, the Florio family gave their stocks to the *Banca Commerciale Italiana* and in 1936 to the IRI (an Institute for Industrial Reconstruction) which took over the administration of the company. In 1937 the Genoese industrial family Parodi obtained the administration of the factory and kept it functioning until 1982 (Ferrante, Beltrano, & Spataro, 2019; Gini, Alongi, & Lentini, 2008; Guccione, 2014; Inzerillo & Russo, 2013). From that moment, the history of the sea tuna trap (installation of the complex system of nets in the sea) and the tuna factory (place where the tuna was processed) took their own roads. If before it was a unique system of tuna fishing and its consequent production, from 1982, from the moment when the tuna was not anymore processed at the Favignana plant, these two parts of the *tonnara* has to be considered as separated, not connected anymore.

Even if the plant was closed, the tuna trap remained functional. The equipment and the fishing rights for the tuna trap on the sea were transferred to Nino Castiglione s.a.s., which kept the tuna trap in function till 1996. Then the fishing rights were transferred to the newly formed fishermen's cooperative of Favignana who directly managed the tuna fishing activities till 2007 when the fishing of tuna with the traditional method of *mattanza* was prohibited in Italy. In 2016 Nino Castiglione srl without fishing rights dropped the tuna trap in Favignana, in order to save it from the cancellation from the European Union lists of the tuna traps (Nino Castiglione S.r.l., 2019). Nino Castiglione s.a.s. is the first Italian manufacturing company of private labelled tinned tuna (RDE sas, 2019). It has a long history connected with the Former Florio Plant, starting from the fact that young Nino Castiglione worked within the Favignana plant, then Nino Castiglione s.a.s. from 1982 till 1996 managed the Favignana tuna trap and, finally, in 2017 the Trapani company bought Florio brand from Parodi and launched the tuna production, bringing the Florio tuna back to life with a production of the highest quality, made according to the ancient tradition.

In 2019 the European Union announced the possibility to return the tuna fishing in Italy and assigned the rights to five traps (four - in Sardegna and one - in Favignana), the campaign that was not brought to the end as Nino Castiglione s.a.s. has considered it not financially sustainable, because the costs would have exceeded the revenues, as the quantity of tuna that could be fished was imposed by the EU.

This research focuses on what happened to the Florio production plant after its closure and abandonment in 1982. In 1991 it was sold with all its equipment to the *Regione Siciliana* at the price

of 7 billion lire (6,7 billion lire for immovable property and 300 million - for the movable part) (Gini et al., 2008). According to the internal documents of the Superintendence, at that time the site was in a complete state of neglect. Its degradation was caused by the abandonment period, by the local climate and by some acts of vandalism. The location of the site straight in front of the sea worsened the situation. The main causes of state of deterioration were the aggression of salt and the wind phenomenon.

After some maintenance works in the beginning of the 1990s, in 1994 the Superintendence of Trapani launched a research project on the potential reuse of the plant. The restoration of the site and its adaption to the new use started just in 2003 and lasted till 2009 when the museum of the history of the Favignana tuna fishing and production was inaugurated.

The cultural significance of the site

The literature on the Former Florio plant in Favignana encompasses its value in connection to three dimensions (identified in the chapter 2) that stands behind the motivation of the site's conservation.

From the point of the view of the importance of *architectural dimension*, the Former Florio plant is one of the largest tuna trap complex in the Mediterranean area. It was constructed by architect - Giuseppe Damiani Almeyda and engineer - Filippo La Porta, famous in Sicily in the end of the XIX century.

The plant played a very important role in the *economic development of the area and of the industry*. Being one of the oldest Mediterranean tuna traps, the plant was guiding the entire economy of the island till the beginning of the last century (Inzerillo & Russo, 2013). Economic development of Favignana was always driven by three sectors: tuna fishing, agriculture and the extraction of calcarenite. Nowadays, the central one is tourism.

The plant passed its flourishing years under the guidance of the important entrepreneurial Italian family Florio, who transformed the entire production cycle from traditional craft activity to a real industry, and invented the spline to open the cans, in particular those that kept the tuna egg. It was presented for the first time at the Palermo National Exhibition of 1891-92.

Nowadays, the Favignana tuna trap is the only functioning tuna trap in the whole Italy.

The history of the Former Florio plant show that it has to be preserved also because of its *importance of the working conditions and practices*. It is the first example of industrialization of the complete tuna production cycle management. The production chain was integrated (Guccione, 2014), everything was produced within the plants' walls. The plant was characterized by rigid work

organization and precise role division (Ferrante et al., 2019). The working conditions proposed by the owners offered a calm atmosphere for working. For example, during the whole time the factory hold just one 2-3 days' strike in the beginning of the 1960s (because of the possibility of plant closure). Except from that episode, the working atmosphere was calm which was a symptom of sensibility and of far-sightedness that was hard to find in the Italian industrial system at the end of the nineteenth century (Ferrante et al., 2019). Working at the factory for the locals was always considered more than just a job but something personal: they felt like they were part of the factory. Moreover, Parodi opened a kindergarten inside the plant where women had the possibility to leave their children while working and also they had official pauses for breastfeeding.

5.1.2. Reuse project and its implementation

The Former Florio plant is considered as a site of important historical-artistic interest with equipment of ethno-anthropological interest and has to be protected, according to the law n.1089 art. 1-3 of June 1, 1939 and art. 2 of the regional law n.80 of June 1, 1977. This pushed the regional administration to express its interest in the recovery of the plant and buy it from Parodi in 1991.

According to the sales contract (1991), the site is considered as "one of the most significant historical and architectural complex of the Aegadian Islands. The equipment of the plant represents the evidence of a production cycle that partly is impossible to find anymore". Its acquisition for the regional administration was an opportunity to requalify the cultural asset.

Already in 1990 the "Fiat-Engineering" group presented to the regional administration the project of the recovery of the Former Florio plant. It was dedicated to a creation of a touristic/cultural hub with museums of underwater and terrestrial archaeology, exhibitions of photos and materials on the history of the tuna plant and craft workshops. An important part of the plant had to be destined to the recovery of the tuna production in a form of a small laboratory. The project had to be started with the help of the public funds, straight after the acquisition of the site by the regional administration (Vespa, 1990). Nevertheless, after the acquisition of the site, the regional administration refused the project proposed by the "Fiat-Engineering group", likely motivated by the fact that the project consisted of expensive interventions that would have exceeded the available funds[18] (Corte Suprema di Cassazione, 2016).

The regional administration made a decision to manage the recovery project itself. As the site was in a complete state of a neglect, the first years after the purchase were dedicated to the initial

[18] This action resulted in "Fiat-engineering" group seeking legal recourse against the regional administration, which is still ongoing.

technical inspections of the plant and first restauration interventions focused on securing of the most dangerous parts of the plant.

In 1994 the *Regione Siciliana* (Department of Cultural and Environmental Heritage, Palermo) in collaboration with the Superintendence for Cultural and Environmental Heritage (Section for Landscape, Architectural and Urban Heritage, Trapani) launched a research project on a possibility of conservation and reuse of the site. It was an interdisciplinary project, during which architects, historians, anthropologists and other scholars collaborated in order to give back to the community one of the biggest tuna factories of the Mediterranean area.

The project received funding from the European Commission under the "POR 2000-2006 ASSE II Measure 2.01 Action C" and in 2006 the implementation phase was started. It was supervised by the officials of the Superintendence of Trapani and the Regional center of restoration. The main aim was "to conserve architectural features of the buildings, their characteristics and materials, the relevant construction and decorative elements. At the same time, particular attention was paid to the need to adapt the various buildings and spaces to the new uses (museum spaces, conference room supplementary services, guest rooms), both from the point of view of complying with architectural standards, as well as the technological equipment of the buildings" (From internal documents of the Superintendence of Trapani).

The total contribution amounted around 20 million euro for restoration works, acquisition of photos and videos, all multimedia devices and fire prevention systems. After the main restoration works were completed, the project received another funding under the PO FESR 2007-2013 ASSE III (around 2 million euro). This phase was dedicated mostly to two projects. One is the completion of the museum (purchase of the original photos, creation of an audio guide, temporary exhibitions, etc.), another one is organization of the International Art Campus (artistic residences in 2010-2011).

The museum was inaugurated in June 2009. Its exhibition included an archaeological section, a small section dedicated to Florio family, two multimedia installations, a small room for the projection of historical films, two rooms dedicated to the exhibition of photographic images of the great photographers from Magnum Agency, a series of educational panels on fishing and tuna processing, graphic and photographic panels that illustrate the most significant moments and activities of the tuna trap. The complex also includes an air-conditioned and fully furnished and equipped conference room for 400 seats, a large reception area and guests house of 12 rooms with services[19]. The reuse project was able to preserve a spirit of the closed factory, visitors cross different environments of the former factory: offices, warehouses, carpentry, workshops, locker rooms for men and women, military

[19] This is a description of the initial project, implemented in 2009. The current state of the site will be described later.

warehouse, gallery of machinery, space for the ovens for tuna cooking, where the vintage boats, the salt-soaked nets and the machinery used for processing the fish is disposed (Inzerillo & Russo, 2013). At the same the new museum is open for the private events, such as conferences, presentations, weddings, different festivals (e.g., festival of techno music in 2019).

Some spaces of the museum are dedicated to the exhibition on the Battle of the Aegates, a very important historical event for the Aegadian Islands. This permitted to attract the attention to the site by the visitors interested in the local history. Some events are also organized on this topic. This section was created by the Superintendence of the Sea, which is in charge of the maintenance of the artifacts exposed.

One of the first activities after museum opening was organization of the International Arts Campus (2010-2011). It was an experimental campus for specialized courses on contemporary art and its linguistic variations (workshops, residence program for under 35). Every year, the museum hosted four artistic residences, two artists from Italy and two from abroad. The artists spend a month on the island working and then they exhibit their works created during their stay at the former factory. The artistic residences were organized in June and September in order to attract more visitors to the site. All the artists slept in the restored residencies on the first floor. Unfortunately, this initiative lasted just for couple of years, and in the following years it caused closure of the first floor that was just restored.

In 2018 one space at the entrance to the site was given in free use to the Rescue Centre for marine turtles of the Aegadian Islands Marina Protected Area (according to the Concession Agreement with the Regional center of Trapani and Marsala for cultural sites of 2018). The ordinary maintenance costs are charged to MPA. They organize their own guided tours and events, what also attract new visitors to the museum (e.g., in 2019 they have attracted 2500 visitors to their space).

In the recent times, a lot of attention has been dedicated to the arts in connection with the sustainability and environment. For example, an exhibition on recycled plastic recovered from the sea was set up in the spaces of the museum (in 2019).

In the end of August 2020, it has been announced that the Former Florio plant will receive the funding under the program PON “Cultura e Sviluppo” 2014-2020 – Action 6c1.b “Support for the dissemination of knowledge and the use of cultural heritage, both tangible and intangible, through the creation of innovative services and / or systems and the use of advanced technologies”. The project is based on the extension of the exhibition paths through creation of new spaces dedicated to the narration of issues related to the founding of the site and its industrial history. Furthermore, new spaces dedicated to different cultural activities will be opened (MiBACT, 2020).

In the Table 5.1. the main events of the site’s history and the reuse project are summarized.

Table 5.1. Historical timeline of the Former Florio Plant in Favignana.

Date	Events
1841	Vincenzo Florio rented *in gabella* for 18 years both the tuna factory and the tuna traps of Favignana and Formica from the Pallavicino family
1859	Giulio Drago rented *in gabella* for 18 years the tuna traps;
	Construction of the first part of the plant - *Torino* building.
1874	Ignazio Florio entirely bought the Aegadian Islands from the Pallavicino family Construction of the plant around the *Torino* building
1929	The Florio family gave their stocks to the *Banca Commerciale Italiana*
1936	The Florio family gave their stocks to the IRI (an institute for industrial reconstruction)
1937	The Genoese industrial family Parodi obtained the administration of the factory
1982	Closure and abandonment of the tuna production plant
	Transfer of the equipment and the fishing rights for the tuna trap to Nino Castiglione s.a.s.
1991	*Regione Siciliana* acquired the plant with its equipment
1991-1994	Several small restoration projects within the plant
1994-1997	Research project on the potential use of the plant
1996	Transfer of the fishing rights to the fishermen's cooperative of Favignana
2003-2009	Implementation part of the reuse project
2007	Last *mattanza*
2009	Inauguration of the museum
2011	Introduction of the ticket (4 euro)
2012	Convention between the Superintendence and the Municipality of Favignana on management of museum activities
2014	Increase in the ticket price (6 euro- full, 4 euro- reduced)
2015	New convention between Superintendence and the Municipality of Favignana
2016	Assignment of the enhancement and management of the site and decisions on the cultural activities carried out in the museum to the Regional Center of Trapani and Marsala
2018	Opening of the Rescue Centre for marine turtles of the Aegadian Islands Marina Protected Area inside the plant
2019	An attempt of recovery of tuna fishing in Favignana
	New convention between Superintendence and the Municipality of Favignana
2020	Funding under the program PON "Cultura e Sviluppo" 2014-2020 for the extension of the exhibition paths

5.1.3. Between tangible and intangible heritage in the process of musealization

The main aim of the reuse project was conservation of the architectural features of the buildings, adapting them to the new uses. Within the project around two third of the site were recovered (See the map in the Figure 5.2). All recovered spaces were conserved in their initial form, except from some small modifications in several spaces. Conservation of the architectural, tangible dimension of the site helped to preserve a spirit of the abandoned factory. Visitors going from space to space, can feel the atmosphere of the past, can imagine how the factory was functioning.

The following paragraphs are dedicated to the description of different musealization techniques within the new reuse project (for a complete analysis of all spaces see Appendix 4).

The entrance to the museum was maintained the same as the entrance to the plant in the past (see n. 1 in the Figure 5.2). Above the entrance, there is an original plaque, representing the Florio logo with the inscription "The industry dominates the force".

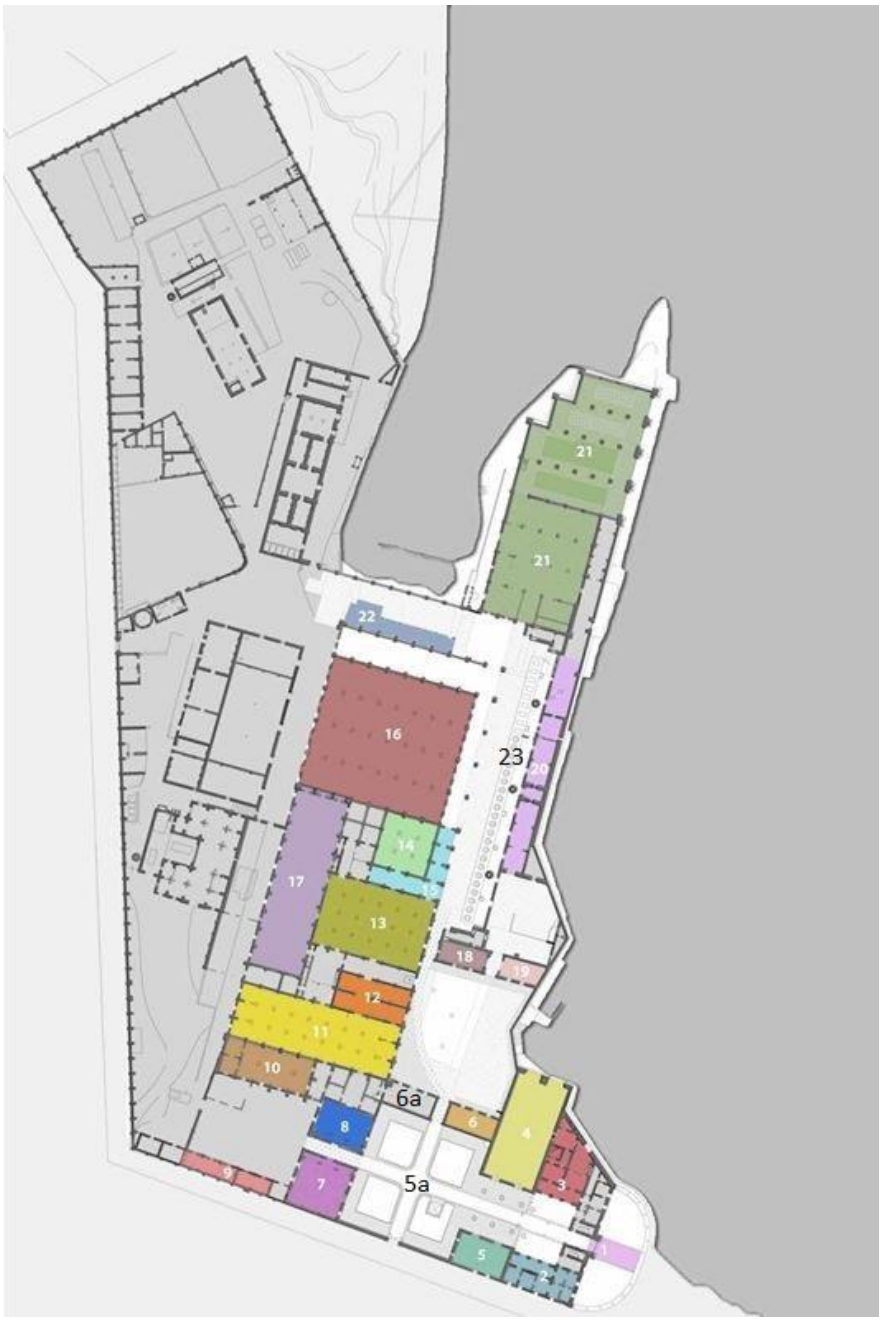
Right at the entrance to the museum there is a space (n.3, Figure 5.2) (in front of the ticket office (n.2, Figure 5.2)), given in a free use to the Marine Protected area of the Aegadian Islands in order to dedicate it to a Sea Turtle Rescue Centre. This is the only external activity not connected to the original use of the plant, nevertheless connected to the local history of the island.

Several space were left as they were in the past: e.g., a two-doors huge hangar (n.4, Figure 5.2) with two huge boats called "parascarmi" that were used to transport nets, cables, anchors; and the large courtyard (n.5a, Figure 5.2) with the sculptures of the important figures in the history of the factory: Gaetano Caruso, Vincenzo and Ignazio Florio. There are also three plaques that commemorate the best years in the tuna fishing business (translated, originals are in Italian):

- *"In 1859, the last year of Florios' rent, the tonnara of Favignana fished 10159 tuna. Manager A. Ribaudo. Rais A. Casubolo".*
- *"In 1848 year of our Lord 4345 tuna were killed in this tonnara, surpassing the memorable fishing of 1771 during the rent of Ignazio and Vincenzo Florio. Manager Ribaudo, Rais Michele Casubolo".*
- *"In 1853 in the tonnara of Favignana, continuing the rent of I.V. Florio Manager A. Ribaudo, Rais M. Casubolo 6828 tuna were killed".*

A particular way of the intangible heritage preservation is an ancient bell that rings before the museum closes. The bell is the one which notified about the end of the working day in the factory.

Figure 5.2. Former Florio plant in Favignana. Reuse project map.



Current use (Past use)

1. Entrance (Entrance); **2.** Museum reception and offices (Hiring and payroll offices); **3.** Sea Turtle Rescue Centre (Offices); **4.** Exposition of ancient equipment (Two-door hangar); **5.** Exhibitions (Hangar's warehouse) – now closed; **5a.** Courtyard, exposition (Courtyard), **6.** Permanent photo exhibition on tuna fishing (Women's dressing room); **6a.** Permanent photo exhibition on tuna fishing (General warehouse); **7.** Permanent exhibition on the Battle of the Aegates (Carpentry); **8.** Permanent exhibition on the Battle of the Aegates (Military warehouses) – now closed; **9.** Abandoned (Warehouse) – intended as a coffee bar; **10.** Abandoned (Kindergarten) – intended as a restaurant; **11.** Permanent exhibition on the Battle of the Aegates + Permanent photo exhibition on quarries of Favignana (Packaging warehouse); **12.** Permanent exhibition on Florio family + Permanent photo exhibition on tuna fishing + Temporary exhibition on environmental sustainability (2019) (Warehouse); **13.** Exposition of ancient equipment + photo exhibition of workers (Olive oil warehouse); **14.** Abandoned (warehouse); **15.** Exhibition on history of tuna fishing and history of the plant (Corridor); **16.** Video installation with workers' interviews (Load department); **17.** Conference hall (Workshop for making cans); **18.** Documentary on tuna fishing (Salt warehouse); **19.** Expositions (Men's dressing room) – now closed; **20.** Video installation "The Death Room" – now closed (Coal warehouse); **21.** Exhibition of ancient equipment (Four-doors huge hangar); **22.** Exhibition of ancient equipment ("Bosco"- first steps of tuna processing); **23.** Ancient equipment (The chimneys, tuna boilers); **In grey** – not restored part.

Several spaces are dedicated to the history of the Battle of Aegates, a permanent exhibition created and managed by the Superintendence of the Sea. The collection of the exhibition is a result of the underwater archaeological interventions and consists of ribbons, helmets, amphorae from the period of the Battle of Aegates, which are accompanied with several videos dedicated to the Battle. The exhibition is distributed around several spaces: the ex-carpentry (n. 7, Figure 5.2), the former military warehouses (n. 8, Figure 5.2) (closed in the last years because of the problems with its maintenance), the ex-warehouse (n.11, Figure 5.2) for the storage of the final product in the past. In the last space there are two permanent exhibitions. The main exhibition «*Antiquarium delle Egadi*» is dedicated to the artifacts found on the seabed of the Aegates (e.g. Punic, Roman, Norman amphorae, stumps of anchors, a helmet and a rostrum, a pewter bottle) (see Figure 5.3). In the ancient times the amphorae were used to carry the fish sauce that the Romans used to flavor the dishes. There is also an exhibition of Filippo Manino dedicated to Favignana quarries, an important source for economic development of the island. None of these exhibitions is connected to the history of the plant but to the local history of Favignana island. There are no descriptive panels except from some panels with the artifacts' titles. This can cause difficulties in comprehension of the narrated history in the case of the free visit of the site without a guided tour.

Figure 5.3. Antiquarium delle Egadi. Former Florio plant in Favignana.

Source: author's photo (2019).

According to the initial project, in the ex-spaces of warehouse and kindergarten (n. 9 and 10, Figure 5.2) a shop and a coffee-bar should have been located. Because of the bureaucratic difficulties they have been never realized. It is an example of negative consequences of the evolution of the initial business model.

Two spaces are dedicated to the photo exhibitions. In the ex-women's dressing room (n. 6, Figure 5.2) there is a photo exhibition of Salgado, Scianna, Burri and Freed on the tuna fishing at the plant in the 1950s. There is a sign on the wall from the Fascist period dedicated to the women that states (translated, originals are in Italian):

- *"You must be the keepers of the hearths".*
- *"The Italian women gave endless proofs of their courage".*

In the ex-general warehouse (n. 6a, Figure 5.2) there is a photo exhibition of Herbert List on the tuna fishing in 1951. The photos of these two exhibitions and other photos on tuna fishing visible around the site were acquired by the *Regione Siciliana* within the regeneration project. Both exhibitions are enriched with the descriptive panels on the biography of the photographers and the description of the exhibitions.

The ex-men's dressing room (n.19, Figure 5.2) was intended to be a space dedicated to expositions but now it is open but empty. In the ex-salt warehouse (n. 18, Figure 5.2) a documentary "Tuna fishing 1924-1931" (in Italian *"La pesca del tonno 1924-1931"*) is screened in a loop. An astonishing video by Istituto Luce entails material culture (production cycles) and immaterial aspects of tuna fishing (incorporated practices and practical knowledge).

The ex-coal warehouse is now closed (n. 20, Figure 5.2). Although within the initial project it was dedicated a video installation "The Death room" that introduce the visitor to a "death chamber" of tuna trap. It consists of a sequence of large format screens in white wide-mesh tulle on which underwater images of tuna flocks are projected in a loop, waiting for their destiny that has been unchanged for centuries. The spaces are wrapped in a liquid composition, while the screens in sequence play the images that interpenetrate, overlap, transpire on the walls of the ancient warehouses, built with calcarenite extracted from the Favignana quarries. And while the eye is fascinated by the great peaceful tuna and follows its swim, the ear picks up the sound of *cialome*, rhythmic songs and prayers of tuna fishers. During two field visits (May 2019 and October 2019) the space was closed. It is caused by delays in the maintenance procedures. This is another example of the negative evolvement of the initial business model.

Another space that was used to store the final product (n. 12, Figure 5.2) is now dedicated to an exhibition of the Florio family (photos; video on Florio family by Rai3); to a photo exhibition of Filippo Mannino (photos of tuna fishing in Favignana); to various temporary exhibitions (in 2019 – exhibition dedicated to environmental sustainability). An important part of the plants' history, the history of the Florio family is represented in this space.

In the adjacent space, so-called olive oil warehouse (n.13, Figure 5.2), already boiled and stowed tuna was brought and placed on the large stone tables and female workers poured olive oil drop by drop into cans with tuna. The space was left as it was in the past, with original large stone tables and an exposition of different types of cans (see Figure 5.4). The intent was to communicate the feeling of the working factory. This perception is enriched with a photo exhibition dedicated to the workers of the plant.

Figure 5.4. Olive oil warehouse. Former Florio plant in Favignana.

Source: author's photo (2019).

A couple of spaces are restored but currently closed because of the maintenance problems: an ex-warehouse (n.14, Figure 5.2) and the hangar's warehouse (n.5, Figure 5.2).

The Superintendence conducted a research project on to tuna fishing history and history of the industrial plant, which outcome is presented in the corridor (n.15, Figure 5.2). The exhibition "Fishing and tuna production" narrates history of the industry (tuna fishing and tuna traps in Sicily; machinery and equipment used in the industry), local history (history of the Favignana island and the importance of "one of the most important tuna plants in Sicily" for Favignana and its economic development), site history (history of the Florio plant) and history of different spaces of the plant (original location of the work sectors and production cycle path with a detail description of each step of the working process; original location of the machinery within tuna processing stages), using different visual techniques like maps, photos, schemes. The exhibition consists of 14 descriptive panels enriched with maps, photos, schemes.

These are also almost unique descriptive panels within the whole museum (except from descriptive panels of the photo exhibition in the spaces 6 and 6a (see Figure 5.2)).

The exhibition on the history of tuna processing stands close to a so-called "Torino" building.

Apparently, it is the oldest part of the plant, built by Giulio Drago, the last tenant of the Pallavicino family, before the acquisition of the site by the Florio family. Afterwards, Florio constructed the factory around the Torino building. Here the various tuna slices were placed on very large trays and women workers filled the cans with well organized, well pressed slices. The *Ex Stiva* department was the noisiest space in the factory with a lot of people working there. In the regeneration project this space has been dedicated to a video installation called "Torino" which was born as a project that aims to collect, in visual form, oral testimonies provided by 18 ex-workers of the Former Florio Plant (see Figure 5.5).

Figure 5.5. "Torino". Former Florio plant in Favignana.

Source: author's photo (2019).

The video installation is composed by 18 large-format holographic screens equipped with audio speakers, so the one can hear the audio only standing right under the sensor. The stories told by the ex-workers (*rais*, tune fishermen and others) represent the narrative practices "which helped to build a space within which it is possible to explore words of experience narrated on digital celluloid", says the author, Renato Alongi (official of the Superintendence of Trapani). It is the voice of those who remember their work not as slavery but as a unique anthropological history where the dignity of work stands by the dignity of the humans (Guccione, 2014).

When you enter the room, you hear in the background all the video installations. This recalls the past use of this space, a perception of noise, of a space full of people, voices. The room is completely dark, with no illumination. There is no route, visitors move from one video to another by themselves, so they can choose how long they would like to spend in front of each video, as each video lasts around 30 minutes. The interviews are in Italian or in Sicilian dialect, with no translation in order to maintain a real vivid history. All the details are important, the dresses, the gazes, the pauses, so the impressions of the immersion in the ex-factory can be perceived also by people who don't understand neither Sicilian dialect, nor Italian. The videos are performed in the form of the monologue but sometimes they are interrupted by clue words that appear on the black screen (like 'work unions', 'owners', etc.). The interviews represent a vivid history not just because the workers provided their narratives about closed organization but also because now, more than the half of these workers are already dead. Instead, when the installation was just produced, visitors that have just experienced it inside the museum, could easily meet the protagonists in the village nearby the museum[20].

The general strategy of the video installation was to create a situation of a full immersion in the environment of the former tuna factory, a place of narration practices, where the world of visually narrated experiences can be explored. This has been made on three levels:

- on spatial level: a totally dark room that helps to attract attention of visitors, when you enter the room you are even a bit scary because you feel like a part of this group of workers;
- on visual level: the interviews are organized in a way that the ex-workers look straightly at the visitors so there is a higher level of involvement;
- on verbal level: the interviews are not translated from Sicilian dialect and from Italian, so you become a part of the community, a part of an intimate dialogue with the ex-workers.

A unique, extraordinary way of intangible heritage narration, 18 poems about the work, daily experiences, one different from another but all telling the real life at the factory. All ex-workers tell the story of their life inside the factory. All of them started working at the very young age (from the age of 8-10) and changed different types of work before getting their main professions (that could be head cutter, *rais*, staff supervisor, etc.). They talk about different professions, their responsibilities, the atmosphere within the factory, their relationships with the colleagues and with the owners and directors. The various topics discussed by the ex-workers are listed in the Table 5.2.

[20] Based on the observations and on the interview with the author, Renato Alongi.

Table 5.2. Different topics discussed by ex-workers in the video installation Torino[21].

Topics	Quotes
Production cycle	- Detailed description of different steps of the production cycle (from the moment that the tuna fishing, its arrival to the plant and till the closure of the cans).
Work organization	- My working day is 7 am until midday, then at 1 you get back, at 4 and a half you were outside (G. Ernandes). - When there was tuna, we also worked at night ... and earned a little more (G. Ernandes). - When there was tuna period, I entered at 5, at 4 in the morning (A. Tammaro). - But all other jobs that had to be done… where there was work, we came (V. Clemente). - It's not like it was a continuous work. Yes, there were 2-3-4 years we worked continuously, but then it was always the period when you were out (A. Tammaro).
Various roles at the plant	- Detailed description of the various roles within the factory: *rais*, *ronchiatore* – head cutter, welder, staff supervisor, etc.
Importance for economic development of the island	- It was poverty, hunger there was. Good or bad was this plant, we thank God or God Father who fed all Favignana... but this plant has done a lot for the whole island of Favignana, a lot a lot (A. Tammaro).
Work unions and strikes	- And then the trade unions came ... we went on strike (M. Palermo). - There was once a strike ... they wanted to increase the pay (G. Giangrasso).
Presence of the kindergarten	- The woman who worked… was allowed to breastfeed... (G. Cataldo). - At 10 in the morning, they had half an hour to breastfeed here in the kindergarten. Then one hour at midday and then at 3 in the afternoon again half an hour and then back to work (M. Palermo).
Emotional dimension	- I remember the smells, the memories, the taste of tuna… (G. Cataldo). - Each tuna gave different emotion, each *mattanza* also (G. Cataldo). - It was the company best of the Europe (G. Ernandes). - For me the *tonnara* was like, was the life, I was fine (C. Ventrone).
Difficulties after the plant's closure	- The problems started when the *tonnara* closed, I mean the plant… this was the only bad thing that I remember (C. Ventrone).

[21] Translated, originals are in Sicilian dialect and in Italian.

The ancient boilers (n.23, Figure 5.2) were powered by coal and therefore were connected to huge chimneys from which dense smoke, visible also from the center of the town, came out. After being selected, washed and divided into different parts, the tuna was boiled in large copper pots with plenty of salt, for not less than an hour and a quarter. The workers were mixing the slices with scoops. The open-air space was kept the way it used to be, except for a small canopy posed in front of the chimneys, that was demolished. The huge copper pots and the original track on which the carts with tuna steaks arrived, are still visible (see Figure 5.6).

Figure 5.6. Ancient chimneys and boilers. Former Florio plant in Favignana.

Source: author's photo (2019).

The tuna arrived directly from the sea to the four-doors huge hangar "*Quattru purtazzi*" (n. 21, Figure 5.2) with large boats, then the tuna was unloaded from the vessels, their heads were removed and they were brought to the "Bosco" (n. 22, Figure 5.2). Both spaces were left as in the past with exposition of ancient testimonies: different vessels; a miniature reconstruction of the tuna trap; a cross with the images of the patron saints, including Saint Peter which was disposed at the entrance of the tuna trap during the tuna fishing period; oars and harpoons (see Figure 5.7).

Figure 5.7. Former Florio plant: Quattru purtazzi (on the left) and Bosco (on the right).


Source: author's photos (2019).

Another recovered space is a former workshop for making cans (n. 17, Figure 5.2), a space where the cans were realized, crimped and closed with a lid by welding it with a molten tin wire. It was restored as a conference hall for 400 places.

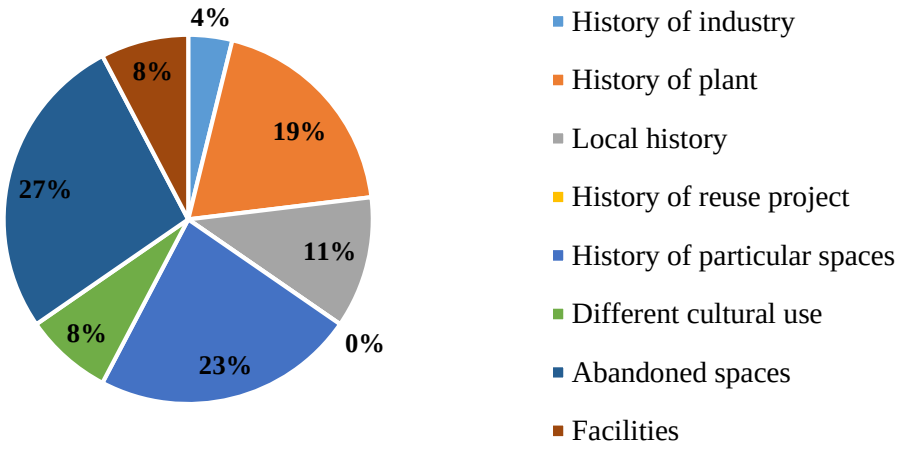
Today around one third of the whole factory has not been restored. It is in a complete state of neglect: a cemetery (a large area where the waste was thrown in order to be dried in the sun, after which it underwent a cooking process and subsequent grinding to be transformed into fish oil, glue, fertilizer or fishmeal); power plant; mill; dormitories for workers coming from other villages; California department (space where the cans with tuna were sterilized); can's warehouse; forge; garden; cold storage building and buoy warehouse.

There is no obligatory path in the museum, visitors are free to choose the order by themselves.

An issue that makes difficult gathering the information proposed within the exhibition in a complete way is a lack of descriptive panels within the site. All of the descriptive panels on the history of the site, the history of the industry are concentrated in one space (n. 15, Figure 5.2), which is located closer to the end of the exhibition path. Nevertheless, guided tours propose a complete immersion in the history of the plant, of the tuna history and history of the organization and working practices. Sometimes the guided tour is managed by Giuseppe Giangrasso, ex worker of the tuna factory and currently the guardian of the museum. His stories are vivid representations of the organizational history of the site.

Musealization of the history of the site is enriched with the narration of the history of the industry, history of the entrepreneurial family who played an important role in the plant's history, narration of the local history even not connected with the tuna fishing activity. The whole distribution of different space destinations can be viewed in the Figure 5.8.

Figure 5.8. Space destinations within the reuse project of the Former Florio Plant.



The major number of the spaces is dedicated to the history of particular spaces or to the history of the site. But at the same we see an important number of abandoned spaces. There are two reasons of this. Several spaces have been never restored even if it was intended by the initial project (e.g. opening of a bar, bookshop). There are multiple reasons that stands behind this: bureaucracy, problems within the governance structure. These issues are discussed more deeply in the next section. Other spaces were restored within the implementation phase of the regeneration project and were successfully functioning in the first years after museum inauguration. The main reasons why they are closed now are the difficulties and the delays in the maintenance procedures. It will be shown later that such kind of problems could be overcome by a clear division of the roles and responsibilities within the governance network.

Information on the reuse project is visible only through couple of panels at the entrance of the museum that indicate the program through which it was funded.

The history of the site is narrated through a complex of different methods: videos, photographs and descriptive panels. Nevertheless, as it was already noticed, all the descriptive panels are concentrated in one space disposed not in the beginning of the visitor path, what can influence the comprehension of the plant's history within free visit without any guided tour. The photographic representation of the plant's history is very rich, different photo exhibitions are present in many spaces of the museum and accompany the visitor in getting the overall understanding of how the plant was functioning. What about the video narration of the plant's history, from one point of view, all the videos are very informative: Rai3 documentary on the history of the Florio family, the Istituto Luce documentary on tuna fishing within the site, the video interviews with former workers. From another point of view, each video can be considered as a separate narrative, they are all very long and it is almost impossible that visitors will be focused on all of them.

The narration of the intangible aspect ('level of content') is also quite complete. The outcome of the research project of the Superintendence is present in the corridor space (n. 15, Figure 5.2). It encompasses the history of the industry, the history of the plant, the local history of Favignana, the working practices within the plant, different machinery used, detailed description of the production cycle. Video installations are also focused on different aspect: the Rai3 video tells the history of the Florio family and their entrepreneurial activity, the Istituto della Luce documentary shows both material culture at the site (details of the production cycle) and immaterial aspects of tuna fishing (incorporated practices and practical knowledge), the video interviews with former workers create an immersion in the environment of the former tuna factory focusing on the vivid working practices and conditions at the plant. Unfortunately, closed space with the video installation on the death chamber of the tuna trap shows an another important part in tuna fishing activity.

Different photo exhibitions show the former workers of the plant in different working stages: from tuna fishing and *mattanza*, to photos of former workers in different departments, the kindergarten, the changing room.

Different original artifacts are disposed around the museum. Even if the major part of the ancient machinery is still abandoned and not restored. There is a project of the Superintendence to enrich the exhibition with the ancient equipment, but it is still at the research stage.

5.1.4. Governance, financial business model and accountability

The regeneration project and its consequent management has been always under a public control. The site is in the property of the regional administration and its regeneration project was supervised by the Superintendence of Trapani. According to the internal documents of the Superintendence and several interviews conducted during the field visits, the regeneration project was well structured thanks to the involvement of the heterogeneous group of professionals, a long research project and a high investment received. At the same time, it seems that the consequent management of the new project had not been programed at the initial phase. The next paragraphs report the issues connected to the governance of the site, the main activities of the new project and main income sources, its financial autonomy and covering income gap if present.

In 2009 straight after the museum inauguration, the Superintendence of Trapani signed the first convention in order to outsource museum activities and maintenance of the site. According to this convention the Municipality of Favignana was in charge of personnel and ordinary maintenance, and

the cultural activities part was given in charge to Fondazione Buttita[22] and Fondazione Sambuca[23]. In the beginning the entrance to the museum was free. The ticket was introduced for the first time in May 2011 for the cost of 4 euro.

The collaboration with two foundations was not extended anymore because in 2012 the Superintendence stipulated another convention with the Municipality of Favignana on management of museum activities. According to that convention the Municipality was in charge of the ordinary maintenance, appointment of a technical manager, ticket service assistant and organization of the guided tours. In October 2014 the ticket cost was increased (6 euro for a single ticket, 4 euro – for a reduced single ticket).

In 2015 a new convention between Superintendence and the Municipality was signed. It specified that the Superintendence continued to guaranty extraordinary maintenance of the site and pay expenses. The Municipality had to guaranty ordinary maintenance, ticket office and guided tours, activities of promotion, marketing, co-branding of the museum after formal approval of the Superintendence. The Superintendence had a right to organize any public or private events within the site, the revenues from such events went to the *Regione Siciliana*. The Superintendence also had an exclusive right of photo and video recording. The Municipality of Favignana was allowed to celebrate civil weddings inside the museum under the approval of Superintendence and payment to the *Regione Siciliana*.

Under the convention of 2015 the Municipality had to keep open the museum from March 15 to November 4.

Because of the lack of the internal staff, the Municipality signed 17 contracts of annual occasional collaboration for guided tours and ticket office and one for technical manager of systems and fire safety for the period when the museum is open. Responsibilities of collaborators are to provide access to the museum, manage ticket office and tourist guiding. There is no official hierarchy between them, but not officially they have decided a main collaborator who is in charge of the work-shifts and other

[22] Fondazione Ignazio Buttitta is a foundation in Palermo that deals with protection, study and development of the Sicilian culture. It promotes conferences, congresses, exhibitions, assigns scholarships, promotes educational activities for students, supports archive research, field research and photographic and audiovisual surveys on oral and material culture. It has organized various cultural events within the Former Florio Plant: didactic workshops on Sicilian puppets "Opra in Tonnara" (2010/2011); Filippo Mannino's exhibition “Holidays and work” (2010), “The tuna nights” (2010) in collaboration with the Foundation Sambuca; photographic exhibition “Favignana between sea and land. Images of Melo Minnella and Filippo Mannino” (2011); photographic exhibition by Melo Minella "Paths in the imagination" (2011-2012); “Here the light is different: lyrics, music and distant colors” (2012); photo exhibition (2013) on the Castle of San Giacomo in Favignana “The Invisible Castle. Stories and memories of the beyond the wall”.

[23] Fondazione Sambuca is a research and experimentation center for contemporary arts in Palermo that organizes exhibitions, conferences and seminars.

issues (interview with a collaborator of the Municipality of Favignana). In the summer period after 8 p.m., the plant is guarded by the civil protection volunteers.

The Municipality of Favignana had a right to cash 90% of ticket sales revenues, while 10% went to the *Regione Siciliana*. The Municipality was obliged to deposit all revenues to the Sicily Region, that afterwards had to return to the Municipality the 90%. This obviously caused inappropriateness and delays. Another inconsistency stays in fact that, according to the interview with the mayor of Favignana (2019) and to the press, in the last years the regional administration has not transferred back to the Municipality that 90% and the debt arrived to 900 thousand euro. In addition, all the revenues from the private events organized within the site went to the Sicily Region. The Municipality was able to pay all the expenses in these years because of the presence of the landing fee.

In 2016 a new actor entered the scene. According to the DPCM n. 171 of 29/08/2014 Regional center of Trapani and Marsala for cultural sites was created as an instrumental body of the Regional Department of Cultural Heritage and Sicilian Identity. From 2016 all the enhancement, management of the site, decisions on the cultural activities were assigned to the Regional Center.

In 2019 the new convention was signed with the local authority of Favignana. Thanks to the regional law n.17 by 17.03.2016, art. 3, comma 27 that allowed to transfer to local authorities the management of minor cultural sites, the management of the Former Florio plant has been completely transferred to the Municipality. With the new convention, the Municipality has a right to organize cultural events and weddings (after authorization of the Superintendence), has to pay the expenses, produce leaflets and multilingual brochure, and also can open a bar and a bookshop in the site. Finally, a manager responsible for the museum has to be identified inside the Municipality[24]. The Superintendence is still in charge of protection and scientific research. And the regional administration has to guaranty extraordinary maintenance of the museum.

The governance of the reuse project can be described as a network of heterogeneous public actors. The main actors are the *Regione Siciliana*, the Superintendence for Cultural and Environmental Heritage of Trapani, the Regional center of Trapani and Marsala for cultural sites and the Municipality of Favignana. Responsibilities of different actors according to the conventions of 2012, 2015 and 2019 are listed in the Table 5.3.

Even if the network of different actors has varying responsibilities within the site, there is a lack of clarity in the processes these actors need to follow. “No entity has permanent employees assigned to the management of the Florio factory”, arises from the interview with the mayor of Favignana in

[24] By November 2020 nothing has changed yet (probably) because of the Covid-19 emergency and the election of the new mayor in Favignana.

2019. Within the years, this caused difficulties of communication and confusion in the responsibility roles.

Table 5.3. Roles and responsibilities of different actors. Former Florio Plant in Favignana.

Actor	**Roles and responsibilities (2012-2019)**	**Changes in roles and responsibilities (2019 ->)**
Regione Siciliana	• Publications, TV and radio shooting • Revenues of all private events • 10% of ticket sales revenues • Extraordinary maintenance	• No revenues from ticket sales
Superintendence for Cultural and Environmental Heritage of Trapani	• Extraordinary maintenance • Payment of expenses	• No payment of expenses
Regional center of Trapani and Marsala for cultural sites	(From 2016) • Enhancement and management of the site, organization of cultural activities	
Municipality of Favignana	• Ordinary maintenance • Guided tours • Promotion, marketing, co-branding (after approval of the Superintendence) • Organization of civil weddings (after approval of the Superintendence and payment to the Region) • 90% of ticket sales revenues	• Revenues from private events • 100% of ticket sales revenues • Assignment of manager responsible for the site • Payment of expenses

From the legal point of view, each actor has its own list of competencies. But in the reality, the difficulty of following the hierarchy of the actors and the misunderstanding of their competencies caused difficulties in the implementation of everyday maintenance duties and even closure of several museum spaces. For instance, a collaborator of the local authorities noticed in the interview: “We do not have a concrete person that we have to refer to. We need to refer to the Superintendence – for the restoration problems; to three different departments of the Municipality of Favignana – accountability department, human resources department and technical office; to the Regional center of Trapani and Marsala for event organization and to the Superintendence of the Sea for the any issues on the

exhibition about the Battle of Aegates. And none of these organizations have a responsible person to whom refer".

The new convention stipulated in 2019 between the Sicilian Region and the Municipality of Favignana seems to give more autonomy to the Municipality in the management of the site. The Municipality should finally assign a manager responsible for the museum that could resolve the inconsistency in the roles and responsibilities.

As it was already mentioned before, it seems that though the regeneration project was very detailed, the current management of the site was not planned at that phase. The bureaucratic difficulties and the confusion in the responsibilities that emerged in the last years have brought, first of all, to the fact that several projects intended within the initial masterplan have not been realized yet. For instance, the Regional center was not able to open neither a bar, not a bookshop (from the interview with an ex-director of the Regional center). The second issue is that several projects that were realized in the beginning had to be closed because of the difficulties in their maintenance.

Based on the interviews conducted within he filed visits, two main problems in the management of the site emerged. The first one, already mentioned, is the involvement of many actors. And the second one is the fact the museum does not have financial autonomy. The revenue streams of the museum are based on the revenues from the ticket sales and revenues from the private events. But till 2019 all the revenues from the private events went directly to *Regione Siciliana.*

In the Table 5.4 the revenue streams from 2013 till 2019 and the number of visitors per year (both paying and non-paying) are listed.

Table 5.4. Number of visitors and revenue streams of ticket sale for the years 2013-2019.

Year	**Number of visitors**			**Revenue** (euro)
	Paying	**Non-paying**	**Total**	
2013	18.085	4.525	22.610	66.552
2014	43.988	14.239	58.227	170.966
2015	42.581	12.946	55.527	242.259
2016	48.406	15.738	64.144	284.460
2017	47.820	16.368	64.188	284.088
2018	40.609	13.283	53.892	237.432
2019	40.310	14.974	55.284	236.082

Source: (Regione Siciliana, n.d.).

Number of visitors to the plant has increased to 65.000 visitors per year, initially starting from very low numbers and slowly reaching this high figure. “The tourist flow of the island of Favignana has changed radically after the opening of the museum. Now there is not only seaside tourism”, noticed the director of the Regional Centre for cultural sites in the interview.

When the museum was inaugurated in 2009, the entrance was free and the number of visitors is unknown in that period. The first ticket was introduced for the cost of 4 euro in May 2011. The revenues from the ticket sale increased in 2015 with the same number of visitors as in 2014 because on October 10, 2014 the cost of the ticket was increased to 6 euro for single ticket, 4 euro – for reduced single ticket. In 2018 the number of visitors and the revenue from the ticket sale has decreased. In that year the tourism economy of the Province of Trapani decreased in general because the Ryanair airline has cancelled their flights to Trapani and cruise ships have changed their routes. This caused a drop in tourists of a few thousand units. In October 2019 the Ryanair has announced the return of the flights to Trapani, this should increase of the tourists to the island.

Unfortunately, it was impossible to get any information on the financial data of the museum, even if it was requested several times.

The only available data is the number of collaborators and the personnel costs. In 2019 there were 17 collaborators with a wage of 8000 each (for the period from April to November). The salary of the technical assistant was 10.500 euro for the whole season. So the total personnel expenses were 146.500 euro in 2019. Unfortunately, it was impossible to gather any data on expenses for ordinary maintenance, payment of various expenses, etc. It seems that the Municipality of Favignana has no budget on the museum, no planning of the expenses. The information is not centralized and the accountability is not transparent.

Some data was gained through the interview with the mayor of Favignana. He stated that “it has been possible to maintain open the museum because its extraordinary maintenance has been always a duty of the Superintendence of Trapani and the revenue from the ticket sale were directed to the payment of ordinary maintenance and personnel costs”.

After the last convention (June 2019) all the revenues from the ticket sale should be addressed directly to the Municipality of Favignana, the Municipality can organize and collect all the revenues from the private events. The new convention gives the possibility to the Municipality to open, for instance, a bookshop, a bar that were intended in the initial project but have been never realized.

After the closure of the museum because of the COVID-19 emergency, the site was opened only in the middle of July (opening at the national level were planned on May 18 and on the regional – on May 30) with several limitations. Firstly, based on the decision of the Regional Center the “Torino” space was closed, as it could be difficult to follow the Covid-19 security measures in the dark space.

Secondly, the exhibition of the Battle of Aegates was closed because its main exhibits (rostrums) were given for some exhibitions outside of Favignana.

5.1.5. Discussion: *between musealization and sustainability*

Favignana is a small island in the Province of Trapani, southern Italy. For centuries its main economic development source was tuna fishing and production. So when the site was abandoned, the awareness of importance of its preservation was high both within the local community and within the public authorities. That is why the site was acquired by the regional administration with an intent of the valorization of its cultural asset. Even if the site was in a complete state of a neglect after its abandonment, the opportunity cost of its conservation was low. The only project presented to the regional administration on the site's recovery was by the "Fiat-engineering". It was an opportunity to conserve not just the plant's history in a form of a "classic" museum but also to preserve even in a limited way the production activities. Nevertheless, because of investment (or probably political?) issues that project was rejected.

From the very beginning the regeneration project stood in between the opportunities of the public sector and its difficulties. The implementation of the project was possible thanks to the enormous funding of the European Commission and the research project that lasted several years in collaboration with specialists of different fields (e.g. architects, historians, anthropologists). A lot of efforts at the stage of the project's preparation were directed at the organizational history preservation, preservation of the history of the industry and the local history of the area.

The reuse project can be classified as a mix use. One part of the museum is dedicated to the local history of Favignana (Battle of the Aegates, history of the Favignana caves). One space was given in a free use to the Aegadian Islands Marina Protected Area for an opening of the Rescue Center for marine turtles. The site also hosts temporary exhibitions, various conferences and private events. It is surely a way of attraction of new visitors, but also it is a risk of losing the identity of the museum. One third of the site is still abandoned and is in a complete state of a neglect.

The motivations of the site's preservation identified from the literature review in the first part of the chapter are all partly present in the musealization project.

The architectural features and almost all decorative elements were conserved as in the past. The reuse project was able to preserve the spirit of the abandoned plant. Visitors cross different environments of the former factory, like offices, warehouses, carpentry, workshops, women's and men's locker rooms, military warehouse, gallery of machinery, space for the ovens for tuna cooking, vintage boats, salt-soaked nets and machinery used for fish processing (Inzerillo & Russo, 2013).

The history of the local development of the area and of the industry was preserved through various exhibitions even if there could be a deeper view on the technological development of the plant and the positioning of the plant's importance in the comparison with other tuna factories in Sicily and in Italy. The fact that the Favignana tuna trap is now the only functioning tuna trap in the whole Italy should be highlighted.

The organizational history narration is distributed all around the museum. All historical periods of the closed organization, its entrepreneurs, work organization issues are raised through different musealization techniques, such as descriptive panels, photo exhibitions, original artifacts, videos.

Each space of the museum is signed with an inscription of its past use but the descriptive panels dedicated to the site's history are concentrated just in one space which, furthermore, is located in the second part of the museum. Visitors, who choose to view the museum exhibition on their own without guided tour, can have difficulties in comprehension of the narrated history. The detailed project of the Superintendence, located in one space can be distributed around different spaces of the museum in order to give insight on the history step by step.

One musealization technique used in the regeneration project can be described as a 'best' practice of the organizational history narration. It is the "Torino" installation, video interviews with the former workers of the plant that discuss various issues of the working practices, such as work organization and division or roles and responsibilities, work unions and strikes. Still a huge research should be implemented on the accounting and management history of the tuna factory.

The choice of the case study was motivated by the scale of the reuse project and its fascinating musealization methods. If the implementation phase of the project was supported by the huge investment and by the enormous preparation work, from the moment the site was inaugurated the "difficulties" of the Italian public sector started to appear. And the current management of the project can be identified as a worse practice.

The first impression was made during the visit to the museum. The sign at the entrance, where the prices and opening hours are listed, is written by hand and is worn by the sun. Several spaces were closed, some of them were open but empty, several multimedia installations were not working. There is neither a bar, no a bookshop in the museum. There is also no bookshop on the island at all and the closest place to buy the materials on the museum is in Trapani.

There were several difficulties in the data collection, from confusion in the defining of the roles and responsibilities to impossibility to receive any financial data. Further some critical issues will be listed with the possible policy indications.

The main problem of the current management is the confused governance network. The network consists of four public actors (the *Regione Siciliana*, the Superintendence of Trapani, the Regional

Center for cultural sites of Trapani and Marsala and the Municipality of Favignana). The relationship between the actors is based on the convention agreement (different versions signed in 2012, 2015, 2019). Even if the roles of the actors are formally defined, in practice there is a clear overlap of roles and responsibilities. In years it caused different slowdowns, delays, closure of some museum spaces and even situations of degradation. None of the actors has a responsible person for the Favignana site. The management of the museum activities was outsourced to the local authority which does not have any appropriate staff. Several spaces of the museum were closed in the last years because of delays in the ordinary maintenance, some spaces got partly abandoned.

Till 2019 (the moment when the last convention was signed), all revenues from different private events even the ones organized by the Municipality, went to the *Regione Siciliana*. This was reducing the interest of the Municipality and the Regional Center for cultural sites to enhance such events. Also the Municipality of Favignana had to transfer all revenues from ticketing to the *Regione Siciliana* which in turn had to give back 90% of these revenues to the Municipality. From these 90% the Municipality had to cover the personnel costs and the ordinary maintenance of the site. The regional administration had never deposited this amount into the account of the Municipality which had to cover the costs using the Municipality city tax (from the interview with the mayor of Favignana).

The confused legislation, the bureaucratic difficulties within the public authorities caused the impossibility of the site's management in a proper way, no financial autonomy and no control over human resources. The paradox is in the fact that the site continues to receive the European Commission funds for restoration of the new spaces, enlarging the musealization part.

5.2. Musealizing into a park: *Archaeological Mines Park of San Silvestro*

The Archaeological Mines Park of San Silvestro retraces the mining district of Campigliese area, the territory where research and extraction of metallic minerals began in the Etruscan period and continued until 1976. The mining park is located in the territory of the iron and steel industry which for decades guaranteed high levels of employment and welfare for the local population. In 1980s it suffered from the economic and employment crisis caused by restructuring of the international steel market. This is one of the main reasons why already in the middle of the 1970s the local authorities expressed their interest in the enhancement of the territory, in the identifying and creation of several archaeological and natural parks.

Figure 5.9. Lanzi-Temperino Tunnel. Archaeological Mines Park of San Silvestro.

Photo source: Piccirillo (2019).

In 1993 five local authorities of the Val di Cornia area (Campiglia Marittima, Piombino, San Vincenzo, Sassetta and Suvereto) created the Val di Cornia Parks S.p.A. which today is a regulatory body of the parks' system:

- 2 archaeological parks (the Archaeological park of Baratti and Populonia, the Archaeological Mines Park of San Silvestro);

- 4 natural parks (the Coastal park of Sterpaia, the Coastal park of Rimigliano, the Natural park of Montioni, the Forestry park of Poggio Neri);
- 4 museums (the Archaeological Museum of the Territory of Populonia, museums of the San Silvestro park, museum of the Castle and of the city of Piombino, museums of Rocca di Campiglia Marittima).

After the years of abandonment, thanks to the attention of the local authorities and an extensive research project, the Archaeological Mines Park of San Silvestro was recovered and opened to the public in 1996 with a scope of narrating the history of the mining activity and the local history of the area.

The Val di Cornia Parks S.p.A. is a best practice in the field of cultural heritage management in a form of a network (Cerquetti, 2012).

5.2.1. Historical background and abandonment period

The Campigliese area has a long, rich history of mining exploitation for copper, lead, silver and tin, with the alternating moments of stasis and lack of interest for the richness of the subsoil. It can be characterized by five main periods. In each period at the beginning the interest had been growing each time very fast and, afterwards, because of some political reasons, technical difficulties or technological innovation, the mines were abandoned in a rush way.

Over 2000 years ago the Etruscans dug at least two kilometers of underground paths, up to a depth of 117 meters. They were searching for the minerals to coin money. The first important settlements in the area belongs to the Middle Paleolithic. Miners continued to descend in the Campigliese mines until the I century B.C., but Rome preferred to stock up metallic minerals in Spain or Carinthia. That is why the mining settlements and mines were abandoned (Semplici, 2011).

It took nine centuries to return interest to the area. With the dissolution of the Roman Empire, Longobard families arrived in Tuscany and the monetary economy was reborn in the cities. That period was related to the foundation of the castles linked to mining activities (Rocca San Silvestro) in order to exploit the abundant local deposits of copper and silver-bearing lead one. The mining techniques used by the Medieval miners did not differ greatly from those of the Etruscans and the prospecting was concentrated in that period in particular in the Valley of Manienti and Lanzi, behind Rocca San Silvestro. Compared to the previous period, the impact on the territory was smaller. With the XIV century the mining activities of the Campigliese area stopped and the castles were gradually abandoned.

Mining activities were resumed in the second half of the XVI century on the initiative of Cosimo I, Grand Duke of Tuscany, and arrival of the German miners. Although this period lasted only for twenty years, the works were impressive: large open spaces that cut ancient crops, immense vaulted rooms, marble quarries. Due to the technical difficulties in the separation of the various metals the mine was abandoned in 1559.

During the XIX century almost all ancient works were resumed with the most evident traces. Open-pit quarries and research galleries were excavated in the Valle dei Lanzi in order to check the ancient voids. At first some Italian companies were engaged (*Società anonima italiana per l'escavazione e la lavorazione della miniera di piombo argentifero*), then they were replaced by the French (*Bourbon, Noiret, Badois e Gavault & C.*) and English ones. Some marble extraction and processing activities were established. The extraction technique changed completely, thanks to the use of gunpowder followed by explosives, capable of crushing great volumes of rock. The mines were organized into extraction levels on several layers, with long horizontal tunnels linked by vertical wells, used for shifting minerals and workers in industrial lifts. Many evident signs still remain of that period: tunnel mouths, shafts, remains of railways used for transporting minerals, mining buildings.

The English company Etruscan Copper Estate Mines, established in London in 1900 and went bankrupt seven years later, left an astonishing industrial village and the most substantial industrial archaeological monuments: buildings, five extraction shafts, metallurgical plants, the remains of a railway. The mesh of the underground crops voids still follows the trend determined by the activities of this company.

In the beginning of the 1950s several companies (*Miniera dei Lanzi, la Rimifer, la Ferromin*) activated some research projects in the Campigliese area. The mining activities resumed in 1954 with the Campiglia Mines Company. It reactivated the Earle shaft and deepened the mining crops started by the English. The works lasted until 1976. During the last mining phase and after the mines' closure, the territory was exploited for the limestone extraction used in the chemical and steel industry and in construction. Several open-air quarries were opened, some of them are still functioning (Semplici, 2011).

In 1976 miners received dismissal letters, which they denied and on 23 October 1976 the mine was occupied. Those were intensive days and weeks but the mine had no future. The miners got the redundancy pay but refusing to be paid for nothing they self-managed the mine till 1980. At the end it had no results and in 1983 the mine was officially closed, in 1986 the entrances to the galleries were walled up and in 1991 mining concessions were revoked.

Even if the mine was completely closed only in 1980, several areas were abandoned much earlier. For instance, the Rocca San Silvestro was abandoned during the course of the fourteenth century; the Etruscan Mines village was abandoned straight after the English company became bankrupt in 1907, such as other areas within the Park that were constructed by the English.

The cultural significance of the site

The literature on the Archaeological Mines Park of San Silvestro encompasses its value in connection to three dimensions (identified in the chapter 2) that stands behind the motivation of the site's conservation.

From the point of the view of the importance of *architectural dimension*, the Park is full of mining tunnels, shafts, industrial plants, different constructions of various historical periods: from Etruscan period to XX century. Particular attention should be paid to the Rocca San Silvestro - a self-sufficient medieval village of miners and smiths founded in the X century, and to the Etruscan Mines village - an astonishing industrial village founded by the British company, Etruscan Copper Estate Mines Ltd, in the beginning of the XX century.

The mining industry was crucial for *the economic development of the area* for many centuries (from Etruscan period till 1980s). An important technological modernization made by De Cassai by the introduction of flotation in the second half of the XX century. It made possible to obtain about 98% of the useful metal contained in the mineral.

The history of the Archaeological Mines Park has to be preserved also because of the its *importance of the working conditions and practices*. The fascinating history of the Etruscan Copper Estate Mines Ltd, its ambitious start and its bankruptcy after several years: small salaries, no security at work, bad treatment of the workers, retiring and different miners' manifestations (Carli, 2010). The dangerous mining work caused several deaths of the workers (e.g. in 1904, 1907, 1937, 1956, 1959) so that in the 1960s the cemetery for miners was built. The particularities of the payment system caused a lot of accidents. Until the 1970s, piecework was done. The miners were paid on the basis of the meters they dug in the rock. This method was merciless and it caused multiplication of the accidents. Union manifestation put an end to piecework and the injustices of a job without rules. One of the most interesting moments before the mine's closure the mine occupation in 1976. The miners obtained the introduction of the redundancy pay and kept the mine opened and self-managed till 1980.

5.2.2. Reuse project and its implementation

Already in the middle of the 1970s, the Municipalities of Val di Cornia expressed their interest in the enhancement of the territory, in the identifying and creation of the several archaeological and natural parks. Thanks to the coordinated Regulatory Plans (1975-1980), thousands of hectares were destined to the park area (Zucconi, 2003).

From an administrative point of view, Val di Cornia is a part of the province of Livorno and is made up of five municipalities (Campiglia Marittima, Piombino, San Vincenzo, Sassetta and Suvereto), 500 hectares of the area of archaeological interest and around 6000 hectares of the areas of natural interest. In the following years the municipalities acquired the territories of the Archaeological Mining Park of San Silvestro, Archaeological Park of Baratti and Populonia, Coastal Park of the Sterpaia, through expropriation or good-natured agreements and started valorization process. The creation of the parks system was caused by the direct willingness of the Municipalities. According to the words of the director of the park system: "Public administrations became conscious of the heritage that had in terms of its value and the value of its reconversion and alternative economy".

The mining activity in the Campigliese area was abandoned in 1976 and the centuries-old industrial heritage was in a complete state of a neglect. Moreover, it risked to become an open quarry. It was avoided again thanks to the local authority's awareness and the Local Development Plan (Zucconi, 2003). In the same period the scientists of the University of Siena discovered the ancient village of the Rocca San Silvestro. In 1984 the Department of the Medieval Archaeology (University of Siena) in collaboration with the Municipality of Campiglia Marittima and numerous European University Departments started the first excavation campaign of the Rocca San Silvestro. It lasted for 12 years and was an initial step of creation of the San Silvestro Park. The aim of this excavation was not just the archaeological discovery but the complex measures for the opening of the archaeological mining park to the public (Guideri, 2008). In parallel with the archaeological research on the Rocca San Silvestro, the speleologists of the Natural Science Museum of Livorno discovered about thirty preindustrial mines, dated from the late Etruscan period till the medieval and renaissance periods (Francovich, 2003).

In 1989 on behalf of the local administrations a work group was formed in order to define a project outline of the Campiglia Marittima park. The work group evaluated different possibilities for reuse of the buildings within the park in order to identify the areas of archaeological and historical interest (Buchanan, 1992). And in 1992 the Masterplan of the project was defined with the aim of

preservation and conservation and considered the educational and cultural aspect, environmental aspect, stimulus for the local economy.

In 1993 the municipality of Campiglia Marittima together with other four local authorities of Val di Cornia area decided to establish the Val di Cornia Parks S.p.A.[25], the regulatory body of the Val di Cornia Parks system with a share capital distributed between the public partners (85%) and some private entities (15%). In the next years the Municipalities have gradually entrusted the environmental and archaeological heritage to a body of a private nature created *ad hoc* in order to guarantee homogeneity in the management system for the entire park system (Amadei, 2011).

Thanks to the European Community funding, ex. EEC 328/1988 RESIDER I, it was possible to begin the reconstruction interventions in 1994. The investments of 2.170.000,00 euro (RESIDER covered 70%) were aimed at the recovery of buildings in order to create a reception center, a museum, a bar, a caretaker's house and offices; at the process of securing of the Temperino mine; at the process of securing of the Rocca San Silvestro in order to make in accessible for the public. In June 1995 the Rocca San Silvestro was opened to the public and in 1996 - also other parts of the Archaeological Mining Park of San Silvestro.

Since 1998 the Municipalities of the Val di Cornia area began to entrust through specific concession deeds the management of parks and archaeological areas to the Val di Cornia Parks S.p.A. with the task of following the design, carrying out the enhancement interventions and managing the structures and services located in the park areas. The Municipality of Campiglia Marittima entrusted the management of the Archaeological Mines Park of San Silvestro to the Val di Cornia Parks S.p.A. in 1999 (Amadei, 2011).

In the beginning of the 2000s the second phase of the restoration process was launched. Its aim was to expand the contents, complete the historical path through the recovery of some structures that represent the symbol of the most recent phase of the mining activity and opening the Museum of the Mining Machinery and the Museum of the Social History of the Miners (opened to the public in 2006). This part of the project was financed by the community funds (DOCUP Regione Toscana – Integrated Local Development Programs – PISL 2000-2006): total cost 1.500.000,00 euro, from which 60% were financed by PISL. All funding sources, amounts and their destinations (1994-2007) are listed in the Table 5.5.

The last part of the project was dedicated to the recovery of Villa Lanzi as a Documentation Gathering and Conservation Centre, offices and archive; recovery of the Palazzo Gowett as a hostel; recovery of the Valle Lanzi plants area as different warehouses. Villa Lanzi and Palazzo Gowett were

[25] Italian denomination of a joint-stock company.

opened to the public in 2004. Thanks to the PISL funds in 2006 the "Lanzi-Temperino Direct" Tunnel was also opened to the public, as an underground path accessible only by train.

Table 5.5. Funding sources of the Archaeological Mines Park of San Silvestro project.

Year	Project	Total amount (euro)	EEC Contribution (euro)	Territorial pact (euro)	Municipality resources (euro)	Program agreement (euro)	Type of program	Objective
1994/ 1997	**S.S. 94**	2.174.283	1.521.998		652.285		Resider I	Buildings recovery, securing of the Temperino Mine, securing of the Rocca San Silvestro
1998/ 2001	**S.S. 98**	1.032.913	537.115		495.798		Resider II	Completion works of the archaeological park structures
1998/ 2001	**L/G 98**	2.089.966	1.219.657	486.502	383.806		PAR/Patto Territoriale	Recovery of buildings for the construction of a documentation and training center and for hostel accommodation
2003/ 2004	**S.S. 03**	242.455				242.455		
2002/ 2007	**S.S. 06**	1.500.000	900.000		600.000		PISL	Realization of the Lanzi Temperino Direct Tunnel
2002/ 2007	**S.S. 07**	1.882.000		1.882.000			Patto Territoriale	Requalification of the Valle Lanzi area
TOTAL		**8.921.618**	**4.178.771**	**2.368.502**	**2.131.890**	**242.455**		
% of total			46,8 %	26,6 %	23,8 %	2,7 %		

Source: internal documents of the Val di Cornia Parks S.p.A.

The reuse project from its beginning was a collaboration of different actors. It was an intersection of the interests of the Municipalities of the Val di Cornia to enhance the area of archaeological and natural interest, the research initiatives of the University of Siena and, in particular, farsightedness of the Prof. Riccardo Francovich, who from the beginning planned the archaeological excavation campaign of the Rocca San Silvestro as a start of the complex measures for the opening of the archaeological mining park to the public.

The objective of the Val di Cornia Parks S.p.A. is to enhance the archaeological and naturalistic heritage of the territory with protection and promotion actions that are carried out through the creation and management of services for visitors (visitor centers, centers for experimental archaeology and environmental education, naturalistic and archaeological routes, museums and guided tours) and other services (bookshop, bars, hostels, parking, etc.) (Convenzione, 2002). According to the director of the Val di Cornia Parks S.p.A.:

"Our project is a system project, a project that seeks to create, correlate and understand heritage as a unitary heritage, without any administrative distinctions".

The aim of the San Silvestro Park reuse project was not only to develop and create a museum from a single monument, but an entire historical landscape, the result of centuries of mining workings, combining the development of the local resources with the protection of the environmental and historical assets. The park tells the history of the mining activities from the Etruscan period till the 1980s, explaining different mining techniques, showing mining machinery. The routes within the parks encompass paths of historical, archaeological, geological and naturalistic interest.

The visit begins from the Museum of Archaeology and Minerals, located in the Ticket Office building and it houses an exhibition of minerals and rocks of the Campigliese and displays some exhibitions found in the Rocca San Silvestro. Then the guide accompanies visitors in the Temperino Mine where they can discover evolution of the extraction techniques. Coming out of the Mine, there is a walk towards the Earl Shaft area where two museums are located: one dedicated to the history of the mining machinery and the other one - to the social history of the miners. From there the visit of the Lanzi-Temperino Tunnel, underground path accessible with a train, starts. Alighting from the train, visitors arrive to the Valli Lanzi area, from where they can reach by foot the Rocca San Silvestro, Villa Lanzi and Palazzo Gowett. The park also offers several archaeological mining itinerates for trekking (Parchi Val di Cornia SpA, 2019b).

All various space destinations, the possible entrances to the park and other conceptual logistic issues were studied within the initial Masterplan (Casini, 1993).

The site proposes visits of historical, archaeological and naturalistic interest and attracts different types of visitors. It is free of admission charge, except from the mines and the Rocca San Silvestro where the guided tours are obligatory. Within group activities there are several educational laboratories for the schools (with a scope of deepening knowledge of the historical archaeological patrimony, knowledge of natural resources, experimentation of ancient production, acquisition of the fundamental principles and methodologies of scientific research) and guided tours for organized groups.

The main events of the site's history and the reuse project are summarized in the Table 5.6.

Table 5.6. Historical timeline of the Archaeological Mines Park of San Silvestro.

Date	Events
VII-I century B.C.	Roman Etruscan period: Etruscans dug at least two kilometers of underground paths, up to a depth of 117 meters, searching for the minerals to coin money.
Late X-XIV century	Medieval period: foundation of the castles linked to mining activities (Rocca San Silvestro).
XVI century	Modern period: mining activities were resumed by Cosimo I, Grand Duke of Tuscany and although for only 20 years, the works were impressive (large open spaces that cut the ancient crops, marble quarries).
The 19th century	Resumption of almost all the ancient works (open-pit quarries and research galleries; marble extraction) by Italian companies (Società anonima italiana per l'escavazione e la lavorazione della miniera di piombo argentifero), French ones (Bourbon, Noiret, Badois e Gavault & C.) and English ones.
The XX century	Contemporary period: construction of the Etruscan Mines industrial village (1901-1907); Resumption of activities in 1954 with the Campiglia Mines Company.
1976	Dismissal letters to the miners and occupation of the mine
1977-1980	Miners self-managed the mine
1983	Definite closure of the mine
1970s-1980s	Planning of the territory coordinated with the Municipalities of the Val di Cornia
1980s-1990s	Scientific research aimed at the production of a masterplan
1984	First excavation campaign of the Rocca San Silvestro
1980s-1990s	Acquisition of the areas through expropriation or good-natured agreements (Archaeological Mining Park of San Silvestro, Archaeological Park of Baratti and Populonia, Coastal Park of the Sterpaia).
1992	Masterplan creation
1993	Establishment of the Val di Cornia Parks S.p.A.
1994	Start of the implementation phase of the reuse project thanks to the EU funding
1995	Inauguration of the Rocca San Silvestro
1996	Inauguration of the Park
2000-2002	Start of the second part of the implementation project; Production of the structures of low environmental impact (equipped areas, restaurant points, medical points, canteens, car and caravan parks).
2004	Opening of all public facilities (Documentation Centre, Hostel, restaurant points)
2006	Opening of the Lanzi-Temperino Tunnel and the Museum of Mining Machine and Social History of the Miners in the Archaeological Mines Park of San Silvestro.

5.2.3. Between tangible and intangible heritage in the process of musealization

The Park proposes visits of archaeological and naturalistic interest. This stands in a line with the objective of the Val di Cornia Parks S.p.A. "to enhance the archaeological and naturalistic heritage of the territory" creating services for visitors (Convenzione, 2002).

The recovered part can be divided into four main areas. The first one is the Temperino area with the ticket office, bookshop and museum dedicated to archaeology and minerals, the restaurant "Santa Barbara", an exhibition dedicated to the history of mines and mining techniques and the underground path – the Temperino mine. The second area is called the Earle shaft area. There are two museums: one dedicated to the mining machinery and one – to the history of miners. There is the second underground path – the Lanzi-Temperino tunnel. The third area is the Villa Lanzi area with the Valle Lanzi plants – a huge area with different plants for crushing, screen and flotation of minerals, now restored but left for an internal use; a hostel; documentation center and offices and Rocca San Silvestro, a place that gave birth for the whole Park. The fourth area are so-called archaeological-mining routes, five itineraries that retrace different part of the history of the area.

In the Figure 5.11 all restored spaces are listed with the indication of their past and present uses. The following paragraphs are dedicated to the description of different musealization techniques within the new reuse project (for a complete analysis of all spaces see Appendix 5).

The ex-energy buildings (Figure 5.10) was restored as a reception center, ticket office and the Museum of Archaeology and Minerals (n.1.1., Figure 5.11).

Figure 5.10. Museum of Archaeology and Minerals (before and after restoration).

Source: internal documents of the Parchi Val di Cornia S.p.A.

Figure 5.11. The Archaeological Mines Park of San Silvestro. Reuse project map.

Current use (Past use)

1. Temperino area (on the map the red buildings around 'Il Temperino')
1.1. Museum of Archaeology and Minerals: museum, ticket office, bookshop (Energy building); **1.2.** Restaurant «Santa Barbara» (Stables and warehouses); **1.3.** Exhibition dedicated to the history of mines and mining techniques (Workshop building); **1.4.** The Temperino Mine: underground pedestrian path (Mine gallery).
2. Earle shaft area
2.1. Museum of Mining Machinery (Earle shaft. Winch building) – on the map n. 9; **2.2.** Miners Museum (Miners' canteen and changing room) – on the map n. 10; **2.3.** Lanzi-Temperino Tunnel: underground path with train (Mine gallery) – on the map near n.10.
3. Villa Lanzi area: 3.1. The Valle Lanzi plants: closed for public (Crushing, screening and flotation plants) – on the map near n. 24; **3.2.** Gowett building: hostel ("Etruscan Copper Estate Mines" headquarters) – on the map near 34; **3.3.** Villa Lanzi: documentation center; offices (Miners' dormitory) – on the map near 33; **3.4.** Rocca San Silvestro (Medieval village of miners and smiths).
4. Archaeological-mining routes: 4.1. The Temperino Route; **4.2.** The Ferruzze Route; **4.3.** The Lanzi Route; **4.4.** The Manienti Route; **4.5.** The Fonti Route.

These are two large industrial buildings, built by the British of the Etruscan Mines in 1901. After the British left in 1901 selling all machines, the remained buildings underwent several transformations. Before falling into abandonment, for few years they hosted lumberjacks and peasants of the Campigliese area. Even if within the restoration process the architectural aspect of the buildings was changed, the general aspect of the buildings was left as it was in the past. Besides the reception center and ticket office, today there is a Museum of Archaeology and Minerals of the Park and a bookshop. On the ground floor the most significant minerals and rocks of the Park are exhibited, as well as the didactic panels that illustrate the geological history. On the first floor there are artifacts found by archaeologists during the excavation of the Rocca San Silvestro village: agricultural tools and minerrim pottery from the kitchen and canteen of local production, small personal items found in the burials, and remains of the mineral fusion processes metal, the slag. The panels (just in Italian) tell the story of the village and the techniques of research and extraction of minerals in ancient times. Several descriptive panels are dedicated to the Val di Cornia Parks project, the regeneration project of the San Silvestro Park and the local history of the area. The Museum gives an important introduction to the visit of the Park through narration of the history of the industry and some historical periods of the park. Anyway, there is no connection to the past use of the space.

The ex-stables and warehouses complex (Figure 5.12) was requalified in a bar-restaurant “Santa Barbara” (see n. 1.2., Figure 5.11). The restoration process changed the architectural aspect of the buildings, adapting them for the new uses, even if the general aspect of the buildings was left as it was in the past. Its management is outsourced to an external company *Società Cooperativa Ballarò*.

Figure 5.12. Bar-restaurant “Santa Barbara” (before and after restoration).

Source: internal documents of the Parchi Val di Cornia S.p.A.

The ex-workshop building, a two-storey building, constructed with local stones (fragments of skarn and waste from mining) (see n. 1.3., Figure 5.11) now is crossed in order to get to the Temperino gallery. A series of didactic panels tell the history of the mines, evolution of the mining technique in the Campigliese area, the extraction cycle and the path in the mine. A part of this building is dedicated to an exhibition "Faces from…" through which the minors tell the story of the struggles and of the occupation of Campiglia's mines in 1976, for the defense of a national mining resource and of a long standing work and attachment to the mine. This important part of the social history of minors will be touched again in the other parts of the Park.

The Temperino mine gallery (see n. 1.4., Figure 5.11) is a 360 meters long underground pedestrian path through the ex-mining gallery. The first level of an impressive 6-levels mining system is visible together with a mining shaft from IV century BC. In 1841 it was the French company Bourbon, Noiret, Badois and Gavault & C. to resume work in the valley of the Temperino stream to follow the traces of the ancient Etruscan excavations. They dug until 1876 when minerals were no longer sufficient. In the second half of the 1900s the Campiglia Mine Company extended the tunnel. This gallery represents the entire mining history of this valley. It can be visited only with a guided tour and an audio guide for foreigners, in which the ancient extraction technique, modern extraction technique, extraction technique with gunpowder and then dynamite, excavation techniques are explained. The visit is enriched with different ancient artifacts: track for the carriageway, exchange of tracks, wooden armor (reconstructions, not original), original armor, research gallery. Another exhibition dedicated to the moment of the closure of the mine and the struggle that the miners fought not to lose their jobs – installation "Shadows of steps" (Figure 5.13).

Figure 5.13. Installation "Shadows of steps".

Source: internal documents of the Parchi Val di Cornia S.p.A.

The second area of the Park is the Earle shaft area. This shaft was started by the engineer M.H. Coquand (till 90 meters deep) and was deepened (till 200 meters) by Etruscan Mines Company who named it Earle in honor of their president. It has both internal and external structures (Figure 5.14). Internal structure is an underground labyrinth of galleries and tunnels, vertical shafts.

Figure 5.14. Earle shaft: Museum of Mining Machinery.

Source: Ibello (2019).

The external structures were present by the winch and compressor rooms, the headframe, miners canteen and changing room. The ex-winch building, used for shaft service, was closed at the end of the Etruscan Mines period and reopened by the Campiglia Mining Company in 1961. The mines were closed in 1976, the machines were reactivated in 1983 for maintenance work and the winch was set in motion last time in 1998. It was restored and requalified into the Museum of Mining Machinery (see n. 2.1., Figure 5.11). The exhibition contains a 3D-model of Temperino mine and Earle shaft, electric panels, prohibition signs, different ancient machinery, boxes containing the dynamite, boxes with cores made in the last years of the mining activity, three compressors, pneumatic hammers and servos, winch, iron notebooks - news, invoices, quotes and catalogs of mining machines, printed on iron sheets. In the second room, a video on a reconstruction of the metal headframe of the shaft, which was rebuilt in the late 1950s when the shaft was reopened, is screened in loop. Outside of the building there are few meters of old rails, trucks, excavator. The architectural aspect of the space was kept as it was in the past, the exhibition intends to communicate the history of the space, original ancient artifacts together with the video reconstruction of the shaft reconstruction helps to retrace the organizational memory of the abandoned mine.

The ex-miners' canteen and changing room (Figure 5.15) was restored and requalified in another museum "Morteo" dedicated to the social history of miners (see n. 2.2., Figure 5.11). During the years of mine occupation, it became the heart of the union struggles, the assembly hall of the miners, the meeting point of their families. It is conserved as it was in the past with a large table and benches used by minors.

Figure 5.15. Miners Museum «Morteo».

Source: author's photos (2019).

Old photos and documents tell about their lives, their works, illnesses and trade union struggles organized in order to prevent the closure of the mine. Descriptive panels (both in Italian and in English) explain the organization of work in the mine in the period between 1954 and 1978; miners' salary and organization of working hours (e.g. in 1970s "Italy was among the countries in which miners worked the longest hours: 2184 hours a year and an average of 273 working day"); working shifts; illnesses; medical check-ups and accidents at work; the union struggles and mine closure in 1978. The textual description is enriched with lay-off letters, strike pamphlets and various photos. Also there are iron notebooks as in the Museum of Miners Machinery on the miner's history and an 8-minutes video by the ex-miner Dumas Tofani on the history of the mine. Moreover, the second part of the exhibition "Faces from…" continues here.

The Lanzi-Temperino Tunnel is an underground path accessible just with a train (max 52 passengers, max speed – 8 km/h, duration: 15-20 minutes, length of the journey: 1,5 km) (see Figure 5.16; see n. 2.3., Figure 5.11).

The gallery was started as mining prospecting in the second half of the 1800s, proceeded by Montecatini spa and completed by the Mining Company of Campiglia Marittima Spa in the 1960s as a haulage tunnel for the transport of minerals from the extraction shaft to the crushing and flotation installations of the Lanzi Valley.

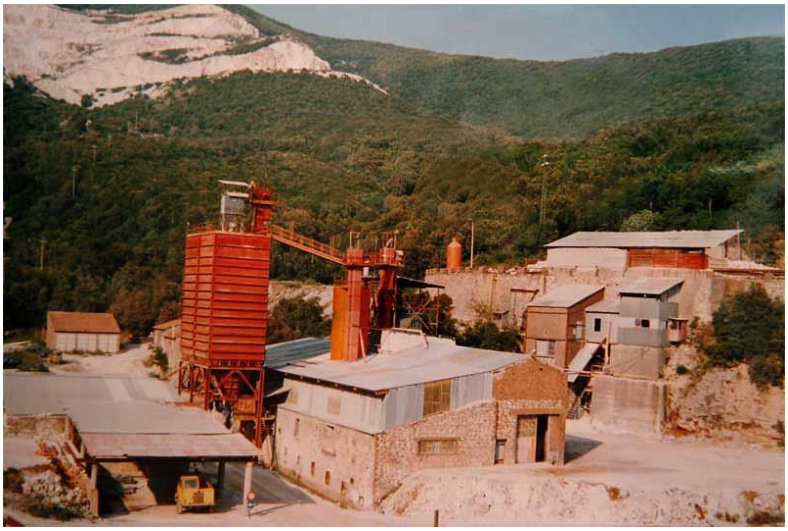
Figure 5.16. Lanzi-Temperino Tunnel.

Source: internal documents of the Parchi Val di Cornia S.p.A.

The minerals were transported on mine-cars along narrow-gauge tracks. Today visitors pass through the same journey as the minerals passed in the past. Inside the tunnel, the working tools, the shapes and colours of the minerals and a picturesque stop in the grand central extraction room (at some point the train stops, the lights turns off and the visitors hear poetry by the miner Dumas Tofani) will take the visitors on a discovery of an extraordinary underground world. Different trucks, mechanical shovel, boxes with cores, pneumatic drill are exhibited. The cores are exposed here in order to tell the final stage of the mining activity, the research on the possibility of reactivation of the mine but it did not bring any good result so the mine was closed.

The third area of the Park is the Valli Lanzi area, which starts with a complex of plants for crushing, screening and flotation of minerals (Figure 5.17; see n. 3.1., Figure 5.11).

Figure 5.17. The Valle Lanzi plants.



Source: Website of the Archaeological Mines Park of San Silvestro (Parchi Val di Cornia SpA, 2019b).

Built by the managers of the Campiglia mine company in the 1950s, they were in function until the second half of the 1970s. And before on the same place there were the railway buildings constructed by the Etruscan Mines company. The plants were put in securing and now are used as internal warehouses, closed for public.

The ex-headquarters of the management of "Etruscan Copper Estate Mines" were constructed in 1901, remained in function till 1907 and then were abandoned for an almost one century. The peculiarity of this building is that it is visible from any point of the park. It was completely restored (see Figure 5.18) and transformed into a student's hostel and home restaurant (see n. 3.2., Figure 5.11). The hostel is managed by an external company *Società Cooperativa Ballarò*.

Figure 5.18. Gowett building. Now - hostel. (before and after restoration)

Source: internal documents of the Parchi Val di Cornia S.p.A.

Ex-miner's dormitory (Villa Lanzi) was commissioned by Cosimo I De' Medici in 1556, to house the German miners (see n. 3.3., Figure 5.11). In 1560 the Lanzi left. The Villa was restored by the British of the Etruscan Mines in early 900' for the farmers-miners. The first floor was constructed only in the 1900s. The director of the Campiglia Mine S.p.A., the latest company, came to live in the Villa until 1992 even after the mine's closure. Today it is dedicated to the documentation gathering and conservation centre and offices of the Parchi Val Di Cornia S.p.A. It also conserves the specific archive of the entire historical documentation produced by the Campiglia Mine S.p.A. Villa Lanzi is also a place for training courses, seminars, round table meetings and conventions, laboratory activities aimed at primary and secondary schools, corporate meetings or conventions, and various recreational activities.

The last point of the Park's visit is the Rocca San Silvestro. It is reachable by a twenty minutes' walk from Villa Lanzi (Figure 5.19).

Figure 5.19. Rocca San Silvestro.

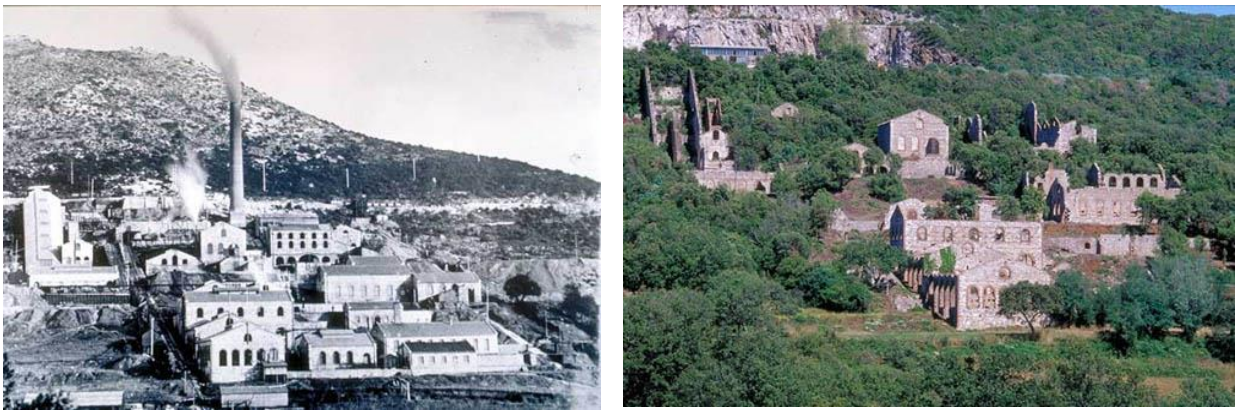
Source: author's photo (on the left), internal documents of the Parchi Val di Cornia S.p.A. (on the right).

It was founded by village lourds between the X and XI centuries in order to exploit the abundant local deposits of copper and silver-bearing lead one. The metals were used for coin production (*zecche toscane*) principally in the mints of Lucca and Pisa. The village was abandoned during the course of the XIV century as a consequence of a variety of factors which were principally economic and connected with a change in the system of resource management. Thanks to the archaeological excavation and to the research of the scientists of University of Siena, now it is a site museum. The visitor follows an itinerary designed to show social and economic organization, eating habits, building and metallurgical techniques of a medieval community.

In addition, the Park proposes several outdoors archaeological mining itineraries that reveals the rests of different historical periods of the mining activity.

An important part of the Park's territory remains abandoned now. It is an Etruscan Mines industrial village (Figure 5.20).

Figure 5.20. Etruscan Mines industrial village (in the past and now).



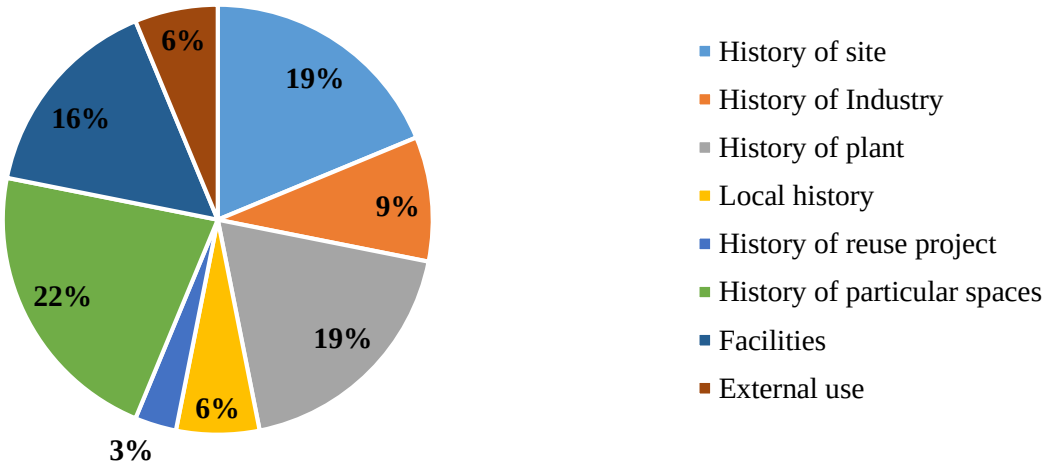
Source: (Carli, 2009).

It was constructed in the beginning of the 1900s by the Etruscan Mines Company. A mining village consisted of sixteen buildings and three powder magazines with large deposits of explosive material: laundry, mills, ovens, foundries, warehouses, spaces for five boilers, electric generator, magnetic separator, a high chimney. Now it is in the state of a neglect, the chimney was demolished. The impossibility of recovery of the Etruscan Mines village is caused by the presence of the flotation and crushing plants of a quarry that is still in function and is positioned outside of the Park. The Park is also crossed by a road through which the huge trucks bring materials from the quarry to the crushing plants. The initial Masterplan (1992) included the recovery of the Etruscan Mines village but it has never been realized.

There is no obligatory path in the museum, even if the order of the spaces proposed earlier is the most logic consequence to visit the whole territory of the Park. It is possible to choose which part of the Park to visit.

The visit starts within the Museum of Archaeology and Minerals which gives the first overview of the history of the Park, the history of the industry and the local history of the area. Also in some other spaces musealization of the history of the site is enriched with the narration of the history of the industry, history of the local area, history of particular spaces. The whole distribution of different space destinations can be viewed in the Figure 5.21.

Figure 5.21. Space destinations within the reuse project of the San Silvestro Park.



Only three spaces of the park suppose an obligatory guided tour: two underground paths and the Rocca San Silvestro. Other spaces, even if visited without a guide, are enriched with the descriptive

panels, photos, maps, different artifacts. The major number of the spaces are dedicated to the history of the site itself or the history of particular spaces.

The history of the site is narrated through a complex of different methods: old photos, maps and different documents that accompany descriptive panels. There are two videos: one is a documentary video dedicated to the reconstruction of the headframe of the Earle shaft and another one is a small video that shows the whole territory of the Park with a narration voice of one ex-miner that tells the history of the mine. Another visual method used within the reuse project is an audio with a poetry written about the Park by the ex-miner Dumas Tofani, it is played in the darkness of the Lanzi-Temperino tunnel. Almost in all the spaces of the Park the original artifacts from different historical periods are exposed.

The narration of the intangible aspect ('level of content') is present all over the site through various descriptive panels that encompass the history of the Park of the different historical periods, the history of the mines, the history of the industry, evolution of the mining techniques and the extraction cycle, the geological history, the history of particular spaces (e.g. the Rocca San Silvestro, Temperino Mine) the local history of the area in the different historical periods, the social history of the workers and the history of the work organization, miners' salary and organization of working hours, working shifts; miners' illnesses; medical check-us and accidents at work, union struggles. The textual dimension is also represented through different documents of the closed organization.

A lot of attention is paid to the history of the closed organization and different working practices of the last historical period of the mine (from 1950s till the closure of the mine) and to the period when the Rocca San Silvestro was functioning (around X-XIV centuries). These part of the history of the organization is narrated very well through different exhibitions but the other part of the history of the organization are touched very superficially.

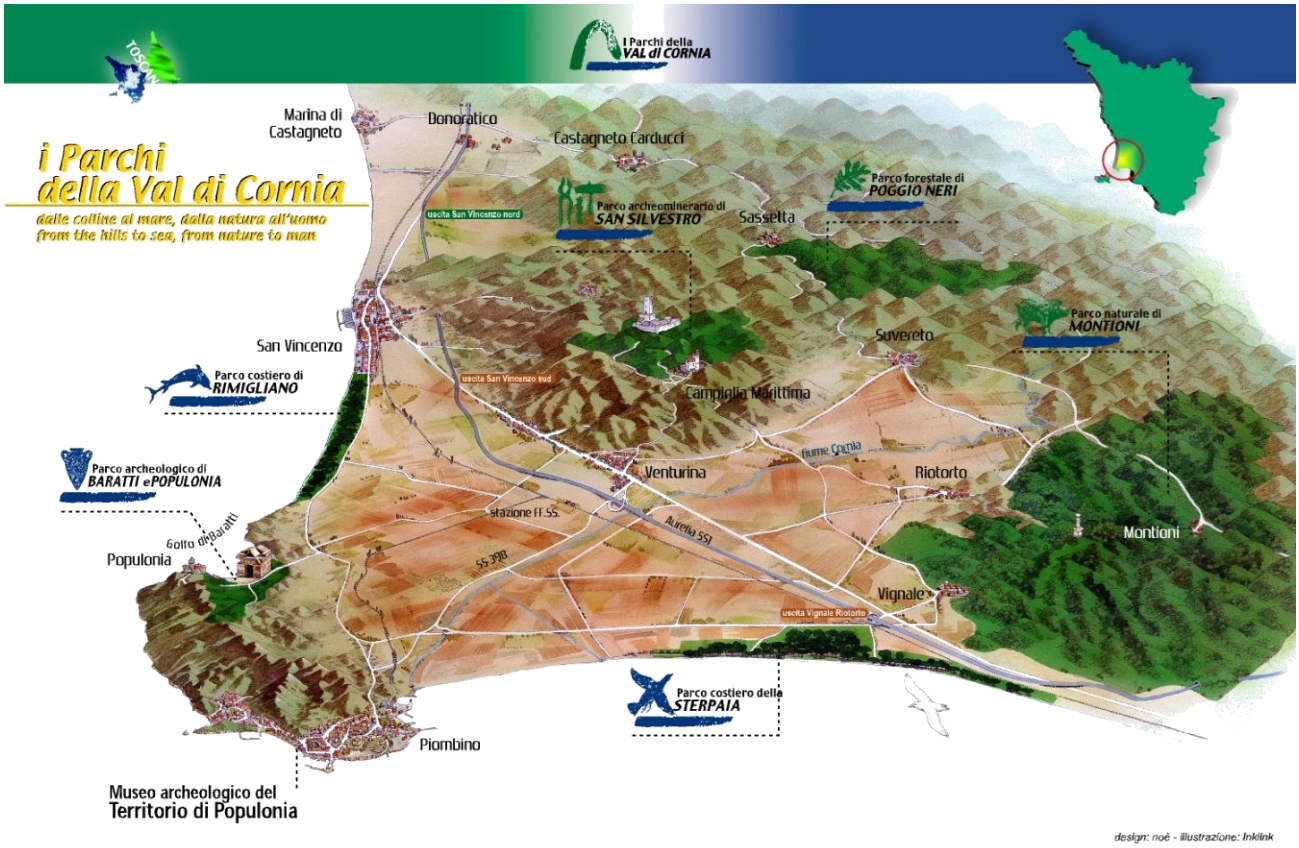
There is a high number of facilities proposed to a visitor (bar/restaurant, reception hall and ticket office, hostel, documentation center). The only two spaces that are outsourced to the external companies are facilities (bar/restaurant and hostel) and all cultural activities are mainly organized internally.

5.2.4. Governance, financial business model and accountability

The Archaeological Mining Park of San Silvestro is managed by the Val di Cornia Parks S.p.A., a regulatory body of the Val di Cornia parks system. Today Val di Cornia Parks S.p.A. is responsible for two archaeological parks (the archaeological park of Baratti and Populonia and the Archaeological Mines Park of San Silvestro); four natural parks and four museums (see Figure 5.22). It was

established in 1993 with a share capital distributed between the public partners (85%) and some local private entities (15%)[26]. Through the following years the local authorities started to entrust the territories of different parks to the Val di Cornia Parks S.p.A. In 2002 they signed a Convention for the unified management of the services, which states that: "the Municipalities in order to guarantee "the unified nature of the project are committed to jointly elaborate any act concerning the system o parks" (Convenzione, 2002).

Figure 5.22. Map of the Val di Cornia Parks system.



Source: Website of the Val di Cornia Parks S.p.A. (Parchi Val di Cornia SpA, 2019a).

Two years after the Legislative Decree 42/2004 (D. Lgs. 42/2004) obliged to review the relationship between the parties. It declares that the state-owned archaeological parks can be managed just by the public owned companies. And the Val di Cornia Parks S.p.A. had under its control the state-owned Archaeological Park of Baratti and Populonia, so its juridical status had to be converted into an operational joint venture just of five local authorities without any participation of private

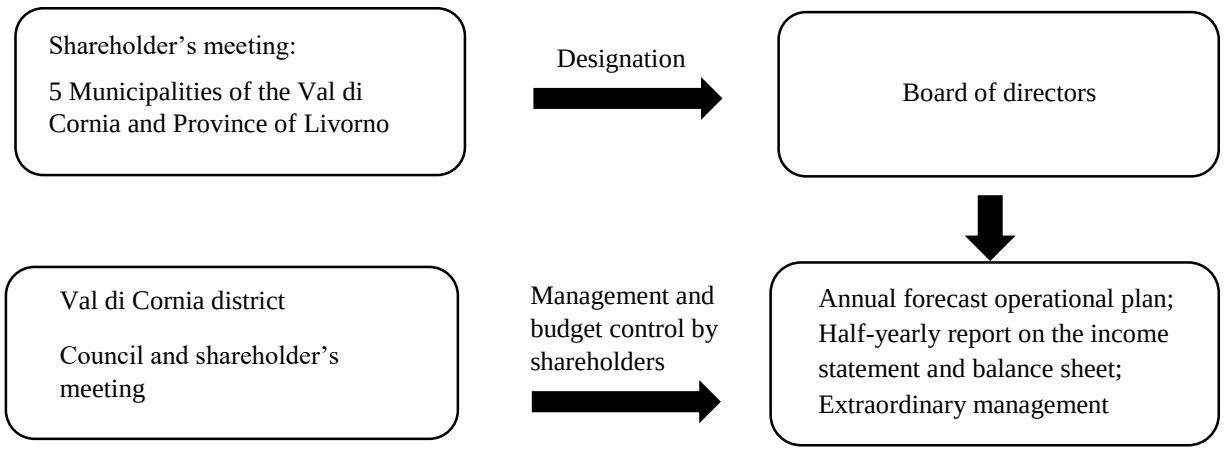
[26] The private companies: Naia Etrusca Snc., "IN-CO Investimenti Costruzioni – Società a responsabilità limitata" and Società Accomandita Lavori Edili Stradali – S.A.L.E.S. SaS.

entities (Guideri & Gasperini, 2011). Another reason for institution of the completely public company was the fact that the Court of Justice with the judgement of 11/01/2005, in C-26/03, established that if a company that is guided by the public administration has also some private shareholders, the public administration "cannot take a control of this company at the same level as it takes control of its own services". So in 2007 the Val di Cornia Parks S.p.A. passed from the public-private company to a so-called 'in house providing' society with a full public participation (Amadei, 2011). The particular characteristics of an 'in-house providing' society is the fact that it allows public bodies to outsource services to the third parties without formal completion of public tenders (Cerquetti, 2012). The Val di Cornia Parks S.p.A. is managing the cultural services with a right to contract out various commercial services such as touristic facilities, food service, ordinary maintenance in order to reduce the costs of the single parks (economies of scale) and to increase the quality of offered services.

The decision to form a unique company that manage the whole system of the parks had several advantages, such as homogeneity of the management, centralization of all crucial functions (management, administration, technical office, marketing office). At the same time, the advantage for the local authorities is guaranteeing the unified management services without burdening the staff of the municipal offices and decreasing the delays or problems usually caused by the bureaucratic procedures of public administrations (Amadei, 2011).

The company's Board of Directors exercises the broadest power for ordinary management, on the basis of the directives imposed by the public shareholders also through the implementation of an annual forecast operating plan previously approved by the Val di Cornia district (Figure 5.23).

Figure 5.23. Governance structure of the Val di Cornia Parks S.p.A.



Source: Luzzati & Sbrilli (2009).

Despite the unitary management carried out by the company, each of six parks maintains its operational autonomy.

Furthermore, creation of the unique regulatory body influence on the number of visitors of each single park and on the overall customer satisfaction. Besides the possibility of a single entrance, the parks system has a "pArcheoCARD" which permits to have 50% reduction on the admission charged in other parks of the system. The ticket prices of the San Silvestro Park are listed in the Table 5.7.

Table 5.7. Ticket costs (2020). Archaeological Mines Park of San Silvestro.

Visit type	Visit description	Ticket cost
Individual visit	Mines tour (Temperino mine and Lanzi-Temperino tunnel)	Full: 17 euro; Reduced: 13 euro
	Full tour of the park	Full: 20 euro; Reduced: 15 euro
	From mines to the Middle Ages (Temperino Mine; Rocca San Silvestro)	Full: 17 euro; Reduced: 13 euro
Group visit (min 20 pax)	Full tour of the park	12 euro/person
	Partial tour of the park (2 of three venues)	9,50 euro/person
School visit	Different educational laboratories	from 10 to 19 euro/person

Source: Website of the Val di Cornia Parks S.p.A. (Parchi Val di Cornia SpA, 2019a).

Another action that raises the promotion of the Park is its inclusion into the National Network of Italian mining parks and museums (ReMi) which objectives are to promote throughout the country the issues of conservation, protection and enhancement of the disused mining heritage, support all initiatives aimed at promotions of Italian mining parks, reach the definition of a reference standard and legislation within the whole country (ISPRA Istituto Superiore per la Protezione e la Ricerca Ambientale, n.d.). The "ReMi Touristic Passport", a special passport that records the number of visited mining parks gives some advantages for the tourists.

The number of visitors attracted from the moment of park inauguration can be found in the Table 5.8. In the last years it has arrived to around 30.000 visitors per year, what makes the Archaeological Mines Park of San Silvestro the second popular after the Archaeological Park of Baratti and Populonia.

Table 5.8. Numbers of visitors: San Silvestro park and Val Di Cornia Parks.

Year	Number of visitors (San Silvestro Park)	Number of visitors (Val di Cornia Parks)	%	Notes
1997	20.473	20.473	100%	Only the Archaeological Mines Park of San Silvestro was opened
1998	24.274	47.915	51%	The Archaeological Park of Baratti and Populonia was also opened
1999	24.631	84.912	29%	
2000	26.700	87.641	30%	
2001	24.081	97.050	25%	Museum of the Castle and of the city of Piombino was also opened
2002	25.071	97.269	26%	
2003	20.676	80.696	26%	
2004	20.711	75.367	27%	
2005	17.287	68.318	25%	
2006	22.842	72.734	31%	
2007	26.407	87.804	30%	
2008	27.354	85.405	32%	
2009	29.066	87.142	33%	Museums of Rocca di Campiglia Marittima were also opened
2010	29.316	90.977	32%	
2011	30.657	89.374	34%	
2012	27.363	79.578	34%	
2013	26.382	74.426	35,4%	
2014	31.941	90.340	35,4%	
2015	30.746	84.179	36,5%	
2016	32.210	83.835	38,4%	
2017	33.568	85.382	39,3%	
2018	31.280	83.982	37,3%	

Source: internal documents of Val di Cornia Parks S.p.A.

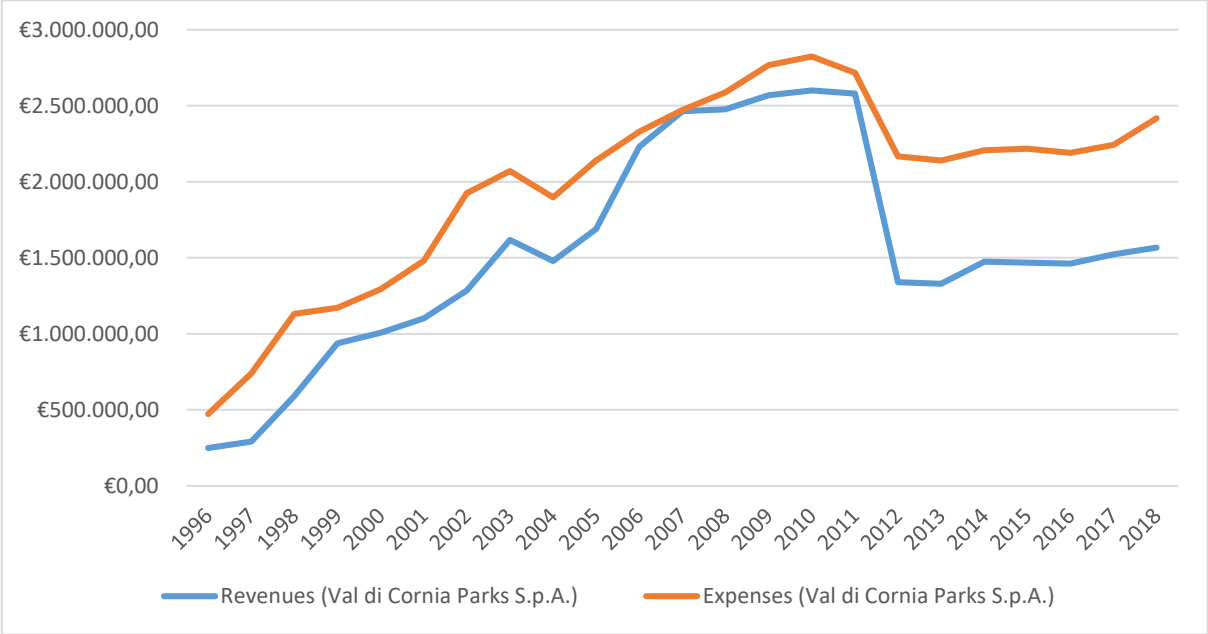
From 2007, at the moment that all parts of the Park were opened, the number of visitors reached an average number of 30 thousand visitors per year. The Park pays a particular attention to families, groups and schools with a wide range of educational activities and workshops.

According to a research conducted by the Val Di Cornia Parks S.p.A. in 2019, 8% of the visitors come from the province of Livorno, 71% - from Italy (mostly, from Tuscany, Lombardy and Veneto) and 21% from abroad (mostly from Germany, Holland and France). More than a half (58%) of the visitors were on vacations nearby, 26% came specially to visit the park, 12% - were passing through and 4% are residents in the area. More than 85% of the visitors came to the Park for the first time.

Mostly, the Park is visited by the families with children or with friends. The analysis showed that one half of the visitors spend more than 2 hours in the Park, 34% of the visitors spend from 1 to 2 hours.

Creation of a unique body responsible for the management of the parks system permitted also to centralize revenues and expenses. The convention of 2002 that was signed between the five municipalities and the Val di Cornia Parks S.p.A. established that "the charges required for the unified management of the cultural and environmental heritage of the park system will be shared among the municipalities in proportion of the permanent residents' number". Until 2011 main revenue sources were: parking (41%), ticketing and merchandising (34%), rental and concessions contracts (22%), other (3%). These permitted the company to be (almost) financially sustainable till 2011. All the revenues and expenses can be viewed in the Figure 5.24.

Figure 5.24. Revenues and expenses of the Val di Cornia Parks S.p.A. (1997-2018).



Source: internal documents of Val di Cornia Parks S.p.A.

The revenue-expenses ratio drastically reduced after 2011 due to the choice of the Municipality of Piombino to remove parking revenues from the revenues of the Val di Cornia Parks S.p.A. (Guideri, 2014). Afterwards, the municipalities were supposed to make contributions to the company, in reality it did not happen and the company had to reconsider its organizational structure, reduce the number of employees, reduce the opening hours of the parks (Gould & Pyburn, 2017). Several municipalities did not agree with the cross-subsidizing of the parks. For instance, the Archaeological Park of San Silvestro has the highest costs within the whole system because of the high maintenance

costs. They had to restructure their budget and reduce some services: opening hours in the winter, no personnel in the low season (from the interview the coordinator of the Archaeological Mines Park of San Silvestro).

5.2.5. Discussion: *between musealization and sustainability*

The Park is located within the territory of Campiglia Marittima, in the province of Livorno. After the mining site was abandoned, the whole area risked to become an open quarry. Thanks to the interest of the municipality, the creation of an open quarry was avoided by the Local Development Plan through which the Municipality of Campiglia Marittima expressed the willingness to enhance the territory and create an archaeological park.

The project of the Park was executed thanks to interest of the local authorities in the enhancement of the territory, European commission funds and contributions of the municipalities, research projects of the scientists of the University of Siena and the speleologists of the Natural Science Museum of Livorno.

One important reason that encouraged the local authorities in that period was the presence of the steel industry in Piombino. The director of the Val di Cornia Parks S.p.A.:

> "Let's say this (creation of the parks' system) was also possible thanks to the fact that there was the Piombino industry in the area. The industry was saturating the occupation in the critical years. In the 60s-70s the worst times occurred in Italy with devastation of the landscape and the territory, overbuilding, coasts and heritage destruction. Here there were no problems because people worked. And ironically the industry saved the heritage at that time".

The project is fully public, managed through the in-house providing society. By its nature it is a commercial, profit-making company that is used to manage a sector that is, on the contrary, by its definition - non-profit (Amadei, 2011). It has been made in order to reduce the common expenses (economies of scale) of various parks in order to be able to invest in the promotional campaigns, communication, personnel and raise the quality of the proposed services. According to the literature, till now this system is a best practice in the field of cultural heritage management in a form of a network in Italy (Cerquetti, 2012), one of the most innovative forms of cultural and environmental heritage management by the local authorities. The unified system has allowed to enhance not just the single institutions of the territory but all cultural and naturalistic heritage in its complexity.

Nevertheless, some political issues and the resistance of the local authorities arose after several years. Till 2011 the self-financing capacity of the Val di Cornia Parks S.p.A reached almost 100%.

Then the Municipality of Piombino decided to remove parking revenues from the revenues of the Val di Cornia Parks S.p.A. The parking revenues were around 40% of the total revenues, so the revenue-expenses ratio drastically reduced. According to the convention, in that case the local municipalities had to cover this difference in proportion to the numbers of residents of each city. The San Silvestro Park has the highest costs within the whole system because of the high maintenance costs of the structures. Other municipalities did not agree on the logics of cross-subsiding and reduced their contributions. As a consequence, the Park had to restructure its budget and reduce some services (from the interview with the director of the San Silvestro Park).

From the musealization point of view the recovery of the San Silvestro Park was a complex project. Starting from the discovery and the restoration of the Rocca San Silvestro, different areas of archaeological and naturalistic interest were recovered. The Park proposes visits of different characters: various museums on the history of the mining activities, the history of miners, the history of the industry; two underground paths (one pedestrian and another accessible with a train); trekking paths; different laboratories and concerts in the summer. Only three spaces within the park have to be visited with a guided tour (two underground paths and the Rocca San Silvestro), other parts of the Park are accessible for free.

The motivations of the site's preservation identified from the literature review in the first part of the chapter are all partly present in the musealization project. Even if at the moment of the abandonment various structures of the former mining site were in a complete state of neglect, an important attention was paid to the recovery of architectural features. The history of the local development of the area and the industry was preserved through various exhibitions.

The organizational history of the former mining site is partly narrated in the reuse project. A lot of attention has been paid to the history of the closed organization and different working practices of the last historical period of the mine (from 1950s till the closure of the mine) and to the period when the Rocca San Silvestro was functioning (around the X-XIV centuries), but the other periods of the organizational history have been touched superficially. These part of the history of the organization is narrated very well through different exhibitions but the other part of the history of the organization are touched very superficially. The organizational history has been narrated partially with an aim, even if probably unintentional, of selecting which part of the history to remember and which – to forget.

Another political issue avoids preservation of one part of the Park, the abandoned Etruscan Mines industrial village because of the presence of the material crushing plants of the still active quarry. Requalification of this area was included in the initial Masterplan, but have not been realized yet.

5.3. Maintaining initial use: *Manifattura dei Marinati in Comacchio*

Manifattura dei Marinati was founded in the beginning of the XX century in Comacchio in the province of Ferrara. For centuries eel fishing and production was the only income source for the local community. Before the end of the XIX century eel production was run by various families who carried out manufacturing, marinating, salting and the consequent sale. At that time eel fishing and production was under the legal protection. *Manifattura dei Marinati* was constructed in order to reunite the ancient tradition under one roof.

After being abandoned in 1991, its reuse project evolved starting from 2000 from a 'classic' museum regeneration strategy to a 'live' museum where musealization of the industrial history and production of ancient products are executed in the same space.

Figure 5.25. Manifattura dei Marinati in Comacchio.

Source: author's photo (2020).

5.3.1. Historical background and abandonment period

The history of the Comacchio area is marked with the eel fishing and production already for the centuries. According to Zamboni (2001), "The economy, culture and urban structure of Comacchio are the result of the close interpenetration between the waters of the valleys and the management of

the plant, the cultivation of the lagoon, fishing, protection and trade of the product, direction and technical-administrative organization".

Before the end of the XIX century fish production industry was ran by families-manufactures (so-called *fabbricatori*) who carried out manufacturing, marinating, salting, and consequent sale, at or under the exclusive right regime. Already at that time eel fishing was under the legal protection. For instance, the fish could be manufactured only in Comacchio and the Comacchio fishers could not work outside from the city.

Comacchio had no land area. It was completely surrounded by the lagoon. The marinating factories were located inside the city and were representing a crucial element of its urbanization (Zamboni, 2001). In 1853, there were 21 families-manufactures. After several ownership shifts (the Municipality of Comacchio – from 1797 till 1827; the Apostolic Camera – 1827 till 1859; the Kingdom of Italy – till 1868), in 1868 the Comacchio Valleys (Lagoons) definitively passed to the Municipality of Comacchio.

In 1871, the difficulties of the direct management forced the local authority to rent the Valleys. In that years, the fish production was managed though a complicated plan (signed in 1876) which established:

> *The tenants of all the fish coming from the Comacchio and Mani valleys will be able to put a fourth part into the factory, without any restriction, unless it is served inside the City of Commachio and by means of all Comacchiesi workers.*
>
> *The other three quarters will be assigned to the class of fish manufacturers made up of 21 families: among these "the tenants will be able to choose each year 12 different companies to which the marinating operation will be committed with the same allocation of the marinating fish in their factories", whose businesses must always be divided, distinguished and "exercised in twelve different rooms, managed by twelve separate families*.
>
> *The nine companies left "out of business" will be paid a check by the chosen ones* (Zamboni, 2001).

It was a closed production system that was supporting employment of the local population and preventing monopoly. Besides 12 families-manufactures and the factory, there was a "foreign" fish factory of Luigi Bellini, which worked with the fish coming from outside of the Comacchio Valley. In 1884 Luigi Bellini rented the Valleys of Comacchio. After four years he built "Fabbrica delle Valli di Comacchio" plant near the Trepponti bridge with 12 furnaces in a line, one for each family. The advantages of the merger of eel production under one roof were unification of the offices, greater

control of all industrial processes, direct guidance of the sales and shipping operations (Cecchini, 2011).

After a catastrophic natural event of brackishness that caused fish mortality in 1891, in 1892 Luigi Bellini ceased the management of the plant. The Valleys reached the decay. And for several years the site was managed directly by the Municipality of Comacchio (Zamboni, 2011).

Then the plant was rent out to Finzi-Palazza and C. Company (1896-1903) and in 1904 to the company Bonaiuto Vitali e C. In 1905 the latter started building the industrial complex behind "the Logge dei Cappuccini" where the administrative headquarters of the company, the manor house, fish marinating and the fresh fish market were located.

From 1908 to 1933 the property of the plant was transferred several times from one family to another (1912-1919 – Parodi; from 1921 - Soc. Anselmo Cornia e C.i; Nino Felletti-Spadazzi e Mario Samaritani; from 1925 - Vito Felletti-Spadazzi; 1932 - *Società per la Bonifica dei Terreni Ferraresi e per Imprese Agricole*) until it passed to the Municipality of Comacchio in 1933. From that moment it was managed by the Valli di Comacchio company.

The factory was subject of the extensive damage caused in the period of the Second World War, so from 1945 to 1955 it underwent modernization and different architectural transformations.

In 1978 the S.I.VAL.CO. took over the management of the valleys. S.I.VAL.CO. (Society of Valli Comacchiesi Fish Farm) was the joint stock company established in 1973 between the Region, the Municipality of Comacchio, the Province of Ferrara, E.R.S.A. and SO.P.AL. for the management of experimental fishing facilities (Cecchini, 2011).

In the beginning of the 1990s S.I.VAL.CO. was replaced by the Consorzio Azienda Speciale Valli di Comacchio (consortium between the Municipality of Comacchio and the Province of Ferrara). In that years the industrial plant was not anymore corresponding to the sanitary requirements and the production activities could not be executed anymore. The production was outsourced to a company called Regnoli. The eels brought from Comacchio were operated and sold by this company (from the interview with the official of the Regional Park of the Po Delta).

In 1991 the manufacturing plant was closed and dismissed. The ancient production activity ceased to exist in Comacchio.

The cultural significance of the site

The literature on the *Manifattura dei Marinati* encompasses its value in connection to three dimensions (identified in the chapter 2) that stands behind the motivation of the site's conservation.

From the point of the view of the importance of *architectural dimension*, the main space of the former industrial site, *la Sala dei Fuochi*, repeats with a slight difference the space "of the grandiose eel marinating plant" that Luigi Bellini had set up in the end of the XIX century near the Trepponti bridge (Cecchini, 2011). The plant is situated behind the *Loggiato dei Cappucini*, an arcade about 400 meters long with 142 arches supported with marble columns. It was built in 1647 at the behest of the Comacchio people to thanks the Madonna for the end of the plague.

The eel fishing and production industry was crucial for the *economic development of the area* for many centuries and the plant represents the first industrialization of many small fishing activities of the area. For centuries the Comacchio Valleys were the only income source for the local population. There were no other industries in Comacchio (Zamboni, 2011).

The history of the plant has to be preserved also because of the its *importance of the working conditions and practices*. The production cycle remained the same for centuries. The factory had a certain administrative autonomy in the work organization and in the purchase of different materials. The work within the plant in the past can be characterized by the well-defined division of responsibilities (Cecchini, 2011; Zamboni, 2001).

5.3.2. Reuse project and its implementation

In the end of the 1990s, the Municipality of Comacchio obtained a funding of around 3 million lire through an urban recovery plant (PRU) of the Ministry of Public works to recover the area of the *Manifattura dei Marinati*. This funding was directed to recover one area of the site (Hall of Fires) where originally the eel was cooked. At that time, the idea was to open a museum dedicated to the history of the eel production. The Municipality of Comacchio managed the implementation phase from 2000 till 2004. In 2004 the management of the Valleys (together with the plant) passed to the Regional Park of the Po Delta which obtained a regional co-financing directed to enlarge already planned museum activities with a small Slow Food Laboratory of the Marinated Eel of the Comacchio Valleys and a thematic visitor center of the park. The total investment was 516,000 euro with the regional co-financing of 80%. Within the restoration process, an information point, an area for the sale of the typical products and a museum exhibition were set up.

One of the Park's objectives is the preservation and enhancement of the typical products of the area and their traditions (from the interview with Luigi Tomasi, official of the Regional Park of the Po Delta). So the idea was to reanimate the authentic traditional technique of the eel fishing and production. The traditional technique was replaced with industrial production in the end of 1960s. Furthermore, the eel production was brought outside from Comacchio in the beginning of 1990s and

many local families started to produce the marinated eel again at home. So the staff of the Regional Park of the Po Delta began a collection of the testimonies of the elderly local people and in that way reconstructing the old production process. In that way the ancient recipe was reconstructed. The Park's idea was to create a sort of consortium of the marinated eel producers. Various producers of the fresh eel were contacted and invited to execute their activity inside the plant. But, unfortunately, no one joined. The reason was probably too high costs of the installation of new production line in respect to the small quantities of the fished eel. Already at that time the 'vintage' production seemed to be financially unsustainable. At the end the only producer was the Park. They had to reconstruct the supply chain, the production cycle, commercial relations and business model of the production activity (from the interview with the official of the Regional Park of the Po Delta).

The Laboratory was inaugurated in 2004 and was limited to a restricted period of the year (October-January). In other period of the year spaces could be used for different exhibitions and public events. All production cycle phases were concentrated in the Hall of Fires. At that time museum activities included an exhibition path where various steps of the ancient production cycle were narrated. In 2004 the idea of the reuse project evolved from a "classic" to a "live" museum.

Two activities of the new reuse project: museum and production, were kept separate almost from the very beginning. In 2008 the museum activities, as an already completed and mature project, was externalized to an ATI (Temporary Business Association), composed by the Aqua company and the cooperative Atlantide (from the interview with the official of the Regional Park of the Po Delta).

In that period the production was limited to small numbers, the management of the whole system by the public body with many bureaucratic constrains, the retirement of the elderly personnel led in several years to a certain moment when the internal management was not sustainable any more (from the interview with Luigi Tomasi). The decision to outsource the production activities was taken. In 2015 the Regional Park of the Po Delta under the Pact for Work and Economic-social Development of the Municipality of Comacchio "Project Comacchio 2015-2020" has launched a call, directed at the social cooperatives of the type B[27]. The call was won by the social cooperative "Work and services".

The activities of two associations in the same space caused various difficulties in the years, like overlapping activities, internal competition for events. This led to the fact that in 2018 there was launched another call that reunited both activities (the museum and the production one) and it was

[27] Cooperative of type B is a cooperative that promotes The cooperatives that carry out production activities aimed at the integration into the work of people with physical and mental disadvantages, single mothers, former prisoners, former drug addicts, etc.

won by the cooperative "Work and services". They have maintained and enlarged the museum area and have also enlarged fish production.

In the Table 5.9 the main events of the site's history and the reuse project are summarized.

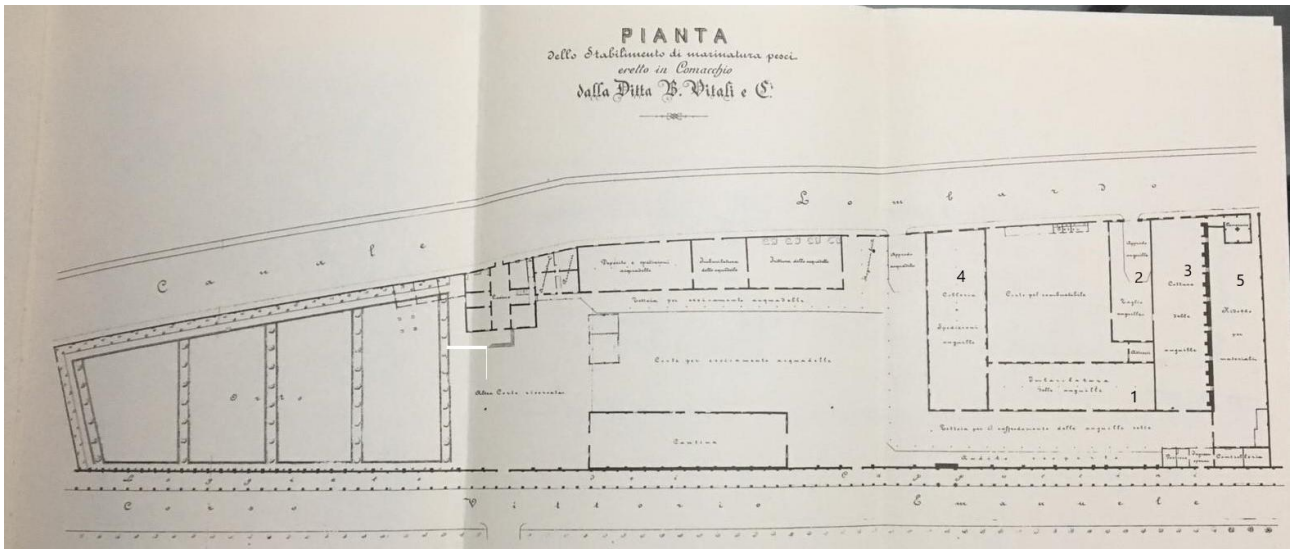
Table 5.9. Historical timeline of the Manifattura dei Marinati.

Date	Events
1905	Construction of the plant by the company Bonaiuto Vitali & C.
1908-1933	Property of the plant was transferred several times (Soc. Anselmo Cornia e C.i; Nino Felletti-Spadazzi e Mario Samaritani; Vito Felletti-Spadazzi; Società per la Bonifica dei Terreni Ferraresi e per Imprese Agricole).
1933	Transfer of the plants' property to the Municipality of Comacchio.
1933-1991	Management of the plant by the Valli di Comacchio company, then Sivalco (Society of Valli Comacchiesi Fish Farm).
1991	Outsourcing of the production activities outside Comacchio; closure and abandonment of the plant.
2000	Restoration of the plant by the Municipality of Comacchio.
2003	Set up of the Slow Food Laboratory of the Marinated Eel of the Comacchio Valleys and a museum exhibition by the Regional Park of the Po Delta.
2004	Inauguration of the Slow Food Laboratory.
2008	The management of the museum activities was outsourced.
2015	The management of the production activities was entrusted to the social cooperative "Work and services".
2018	Management of the both museum and production activities was entrusted to the social cooperative "Work and services".

5.3.3. Between tangible and intangible heritage in the process of musealization

The restored part occupies 1.400 sq. m. out of 3.400 sq. m. In the Figure 5.26 all restored spaces are listed with the indication of their past and present uses. The following paragraphs are dedicated to the description of different musealization techniques within the new reuse project (for a complete analysis of all spaces see Appendix 6).

Figure 5.26. *Manifattura dei Marinati*. Map of the site.



Current use (Past use)

1. Entrance (Entrance); **2. Fossa Marinatura -** Museum exhibition (pit) **3. Hall of Fires -** Museum exhibition and production (production); **4. Vinegar Hall** – Museum exhibition (deposit and accessory room for production) **5. Cenerario** – yard with fridge cell (deposit was residues from the burning of the wood). All other parts are abandoned, except one building not visible on the map (as it was constructed later) – in the past it was a fish market, now there are offices of the Regional Park of the Po Delta.

Source: elaboration of the map of the company Bonaiuto Vitali e C. (Zamboni, 2001).

The entrance was maintained as in the past (n. 1., Figure 5.26). Now there is located a ticket office, a company shop and information point on all activities of the Regional Park of the Po Delta (see Figure 5.27).

Figure 5.27. *Manifattura dei Marinati*: ticket office and company shop (on the left); *Fossa Marinatura* (on the right).

Source: author's photo (2020).

In the past *Fossa Marinatura* (n. 2., Figure 5.26) was the pit where the boats loaded with eels arrived. On the bottom pitch of the pit there were cutters which behead the eel. Within the regeneration project this space was dedicated to the museum activities (see Figure 5.27).

The museum exhibition "From their life to ours" was created by the Association Antoni Gaudi in collaboration with the social cooperative "Work and Services" and the Enrico Zanotti Foundation. It was possible thanks to the public call the G.P.T. 2018 (*Giovani per il territorio*) launched by the Institute of Cultural Heritage of the Emilia Romagna Region. The exhibition consists of various ancient equipment accompanied with didactic panels (both in Italian and in English). Through different fishing phases they help to understand the traditional method of fish processing from its fishing, cooking and marinating phases.

In the loft space (visible in the Figure 5.27) two videos are projected: one dedicated to the current production activities, another one is a piece of the film "The River Girl" with Sophia Loren that was partly filmed inside the plant.

The Hall of Fires (n. 3., Figure 5.26) was dedicated to the eel production in the past (see Figure 5.28). There are 12 large fireplaces arranged on one line (the number explicitly recalls 12 families-manufacturers). These fireplaces correspond to 12 smokestacks on the external part of the site built with exposed bricks and about 3.5 m high, corresponding to the twelve chimneys. On the roof there are two large skylights that suck in the smoke and vapors that develop during the cooking of the eels. All these details were preserved within the regeneration project.

Figure 5.28. *Manifattura dei Marinati*. The Hall of Fires (on the left) and the Vinegar Hall (on the right).

Source: on the left – author's photo (2020); on the right – (Work and Services - i Marinati di Comacchio, 2020).

Now the space is partly dedicated to the museum activities and in part to the eel production. Museum exhibition consists of various descriptive panels placed, ancient equipment and video interviews with some ex-workers of the area. Two videos are based on the mix of old video shootings and the images of the current days, interrupted by the small interviews with the ex-workers and some elderly people of the area. The interviews give more a personal perception of the importance of eel in the economic development of the area, rather than putting attention to the working practices in the site.

Production activities are structured in the same space with the museum activities, so the whole production cycle is visible for the visitors. According to the convention signed with the Municipality of Comacchio, the cooperative is obliged to execute the production on at least twenty Sundays within a year in order to give more visibility of the production process to the visitors.

In October 2020 the Vinegar Hall was inaugurated (n. 4., Figure 5.26). It continues the museum itinerary with the large vats and barrels for the brine exposed (see Figure 5.28). Before this space was restored, it was not accessible for the public. But often the door was kept open and the vinegar was spilled on the floor in order to create a particular experience for the visitors (from the interview with the official of the Regional Park of the Po Delta).

In addition, in the corridors of the plant there is a photo exhibition of the eel fishing in the Comacchio Valley.

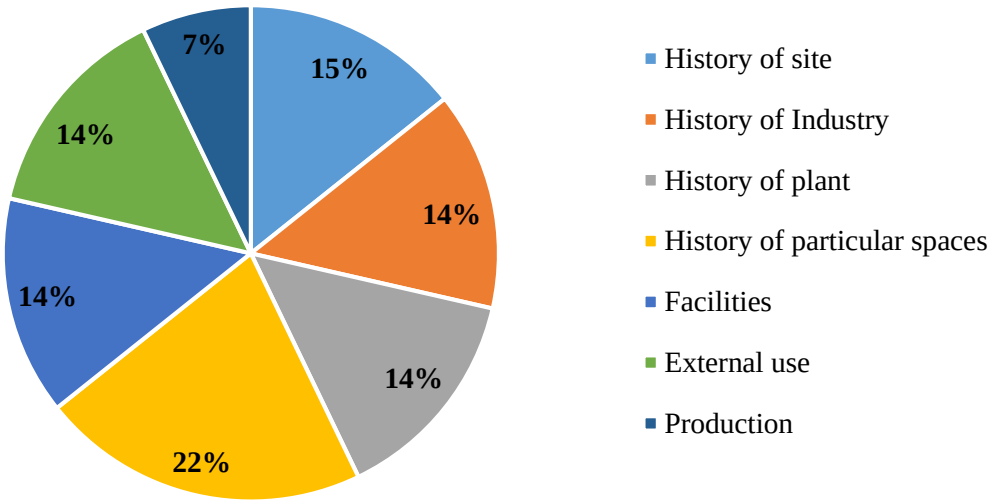
Alongside the external wall of the site the is a fridge cell where the products for sale are stored (n. 5., Figure 5.26). In the past it was the cinerary where the residues from the burning of the wood were deposited.

One part of the plant is abandoned (around 2.000 sq. m.). And some buildings of the plant were restored and are in use of the Regional Park of the Po Delta (the Former Fish Market is now used as administrative offices of the Regional Park).

The most powerful musealization method applied within regeneration project is the maintenance of the production activities and their execution in front of the visitors. The museum exhibition is mostly dedicated to the history of the plant and to the various details of the production cycle: description of different professions, different ancient artifacts and the stages of the production cycle. The whole distribution of different space destinations can be viewed in the Figure 5.29.

The history of the site is narrated through a complex of different methods: old photos, ancient maps that accompany descriptive panels. There are several videos reproduced within the museum exhibition: a part of the film with Sophia Loren partly shot inside the plant; a video clip dedicated to the current production activities; and couple of video interviews with ex-workers. Almost in all spaces of the site the original artifacts are exposed.

Figure 5.29. Space destinations within the reuse project of the *Manifattura dei Marinati*.



The narration of the intangible aspect ('level of content') encompasses the history of the plant of the different historical periods, the history of the industry, the history of particular spaces. A lot of attention is paid to the explanation of the production cycle which has been maintained also in the current production. Nevertheless, there is no information on the industrial production executed from the 1960s till the closure of the plant. This is kind of selecting of "what to remember" and "what to forget" and is similar to the logic of the corporate museums. Little attention is dedicated to the organizational history of the plant, different working practices.

5.3.4. Governance, financial business model and accountability

The governance structure of the reuse project is characterized mainly by outsourcing. From 1933 the site is a property of the Municipality of Comacchio. In 2003 the Municipality of Comacchio signed a concession contract with the Regional Park of the Po Delta for the management of the Comacchio Valleys which included also the management of the *Manifattura dei Marinati*. After the site's recovery, set up of the museum exhibition and launch of a small laboratory dedicated to the production of the traditional products, the Regional Park outsourced, firstly, the museum activities (2008) and then also the production (2015). This was caused by the difficulties of the direct management by the public authority: lack of internal personnel, complex bureaucratic procedures that had to be followed by the public authority (from the interview with the official of the Regional Park of the Po Delta).

In 2018 the Park decided to outsource both the museum and production activities to one actor, "Work and Services" (who already managed the production from 2015). At the same time, the "Work and Services" immediately outsourced the museum activities to another association.

The cooperative has a control on the human resources and financial autonomy. But its financial business model is linked to the conditions introduced by the Regional Park through the convention.

The first convention was signed in 2015 (Ente di Gestione per i Parchi e la Biodiversità - Delta del Po, 2015). It established that the concessionaire had to maintain production of the traditional marinating products (marinated eel, marinated big-scale san smelt, marinated anchovy), based on the Slow Food guidelines. The fish used for the production have to come exclusively from the Comacchio Valleys. At the same time the cooperative had a right to launch a new line of products that have to be marked with another logo though. The expenses that the concessionaire had to pay to the Regional Park were: the rent (500 euro per year), fixed utility costs (5000 euro per year) and the raw material cost (for the traditional products) that was provided by the Park. The prices of the traditional products were imposed by the Regional Park (will be discussed later).

A new concession of 2018 (Ente di Gestione per i Parchi e la Biodiversità - Delta del Po, 2018) consisted in outsourcing of both museum and production activities. The expenses that the concessionaire had to pay to the Regional Park were changed: the rent (10.500 euro per year) and fixed utility costs (20.000 per year). This was calculated based on the revenues of the previous years. The cooperative had to guarantee the purchase of a certain quantity of fish (based on the medium quantity of the last years: minimum 500 kg of anchovy and minimum 300 kg of big-scale san smelt). The cooperative has to provide a certain number of the free final product for the Park. The concessionaire is obliged to execute the production for at least 20 Sundays (or holidays) in order to give more visibility to the visitors. The rental costs of the spaces for private events are imposed by the convention.

According to the convention signed between the cooperative and association on the museum activities, the association pays 30% of the total rent (rent and fixed utility costs) (from the interview with Alessandro Menegatti, president of the "Work and Services" cooperative). Museum ticket costs are also imposed by the Regional Park: 4,5 euro for a full ticket and 2,5 euro for a reduced-price ticket. The museum is open all year round. In spring and autumn, the museum offers guided tours to the production spaces with degustation (8 euro - full ticket; 4 euro – reduced-price ticket). The museum spaces can be rent for different events and the production spaces for cooking classes. In average the museum attracts 16-18.000 visitors per year.

The prices of the raw material and the final prices of the traditional products are listed in the Table 5.10.

Table 5.10. Prices of the traditional products of the Comacchio Valleys.

Product	Purchase price of the products (euro/kg without VAT)	Drained Weight (gr) of the final product	Price (euro, VAT included) of the final product in Comacchio	Price (euro, VAT included) of the final product outside Comacchio
Marinated eel	15	200	No	19,20
		500	24,00	26,00
		1000	45,00	66,70
Salted and marinated anchovy	3	200	No	11,90
		530	16,00	16,00
Fried and marinated big-scale sand smelt	5	500	15,00	17,90

Fried and marinated big-scale san smelt is out of production from 2016.
Source: internal documents of the cooperative "Work and Services" and the concession contract (Ente di Gestione per i Parchi e la Biodiversità - Delta del Po, 2018).

Through the convention of 2015 the Regional Park imposed the market prices of the traditional products both for Comacchio area and for other markets. In the convention 2018 only the market prices for Comacchio area are imposed (column 4 in the Table 5.10). The prices for the areas outside of Comacchio could be imposed by the cooperative (the last column in the Table 5.10), taking into account its own financial sustainability and the market conditions (Ente di Gestione per i Parchi e la Biodiversità - Delta del Po, 2018). The concessionaire has to guarantee the sale of at least 50% of the traditional products in Comacchio.

The production of the traditional products was not financially sustainable. All the expenses and revenues for these products are visible in the Table 5.11.

According to the convention of 2015 the concessionaire was obliged to organize fish market in order to sell the products provided directly by the Regional Park. This activity was also financially not sustainable. This is caused also because of the difference between the purchase price of eel and its market price is very low. All the expenses and revenues for these products are visible in the Table 5.11. From 2018 the market was not organized anymore.

The business model of the reuse project has evolved in the years. The initial model was 'classic' museum with revenues based only on ticketing and private events. It was possible because the site was managed by the public authority who paid the income gap. Then, the model was changed into a

'eco-museum' with a small laboratory. The production of the laboratory in the years from 2004 till 2015 was limited to 10-12 quintals of eels per year[28].

Table 5.11. Revenues and expenses of the traditional production. *Manifattura dei Marinati*.

		2015	2016	2017	2018	2019
Expenses. Traditional production	Eels	58.288,00	63.182,00	79.980,00	81.435,00	91.395,00
	Anchovy	3.296,00	2.016,00	1.089,00	2.016,00	3.532,00
	Mullet	369,60	0,00	0,00	0,00	0,00
	Boxes	6.971,58	6.818,46	6.865,86	3.327,30	6.073,72
	Vinegar	1.235,40	1.031,32	1.133,35	1.533,20	2.340,00
	Cardboard	544,00	536,00	700,00	684,00	1.681,90
	Salt	210,00	298,90	309,75	415,00	539,50
	Sticker	23,55	23,55	23,55	25,12	70,65
	Label	640,50	294,00	475,00	472,50	840,00
	Commercial agent commission	2.000,00	2.011,80	2.251,72	1.947,00	14.494,17
	Cans	13.983,93	11.788,45	13.383,40	13.684,45	32.165,70
	Wood	1.425,00	2.245,90	1.835,70	2.275,00	2.600,00
	Staff clothing	1.247,88	73,92	370,76	390,56	416,00
	Olive oil and flour	802,35	514,90	337,40	535,85	819,55
	Shipping	1.380,60	1.468,69	2.665,22	1.468,69	7.026,00
	Extermination	380,00	380,00	480,00	1.155,00	1.155,00
	Cleaning service	200,00	1.083,34	1.133,25	1.704,00	1.715,00
	Leaflet	0,00	324,80	516,00	612,00	1.487,00
	Fair	320,00	4.150,00	3.786,08	5.263,00	9.583,00
	Hazard analysis and critical control points	0,00	1.448,45	200,00	1.202,00	2.138,00
	Disposal	150,00	150,00	776,00	760,00	812,00
	Insurance	1.200,00	1.200,00	1.200,00	1.200,00	1.200,00
	Rent	5.000,00	5.000,00	5.000,00	21.000,00	21.000,00
	Personnel cost	48.573,00	45.693,00	50.733,00	50.187,00	54.401,45
	TOTAL	**148.241,39**	**151.733,48**	**175.245,04**	**193.292,67**	**257.485,64**
Revenues. Traditional production	**TOTAL**	**164.353,78**	**148.504,29**	**150.336,02**	**157.015,46**	**228.603,82**
Net income. Traditional production		**16.112,39**	**-3.229,19**	**-24.909,02**	**-36.277,21**	**-28.881,82**
Expenses. Fish market	**TOTAL**	10.786,60	14.260,00	20.470,00		
Revenues. Fish market	**TOTAL**	9.629,47	13.379,70	19.776,00		
Net income		**-1.157,13**	**-880,30**	**-694,00**		

Source: internal documents of the cooperative "Work and Services".

[28] Just to have an idea, the production of eel in the 20th century when the factory was functioning reached 2700 quintals per year.

This model was functioning also because the site was managed by the public authority, who paid the income gap. When the management of both museum and production activities was outsourced, the concessionaire implemented several changes to the financial business model. Firstly, the production of the traditional products was enlarged to 60 quintals. Secondly, the cooperative introduced new cans (200 gr for the marinated eel and 200 gr for salted and marinated anchovy) in order to enlarge the quantity of consumers.

Thirdly, considering the fact that the purchase prices of the products imposed by the Regional Park are high and the revenues from the sale of these products were low, the cooperative decided to launch a new line of products. The list of the new products with their market prices are indicated in the Table 5.12.

Table 5.12. Prices of the new products of the *Manifattura Marinati*.

	Product	**Drained weight (gr)**	**Price (euro, VAT included)**
Products of the Comacchio Valleys	Smoked eel	100	10,90
Products of the Adriatic sea	Marinated anchovy	100	7,90
		180	11,00
		1000	44,70
	Fried and marinated sardines	180	11,00
		1000	36,00

Source: internal documents of the cooperative “Work and Services”.

All these changes were introduced in order to reach financial sustainability. As Alessandro Menegatti, the President of the Cooperative noticed in the interview:

“What makes us stand out are the new products, not the traditional production”.

The cooperative also enlarged the sales network (reaching 100 sale point throughout Italy). They have launched the process of product valorization through participation to the fairs and festivals, organization of the “Marinated Fish Festival” Day (a public manifestation which is organized once per year with a participation of different local actors).

From 2017 one new product was introduced every year (anchovies in 2017; sardines in 2018 and eels in 2019). All the expenses and revenues of the new production are listed in the Table 5.13.

Table 5.13. Revenues and expenses of the new production. Manifattura dei Marinati.

		2017	2018	2019
Expenses. New products line	Anchovy	4.269,30	6.496,00	9.404,00
	Sardines		280,00	2.030,00
	Eels			3.000,00
	Boxes	1.093,15	1.675,68	3.128,16
	Vinegar	477,00	1.100,00	1.636,80
	Cardboard	253,00	363,00	1.092,30
	Salt	124,50	228,25	340,30
	Sticker	7,85	12,56	37,68
	Labels	367,50	483,00	840,00
	Commercial agent commission		840,00	7.469,48
	Cans	2.885,48	4.414,61	8.721,20
	Smoking			1.000,00
	Olive oil and flour	1.112,74	1.645,96	5.113,55
	Personnel cost	20.000,00	29.000,00	35.600,00
	TOTAL	**30590,52**	**46539,06**	**79413,47**
Revenues. New products line	Anchovy	32628,12	46528,44	70201,32
	Sardines		3486,84	23167,20
	Eels			12478,00
	Contribution start up from Fondazione Cattolica	10000,00	10000,00	
	Contribution Banca D'Italia	5000,00	5000,00	
	Contribution Progetto Speciality Italia		12000,00	12000,00
	TOTAL	**47628,12**	**77015,28**	**117846,52**
Net income		**17037,60**	**30476,22**	**38433,05**

Source: internal documents of the cooperative “Work and Services”.

In 2019 there was a visible growth in the revenues due to the enlargement of the production with the new products and due to increase of the number of the sales points (see Table 5.14). The latter was possible thanks to the market survey executed by the cooperative and a high investment in the work of the commercial agent (see ‘expenses’ in the Table 5.11).

Table 5.14. Revenues and expenses of the *Manifattura dei Marinati*.

		2015	**2016**	**2017**	**2018**	**2019**
Expenses	Traditional production	148.241,39	151.733,48	175.245,04	193.292,67	257.485,64
	Fish market	10.786,60	14.260,00	20.470,00		
	New production			30590,52	46539,06	79413,47
	TOTAL	**159027,99**	**165993,48**	**226305,56**	**239831,73**	**336899,11**
Revenues	Traditional production	164.353,78	148.504,29	150.336,02	157.015,46	228.603,82
	Fish market	9.629,47	13.379,70	19.776,00		
	New production			47628,12	77015,28	117846,52
	TOTAL	173983,25	161883,99	217740,14	234030,74	346450,34
Net income		**14955,26**	**-4109,49**	**-8565,42**	**-5800,99**	**9551,23**

Source: internal documents of the cooperative "Work and Services".

There is a clear logic of cross-subsidizing. The loss in the production of traditional products has been covered with the production of the new line and the contributions received for launching the new products (see Table 5.13). The income gap in the years from 2016 till 2018 was paid by the cooperative "Work and Services" which besides management of the *Manifattura dei Marinati*, have other projects in the Comacchio area (e.g. management of parking, maintenance of green areas).

The COVID-19 emergency has drastically influenced the revenues. If the museum activities were stopped for several months, the production activities were going on. But considering the fact the production is based on the niche products, the demand has drastically reduced. According to the interview with the president of the cooperative "Work and Services" in October 2020 there was already in March an important damage of about 70 thousand euro.

5.3.5. Discussion: *between musealization and sustainability*

The *Manifattura dei Marinati* plant is situated in Comacchio, a 22 thousand inhabitants' town in the province of Ferrara, Emilia Romagna region. Thanks to its location in the lagoon, the eel fishing and production were the core economic development of the Comacchio territory for centuries. After the abandonment period it was almost impossible to imagine any other use for the former industrial site if not one dedicated to the preservation of its history. So thanks to the interest of the public

authorities, the restoration project was launched several years after the site was abandoned. This also played an important role in the state of the buildings' conservation. The reuse project was a dynamic process. It evolved from an idea of a 'classic' museum to a 'live' museum. It is an excellent example of the former industrial site conservation: from preservation of the architectural features, the intangible historical aspects to 'live' preservation of the production activity.

The project has been always under a public control. Even if the governance structure passed from the one of the public authority to outsourcing of all activities to the private actors. The first reuse project was managed by the local authority and was possible thanks to the State public funds. Then the site passed under the management of the Regional Park of the Po Delta which has as one of the objectives preservation of ancient products and their traditions. This helped the Park to get the regional co-financing in order to convert the initial regeneration strategy into the one preserving not just the industrial heritage but also the initial use of the site. Public management occurred difficult because of the bureaucracy and the lack of the personnel and the site was outsourced to the private actors.

The production and museum activities are now managed by the cooperative of type B who in its turn externalized the management of the museum activities to another actor. The earned outcome is based so on the concession rent for the management of the museum activities (30% of the total rent) and the production of the traditional and new products. The cooperative has a complete control over the human resources and a partial financial autonomy. It is partial because of the several conditions imposed by the Regional Park in the concession contract. The important part is the maintenance of the traditional production which is financially unsustainable. Before the externalization of the activities, this scheme worked because the income gap was paid directly by the public authorities. In contrary, the new concessionaire had to find the ways of being self-financed. The solutions were the investments in the market survey, in the promotion of the activities and the creation of the new line of products. That is how the business model is now mainly characterized by cross-subsidizing.

The motivations of the site's preservation identified from the literature review in the first part of the chapter are all partly present in the musealization project.

The architectural dimension of the site was left as it was in the past. For now, only 1.400 out of 3.400 sq. m. are restored. The Hall of Fires with twelve fireplaces that represent centuries of the eel production and local history of Comacchio, is preserved exactly as in the past. The concessionaire cannot implement any structural modifications even in order to modernize the production.

The history of the local development of the area and of the industry is preserved both through the musealization path, and through the production itself. The marinated eel produced inside the *Manifattura dei Marinati* is the only plant in Italy that use a wild eel for production.

The narration of the organizational history is distributed around all spaces through various methods: the old photos, various maps that accompany descriptive panels. There are several videos reproduced within the museum exhibition: a part of the film with Sophia Loren partly shot inside the plant; a video clip dedicated to the current production activities; and couple of video interviews with some ex-workers of the area. Almost in all spaces of the site the original artifacts are exposed.

The 'content' dimension encompasses the plant's history in the different historical periods, the history of the industry, the history of particular spaces. A lot of attention is dedicated to the history of the plant and to the production cycle (description of different professions, different ancient artifacts and production cycle phases) and almost no attention is paid to the extremely interesting history of the site's management, the concession contract of the past century, the division of roles and responsibilities in the XIX and XX centuries. There is also no information on the industrial production executed from the 1960s till the closure of the plant. This recalls the corporate museums' logics of using the organizational history in order to construct organizational identity.

5.4. Transforming into a cultural hub: *Officine Grandi Riparazioni in Turin*

The *Officine Grandi Riparazioni* (OGR) is an industrial complex from the late XIX century, located in Turin. For a century the OGR represented an excellence in the field of maintenance of locomotives and railcars till it was abandoned in 1992. After years of debates, in 2017 it was opened to the public as workshops for contemporary culture, innovation and business acceleration.

The OGR represents the largest investment of the CRT Foundation on a single project, as well as the largest venture philanthropy project in Europe, aimed at economic, cultural and innovation growth and development of the territory. Experimental educational projects and research laboratories that animate today's OGR share so much common ground with the creativity expressed by the workers of the past, who were more like craftsmen rather than the stereotypical Fordist workers (Musso, 2011).

Figure 5.30. *Officine Grandi Riparazioni* in Turin.

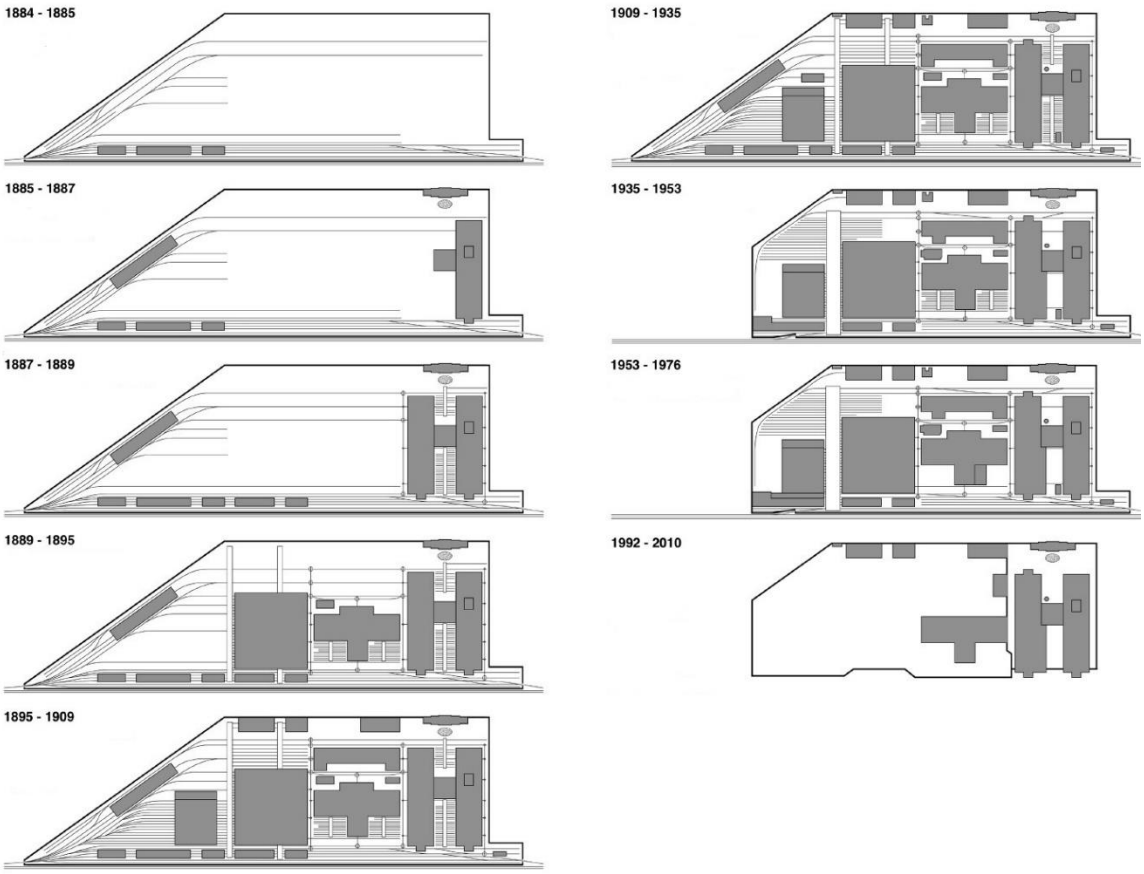
Source: For Engineering Architecture (2015).

5.4.1. Historical background and abandonment period

The middle of the XIX century was crucial for Turin because of construction of two train lines: one to Genoa (constructed in 1845-1853) from Porta Nuova train station and one to Milan (1856) from Porta Susa train station. The area between two stations was perfect for construction of repair workshops for train vehicles.

The project for the new repair workshops (*Officine Grandi Riparazioni*) was presented and approved by the Ministry in 1881. In 1882 the group of experts headed by the engineer Callisto Candellero and the engineer Paolo Rossi, was set up. They travelled all over Europe and the United States in order to take inspiration from different industrial complexes. Afterwards, the detailed project was officially presented and approved in 1884. In the same year the construction of the complex started and lasted till 1895 (see Figure 5.31).

Figure 5.31. The evolution of the OGR (1884-2010).



1884-1885: surrounding wall, track park, vehicle canopies
1885-1887: boilermakers building, employers building, offices building, lumber warehouse
1887-1889: locomotive assembly building, vehicle canopies
1889-1895: wheel turning building, vehicle assembly building, boiler building
1895-1909: foundry and forge building, painting building, pipe processing building, models deposit, locomotive weighs, warehouses
1909-1935: planting of the TO-MI railway, closing of vehicle canopies, company shop and refectory, workers' residencies upholstery building, water tank, welder building
1935-1953: warehouse demolition, upholstery department demolition, expansion of thermal power plant, opening of the Peschiera course, change of track park
1953-1976: railcar disassembly building, expansion of wheel turning building
1992-2010: Total demolition: painters building, vehicle assembly building, vehicle canopies, thermal power plant, models deposit, company shop, track park; Partial demolition: foundry and forge, wheel turning building; New construction: buildings of Politecnico

Photo source: Franceschetti (2011). Translated, original in Italian.

At that time, it was the major repair workshops for rail vehicles, occupying 190.000 sq. m. and employing 2000 workers (Ragazzoni, 1895), what made it the largest industrial facility in the city. The workshops were destined to the repair of locomotives and rail vehicles.

For the first thirty years the locomotive department was dedicated to the repair of steam locomotives. From 1922 the *OGR* were re-adapted to the production of the locomotives that used three-phase induction motors.

During World War II, the complex was airstruck three times and the major part of the pavilions and warehouses were wrecked. At the end of the 1950s, with a development of direct current traction, two parts of the workshops were unified. The new OMR *(Officina Materiale Rotabile)* were dedicated to the repair of railcars (Nascimbene, 2011).

The industrial site remained active in its original configuration until 1975 when, with the emergence of larger models of carriages and locomotives, the complex became obsolete. This technological change transformed the OGR complex into many small mechanical workshops. The H-shaped building was transformed into a warehouse for the spare parts (Begheldo, 2018).

In the end of the 1970s there were already the first talks about converting the H-shaped building into an exhibition pavilion for the Railway museum of Piedmont. That did not bring to any conclusion and in 1992 the site was completely closed and abandoned (Nascimbene, 2011).

The cultural significance of the site

Analysis of the literature on the *Officine Grandi Riparazioni* suggest the reasons that could stand behind the motivation for its conservation. In order to preserve the intangible heritage, it is important to understand what are the characteristics of the site that played an important role in the history of the industry, in the economic development of the area and in the organizational history. The literature on the *Officine Grandi Riparazioni* encompasses its value in connection to three dimensions identified in the chapter 2.

From the point of the view of the importance of *architectural dimension*, it represents one of the most important examples of the XIX century industrial architecture in Turin.

One of the important moments for the *economic development of the industry* was the fact that in the end of the 1800s after the construction of the locomotive section was completed, the electrical lighting system was built. It was an absolute novelty for the time (Franceschetti, 2011). In the end of the XIX century it was the biggest factory of the city (Garzaro, 2017).

The history of the plant has to be preserved also because of the its *importance of the working conditions and practices*. The organizational structure was based on a group work, which did not

allow to attribute any lack of performance on the less experienced workers. Piecework was not individual and was based on a group work (from the interview with Giancarlo Franceschetti, the former worker of the *OGR*).

5.4.2. Reuse project and its implementation

The 1980s in Turin were characterizes by a continuous abandonment of industrial sites. And by the late 1980s the industrial vacuums became a problem of a public order. At the beginning of the 1990s Turin received an immigration wave from the East Europe, so there was a need to expand the residential districts and public spaces. In 1989 the local authority launched a competition in order to select thirty architects to participate in the creation of the Municipal General Plan (ital. *Piano Regolatore Generale Comunale*), directed by *Gregotti Associati*. The General Plan foresaw demolition or some radical reuse of abandoned industrial sites in order to allocate these spaces for public services, new residential buildings and open-air public spaces. It envisaged the construction of a large avenue of the Spina Centrale area on the place of the railway road. And the OGR, located at the key point of the new plan, had to leave space for a public park and new buildings of the Polytechnic University of Turin. In 1993 the plan was approved, in 1995 entered in force and in a few years Turin lost a lot of industrial heritage sites.

A group of the architects working on the General Plan created an association called "Città svelata" that had as an objective raising the critical issues of the Municipal General Plan. In May 1996 they organized an open-day at the OGR with various artistic installations, performances, live music. This event attracted around 10,000 visitors. 10,000 people who had never seen the OGR before, had a chance to understand how many different uses can have the site (Parodi, 2018).

This event raised the awareness of the importance of the OGR conservation within the community and different public organizations. Thanks to the intervention of the Superintendence for Architectural Heritage and to the commitment of numerous scholar, architects, enthusiasts, the amendment of the document was reached.

The first reuse project was thought by the Municipality of Turin and the State Railways (the owner of the OGR at that period) and consisted in placing the contemporary section of the Civic Gallery of Modern Art inside the H-shaped building, leaving also a space for large exhibitions.

In 1997 Superintendence bound the H-shaped building (Barosio, 2011). At the same time, in 1999-2000 some pavilions of the industrial complex were recovered and reused within the *Cittadella Politecnica* and were destined for the Science Center, research and teaching activities and the canteen of the Politecnico (Torneria building). Others (such as the vehicle assembly building and the paint

and upholstery building) were instead demolished to allow the enlargement of the *Cittadella Politecnica* itself.

The future of the OGR was in limbo. Several reuse alternatives of the H-shaped building were considered: transfer of the Civic Library; the temporary headquarters of the Urban Center (2005); the Turin headquarters of the Guggenheim museum (2007); the Municipal Museum of the history of Italy (2010-2011). The characteristic that reunites all reuse alternatives is the fact that for all of them the OGR were a 'container'.

In 2007 the State Railways gave into a free use the H-building to the Municipality of Turin, which organized several events in order to raise the awareness on the OGR. In 2007 the Urban Center organized several guided tours and in 2008 the exhibition "Torino011. Biografia di una città". In 2011 the 150th anniversary of the Unification of Italy was celebrated in the H-shaped building. Thanks to that event one part of the H-shaped building was restored.

Already in 2007 the CRT Foundation proposed to the City Council acquisition of the OGR, their requalification and regeneration into an exhibition-museum center, as well as a hub for scientific and technological research. In 2011 the proposal was accepted by the Municipality with a condition of acquisition of the complex by the CRT Foundation and a consequent property transfer to the Municipality.

In 2013 the OGR-CRT company, specifically set up by the Fondazione CRT, purchased the 20,000 sq. m. H-shaped building (and the ex-office building alongside) from the *RFI Sistemi Urbani* and began the great restoration to redevelop the ancient workshops under the guidance of the Superintendence and in collaboration with the Municipality of Turin. The OGR-CRT Joint Stock Company is an instrumental body of the CRT Foundation. Its aim is "the realization of design, production and cultural communication activities in the performing art, music, literature, contemporary art, creativity and design sectors, with further objectives of empowerment and social inclusion through initiatives such as, for example, social and community theater or exhibition projects with intercultural content. It also promotes scientific and technological research, with the aim of creating an attractor with international value" (OGR-CRT s.p.c.a., 2017).

After acquisition, the OGR-CRT launched a project "*Cantieri OGR*" with over 100 events (exhibition activities, concerts, visual arts, theatre performances) dedicated to 'test' a possible transformation of the OGR. In about five months the installation attracted around 120.000. This event helped to understand the spaces, their capacities and the possibilities of the reuse before the actual restoration procedures.

In 2014 the CRT Foundation launched a three-year restoration project. With almost 100 million euro investment, it is the largest direct investment on a single project of the CRT Foundation, directed

on the growth and development of the territory, as well as the largest venture philanthropy project in Europe (at least till 2017) (Fondazione CRT, 2017).

In 2015 the renovation of the former office building was completed. Now it hosts offices of the OGR-CRT company. The H-building consists of two longitudinal wings and a transept that connects them. The restoration of one wing (*Manica Nord*) and the transept was completed in 2016 and inaugurated the year after. The *Manica Nord* became OGR Cult, a cultural hub dedicated to all sorts of exhibitions, shows, concerts, theatre and dance events. There are 2,750 sq. m. of the exhibition space, 2750 is the capacity for the concerts and shows (the first space in Turin with a such capacity), 99 – for the conferences. Because of the site's height of the site, it is a first place in Turin where the high artistic installations are possible. The activities of the cultural hub of the OGR are organized by the OGR-CRT in collaboration with the important national (e.g. GAM, Castello di Rivoli) and international actors (e.g. Tate Modern). All parts of the OGR Cult were created with the important collaborators: Transliteral shop (bookshop) in collaboration with Marti Guixè, the historical part of the OGR – in collaboration with the ex-workers of the industrial site, the educational space Future Park – in collaboration with teamLab, a collective of Japanese developers. *OGR Cult* is open to the public from Thursday to Sunday. There are three spaces accessible with a ticket: two of them are dedicated to the arts exhibition and another one is Future park, a space dedicated to the events for kids. Another huge space is dedicated to the performing arts and is accessible only on the days of events. Also some public and private events (e.g. conferences or books presentations) are organized in the OGR Cult.

The transept area became OGR Taste, a particular area with various restaurants and bars.

In 2019 the second wing of the H-building (*Manica Sud*) was inaugurated. It became OGR Tech, a technological innovation hub. It is a hub for collaborative creativity and new ideas incubator focused on start-ups, creative industries and smart data. There are over 4,500 digital and technology professionals, including freelancers, entrepreneurs, startups, agencies, investors, students and large companies (like Intesa San Paolo, IBM, Deltatre). OGR Tech is opened just for the workers and is not accessible for the public.

In the Table 5.15 the main events of the site's history and the reuse project are summarized.

Table 5.15. Historical timeline of the *OGR*.

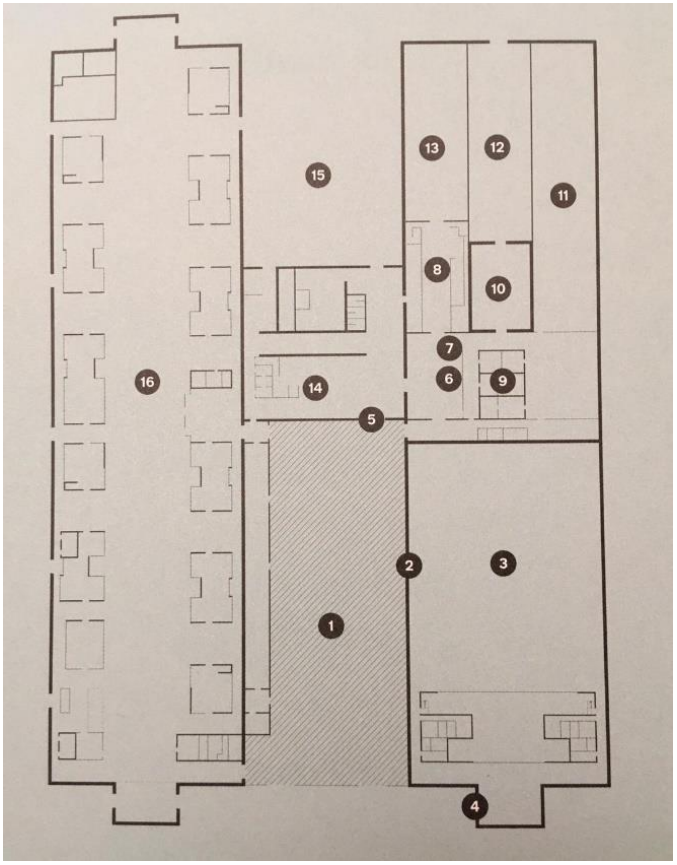
Date	Events
1884-1895	Construction of *Officine Grandi Riparazioni*.
1944	*OGR* was damaged during World War II.
1975	Transformation into many small mechanical workshops.
1979	First hypothesis of converting the H-shaped building into the Railway museum of Piedmont.
1992	Closure and abandonment of the plant.
1995	Turin's new urban development planning envisions the demolition of the H-shaped building.
1996	Open-day at the *OGR*.
1997	Superintendence bound the H-shaped building.
1999-2000	Some pavilions were recovered within the *Cittadella Politecnica* (now - the Science Center, research and teaching activities and the canteen of the Politecnico); others were instead demolished to allow the enlargement of the *Cittadella Politecnica* itself.
2005	Hypothesis of reconversion into the temporary headquarters of the Urban Center.
2007	Hypothesis of reconversion into the Turin headquarters of the Guggenheim museum .
2008	Organization of the guided tours and the "Torino011 Biografia di una città" exhibition.
2010-2011	Hypothesis of the reconversion into the Museum of the History of Italy.
2011	Celebration of the 150th anniversary of the Unification of Italy inside the *OGR*; restoration of one part of the H-shaped building.
2013	The OGR-CRT company purchased the H-shaped building from the *RFI Sistemi Urbani*.
2017	The *OGR* has opened to the public as a hub of creativity and innovation (OGR Cult and OGR Taste).
2019	Inauguration of the OGR Tech as a technological innovation hub.
2020	The *OGR* (Sala Fucine) became a temporary hospital during the COVID-19 emergence.

5.4.3. Between tangible and intangible heritage in the process of musealization

The reuse project's objective was to transform the former train repairs workshops into new workshops for contemporary culture, innovation and business acceleration, with a marked international stance, based on "hi-tech solutions, environmental sustainability, historical preservation,

versatility of spaces and accessibility for all" (OGR-CRT, n.d.). The new workshops were conceptually divided into three parts: OGR Cult, OGR Taste and OGR Tech. In the Figure 5.32 all restored spaces of the site are listed. The following paragraphs are dedicated to the description of different musealization techniques within the new reuse project (for a complete analysis of all spaces see Appendix 7).

Figure 5.32. The Officine Grandi Riparazioni. Reuse project map.



Current use

1. East courtyard;
15. West courtyard;

OGR CULT

2. Entrance Sala Fucine; **3.** Sala Fucine; **4.** Concert ticket office; **6.** Info point and ticket office; **7.** Cloakroom; **8.** Transliteral shop; Com'era com'è; **9.** Toilets; **10.** Duomo (placed the imposing hydraulic nailer used for boilers of trains); **11.** Binario 1; **12.** Binario 2; **13.** Binario 3;

OGR TASTE

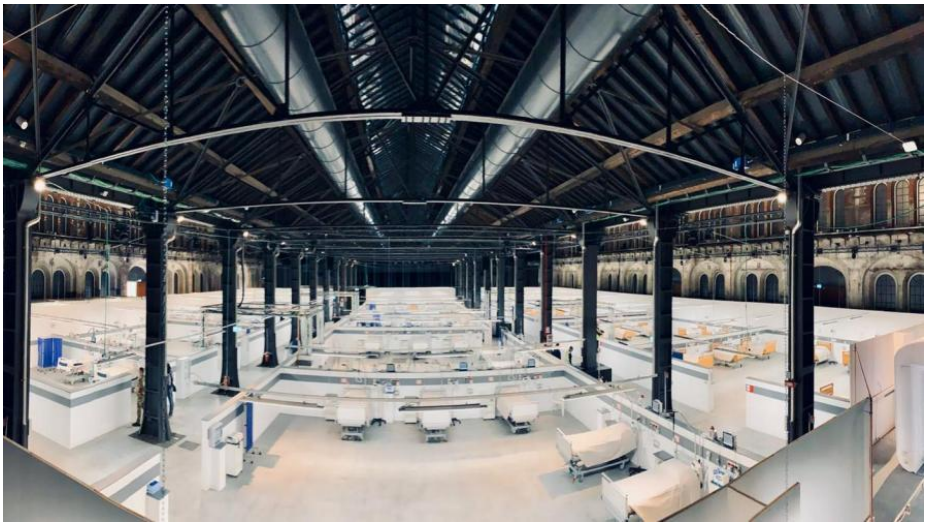
5. Main entrance to OGR Taste and OGR Cult;
14. Snodo;

16. OGR TECH

OGR Cult is located in one of the longitudinal buildings of around 9000 sq. m. In past it was a place dedicated to repair of locomotives. Within the regeneration project it was devoted to a multifunctional area with exhibitions, shows, concerts, theatre events, etc. Some of graffiti on the walls, traces of the building's past, were preserved to make them visible to the public.

Sala Fucine (n. 3, Figure 5.32), forges in the past, now is a platform for music, dance and theatre. In spring of 2020 during the COVID-19 emergence, it became a temporary hospital (Figure 5.33).

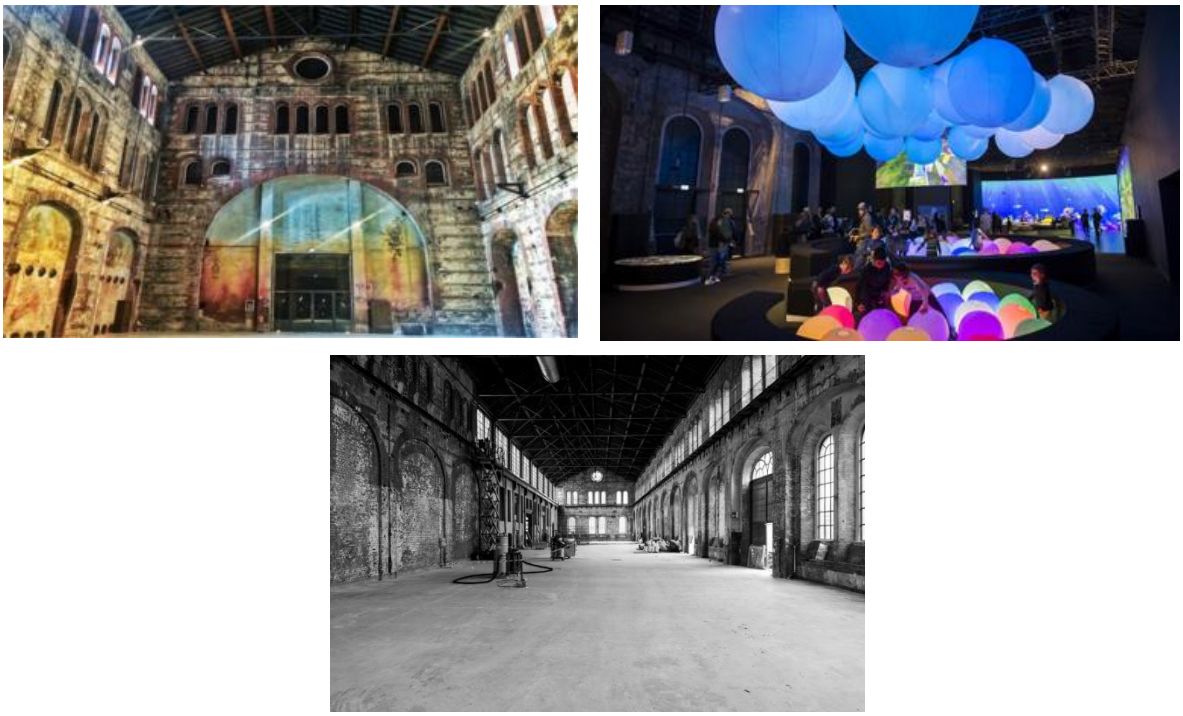
Figure 5.33. COVID-19 temporary hospital in the concert hall of the OGR, May 2020.



Source: (ANSA, 2020).

A suggestive space *Duomo* (n. 10, Figure 5.32) is a 19 meters high space and in the past was used to accommodate the imposing hydraulic nailer used for boilers of trains. Now it is used for a place for seminars, conferences and workshops (see Figure 5.34).

Figure 5.34. OGR: Duomo, Future Park, Binari.



Duomo *(in the picture at the top left), Future Park (in the picture at the top right),* Binari *(in the picture at the bottom).*

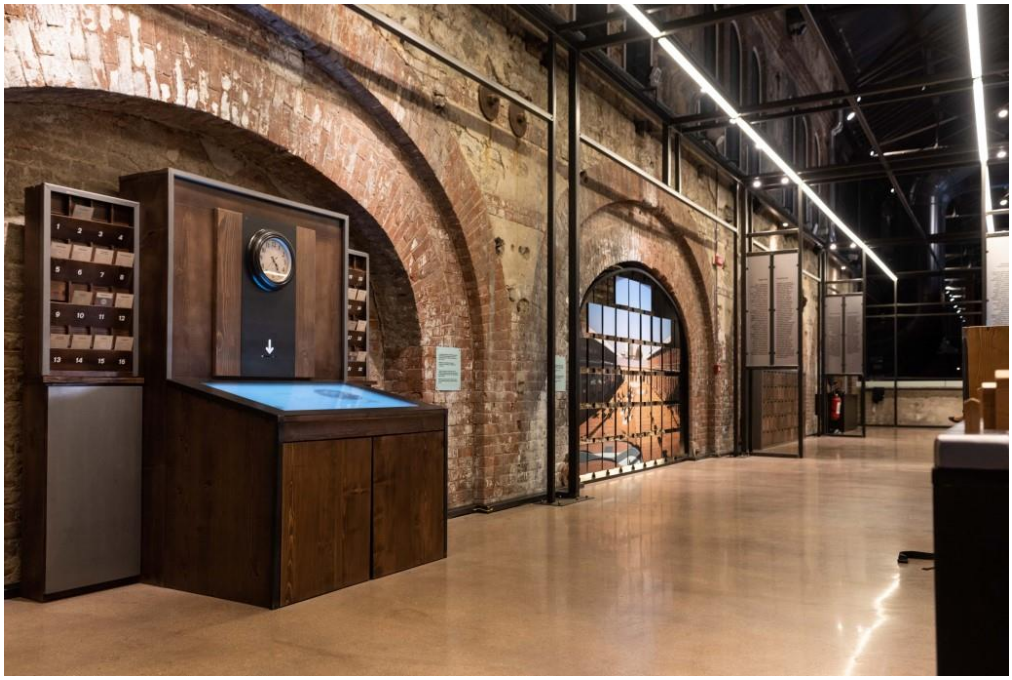
Source: at the top left and at the top right (Fondazione CRT, 2017), at the bottom (OGR-CRT, n.d.).

Binari (n. 11-13, Figure 5.32), where the electric engines were produced in the past, are three spaces dedicated to the visual arts exhibitions and performances. In *Binario 3* is situated the "Future Park", an educational project based on the concept of "collaborative creativity, co-creation" (see Figure 5.34).

Transliteral shop (n. 8, Figure 5.32) is the bookshop designed by Martin Guixè. A public space, where one can take a break and play around with books, where children can watch and touch and adults discover new paths.

Com'era Com'è (n. 8, Figure 5.32) is a 100 sq. m. space devoted to the narrative of the OGR's history. It is composed of a series of interactive and immersive installations, including a virtual reality station that allows the visitor to live again the work experience that took place inside the OGR buildings (see Figure 5.35). The area was born from the direct involvement of the former, interviewed by school students and invites a reflection on what unites the memory and the future of these spaces. The reconstructed space resembles a long railway wagon, where visitors can retrace the OGR's history from 1865 till the current days.

Figure 5.35. Com'era Com'è. *Officine Grandi Riparazioni*.



Source: (Promemoria Group, 2019).

The history of the OGR is narrated through different interactive installations: the OGR model in wood with the description of the past use of different spaces; different panels dedicated to the urban development of the local area through the years thanks to the OGR; images that reconstruct the history

of OGR and their production; display with text and photos on various professions. Descriptive panels (both in Italian and in English) are dedicated to the importance of the OGR in the economic development of Turin, to the architectural aspect of the site and the moment of its abandonment. Drawers hold stories and anecdotes of former and current OGR workers, filled with the ancient objects and testimonies. The stories told by the former workers can be listened through the headphones:

> *"In my opinion these workshops were the elite of the workshops throughout Italy, there was an effective collaboration between all of the workers, from the last to the first one, and I felt like a part of a big family ... we did not perceive any kind of hierarchy"* (Rocco Altovino, ex-electrician).

OGR Taste (n. 14, Figure 5.32), the place where different accessories were produced in the past, is located in the space connecting the two longitudinal buildings and is dedicated to a project called Snodo that consists of Pausa Caffè (a space for breakfast, brunch or coffee break), Social Table (25 meter long table, 90 seats, and an all-day menu); Dopolavoro (an after dinner space with a broad selection of international cocktails); Officina del Gusto (a restaurant with a modern and elegant setting, à la carte specialties for your unique occasions); Ristoro (the bistrot formula for a quick and light meal).

OGR Tech (n. 16, Figure 5.32) is located in the another longitudinal building of around 9000 sq. m. and 200 meters long. In the past it was dedicated to the locomotive assembly. It has been inaugurated in June 2019. It is a hub for collaborative creativity and new ideas incubator focused on start-ups, creative industries and smart data. The aim of the project was to create a place for the intangible production of knowledge, a laboratory devoted to research and innovation in the digital, creative and social fields. A hub is developed for scientific, technological and industrial research focused on three main activities: OGR for startups (international acceleration programs to support innovative European startups); OGR for education: a new hub for creative projects, in collaboration with research institutions and companies; OGR for research: an experimentation lab fully dedicated to smart data (OGR-CRT, n.d.)

OGR Tech accommodate companies in rotation in constant change. It will provide support in the research and development processes, connection with national and international companies sensitive to the issues of open innovation, and opportunities for discussion with investors and business angels. Today there are over 4,500 digital and technology professionals, including freelancers, entrepreneurs, startups, agencies, investors, students and large companies (like Intesa San Paolo, IBM, Deltatre).

There are several buildings of the former OGR that were dedicated to another projects and are not considered in this analysis. Turning building, in past, was housing the large steam engines and encircling operations, today it houses the canteen of the Politecnico of Turin. Foundry and forge building, vehicle assembly building and painters and upholsterers building, after the transfer of the property to the Politecnico were demolished.

5.4.4. Governance, financial business model and accountability

The new OGR project is managed by the joint stock consortium company OGR-CRT, specifically set up in 2012. The share capital of the company is divided within three stakeholders in the following proportions: Fondazione Cassa di Risparmio di Torino (73,2%), Fondazione Sviluppo e Crescita – CRT (20,3%), Unicredit S.p.A. (6,5%) (OGR-CRT s.c.p.a., 2020).

The OGR-CRT company has 32 employees (in 2020) who are responsible in front of the board of directors. The company has a general director and two deputy managers for OGR Cult and OGR Tech. Some services are outsourced: security, cleaning services, maintenance procedures, exhibition personnel. But all activities within the OGR Cult are organized internally. The OGR Tech is managed on the operational level by an external company Talent Garden, but all decisions are made internally. The OGR Taste is externalized to another company, where the OGR-CRT company has 60% of the shares (from the interview with Matteo Pessione, planning and control manager of the OGR-CRT).

The earned income is based on the revenues from private events, concessions of spaces in the OGR Tech, organization of concerts and exhibitions, revenues from the TeamLab, wardrobe, educational activities and guided tours, bookshop sales.

The distribution of revenues and expenses of 2019 is listed the Table 5.16. The company has a large income gap, which has been already artificially reduced by the grants that the OGR-CRT receives (see ‘contributions in operating account’ in the Table 5.16). For instance, the CRT Foundation annually supports all cultural projects of the OGR Cult (from the interview with Matteo Pessione). The main source of the revenues are the private events. According to the interview with Matteo Pessione, only OGR Tech is financially sustainable. The data from the Table 5.16 shows that the revenues and expenses for OGR Tech were almost the same in 2019. But it has to be considered that OGR was inaugurated just in June 2019. Also in 2020 because of the Covid-19 emergency, the OGR Tech is the only direct source of the revenue.

Table 5.16. Revenues and expenses. OGR-CRT s.c.p.a. (2019).

REVENUES	Value (euro)	EXPENSES	Value (euro)
Revenues from sales and services	**2.941.933**	Raw and consumable materials	110.897
Private events	1.817.322	**Cost of services**	**8.052.842**
OGR Tech concessions	538.504	Acquisition expenses	362
Concerts	370.020	Transport expenses	28.477
TeamLab	91.107	Working costs	61.469
Exhibitions	42.030	Electricity	916.358
Wardrobe	10.005	Gas	10.541
Educational activities/Guided tours	4.293	Water	1.762
Bookshop store	22.013	Maintenance and repair	365.104
Other	46.639	Technical services and consultancy	205.752
Other revenues	**6.532.628**	Remuneration to directors	122.720
Contributions in operating account	5.889.000	Remuneration to statutory auditors	46.498
Other	633.628	Services assimilated to those of employees	143.211
		Advertising	644.288
		Costs of legal counsel	58.215
		Tax, administrative and commercial consultancy	36.307
		Telecom expenses	56.164
		Exhibitions and events	2.693.548
		Insurance	66.562
		Representation expenses	61.340
		Travel costs	93.053
		Seconded personnel	136.591
		Expenses for updating, education and training	14.634
		Cleaning	276.050
		Security services	918.097
		Manica Sud (OGR Tech)	546.513
		Other	549.226
		Costs of rents and leases	**862.337**
		Rentals and leases	466.454
		Royalties, copyrights and patents	395.883
		Personnel costs	1.265.875
		Amortisation, depreciation and write-downs	3.220.528
		Raw materials inventories	3.077
		Provisions for risks	40.000
		Other operating expenses	381.268
Total revenues	**9.474.561**	**Total expenses**	**13.936.824**
Operating income	**- 4.462.263**		

Source: Budget (2019), OGR-CRT s.p.c.a.

From 2012 till now three stakeholders have been annually increasing the share capital of the company in order to cover the loses generated each year (see Table 5.17). Even in that case the net income has been negative from the very beginning, not even talking about the "pure" income from the activities that can be calculated from the revenues from sales and services and the direct expenses (e.g. raw and consumable materials, cost of services, costs of rents and leases).

Table 5.17. Profit and loss account (2012-2019). OGR-CRT s.c.p.a.

	2019	**2018**	**2017**	**2016**	**2015**	**2014**	**2013**	**2012**
REVENUES								
Revenues from sales and services	2.941.933	2.271.586	466.872	0	85	18.167	183.254	24.000
Other revenues (e.g. contributions)	6.532.628	3.163.838	1.311.447	430.792	191.201	117.502	13.919	0
Total Revenues	**9.474.561**	**5.435.424**	**1.778.319**	**430.792**	**191.286**	**135.669**	**197.173**	**24.000**
EXPENSES								
Raw and consumable materials	110.897	118.169	22.181	5.594	3.792	4.758	12.637	0
Cost of services	8.052.842	8.429.771	6.374.570	632.125	675.637	679.440	1.275.644	270.511
Costs of rents and leases	862.337	728.771	25.587	19.084	7.152	7.461	168.696	0
Personnel costs	1.265.875	870.130	551.344	281.207	184.896	206.019	112.441	0
Amortisation, depreciation and write-downs	3.220.528	3.637.470	2.973.433	1.720.714	1.021.260	546.353	252.675	1.730
Raw materials inventories	3.077	-22.230	0	0	0	0	0	0
Provisions for risks	40.000	160.000	0	0	0	0	0	0
Other provisions	0	0	0	0	0	0	25.000	0
Other operating expenses	381.268	743.529	408.432	186.196	178.995	227.475	291.863	518
Total expenses	**13.936.824**	**14.665.610**	**10.355.547**	**2.844.920**	**2.071.732**	**1.671.506**	**2.138.956**	**272.759**
Operating income	**-4.462.263**	**-9.230.186**	**-8.577.228**	**-2.414.128**	**-1.880.446**	**-1.535.837**	**-1.941.783**	**-248.759**
Financial income (expenses)	-188.098	-1465	7018	322	871	36798	5605	81
Value adjustments on financial assets	-63.744	-1487019	0	0	0	0	0	0
Extraordinary income (expenses)	0	0	0	0	13590	-55564	1	0
Income before taxes	**-4.714.105**	**-10.718.670**	**-8.570.210**	**-2.413.806**	**-1.879.575**	**-1.499.039**	**-1.936.178**	**-248.678**
Taxes	0	0	0	0	0	31.918	44.508	-76.426
Net income	**-4.714.105**	**-10.718.670**	**-8.570.210**	**-2.413.806**	**-1.879.575**	**-1.530.957**	**-1.980.686**	**-172.252**

Source: Budget (2012-2019), OGR-CRT s.c.p.a.

5.4.5. Discussion: *between musealization and sustainability*

The *Officine Grandi Riparazioni* passed a long way from the moment of its abandonment to its final reconversion, through the possibility of demolition, the bottom-up raise of the social awareness, the possibility of different regeneration projects.

The former industrial site is situated in the area of Turin that was developed thanks to the presence of various industrial sites. At the moment of its abandonment, the problem of industrial vacuums was already crucial in Turin. So the opportunity cost of the site's preservation was very high. And in 1995 its demolition was included in the Municipal General Plan (MGR). Thanks to different actions organized by several associations and individuals, the awareness of the historical preservation of the site was raised. The MGR was amended. And in 1997 the Superintendence introduced a legal restriction on the H-shaped building. Unfortunately, this motion did not touch other structures that were acquired by the Polytechnic University of Turin. Some of them were consequently demolished, and some were reconverted into university spaces. From that moment, the discussions on the OGR in the literature concerns only the H-shaped building.

Before the final formulation of the regeneration project on the H-shaped building, the site passed through a variety of projects. Except the first hypothesis of the former industrial site's transformation into the Railway Museum of Piedmont (1979), all other alternatives were considering the OGR only as a 'container' (e.g., civil library; temporary headquarters of the Urban Center – 2005; the Turin headquarters of the Guggenheim museum – 2007; the Museum of the History of Italy – 2010-2011). In those years, the OGR hosted several temporary events, which permitted some targeted restorations. Considering dimensions of former industrial sites, enormous funds that have to be invested into their restoration, it is a frequent practice.

In 2013 the reuse project proposed by the CRT Foundation was welcomed by the Municipality of Turin and the Superintendence, and the site was transformed into a cultural and technological hub. An innovative approach, not present in other case studies, consisted in organization of the five-months cultural project "Cantieri OGR" straight after the acquisition of the site. This helped to understand the various spaces in the sense of the capacities and the possibilities of the reuse by organizing a range of various cultural events in order to understand the most suitable ones. Only after this the CRT Foundation started the restoration and regeneration processes.

The new OGR, structured into three parts, is reminiscent of the past only through the architectural aspect which was kept the same as in the past, and through a small exhibition dedicated to the history of the OGR. Besides the historical area "*Com'era Com'è*", there are almost no references to the site's history in the other spaces, almost no artifacts are disposed around the site and no descriptive panels

indicating the past use of the particular spaces and their history. The historical part is somehow separated and disconnected from the overall project.

Within the small exhibition, the history is narrated through the variety of the visual methods, such as descriptive panels, photos of the past and the current state of the site, a model of the OGR in the past, various maps of the local area, an installation with the audio testimonies of the former workers and different ancient artifacts. Two new projects have been recently realized. One is the Augmented Reality where the visitors can explore the space, materialize a steam locomotive and steel columns (OGR-CRT, n.d.); and another one is the 3D tour. The narration of the intangible aspect ('level of content') is also quite complete. It touches the topics on the local history of the area, on the importance of the site in the economic development of Turin, the period of site's abandonment.

The site is partly opened for the public. Exhibitions in the OGR Cult are open from Thursday to Sunday, other OGR Cult spaces are opened just in the occasion of events. But the OGR Tech is opened only for the workers.

As noticed in the literature, the new OGR project "represents the largest investment of the CRT Foundation on a single project, as well as the largest venture philanthropy project in Europe, aimed at economic, cultural and innovation growth and development of the territory" (Fondazione CRT, 2017). This seems to be relevant not just for the initial investment for the regeneration project but also for the current management of the site. Three stakeholders (CRT Foundation has 73% of the shares) have been annually increasing the share capital of the company in order to cover the high income gaps generated each year. The main revenues come from concession of the OGR Cult spaces for private events, concessions of spaces in the OGR Tech, organization of concerts and exhibitions, revenues from the TeamLab, wardrobe, educational activities and guided tours, bookshop sales. All main activities are managed internally by the joint stock consortium company, specifically set up for the project.

5.5. Public oriented services: *Santa Marta Military Provisions Centre in Verona*

The Santa Marta Military Provisions Centre was constructed in the middle of the XIX century in Verona in the last years of Austrian rule, for storing grain and fodder, baking bread and hard biscuits for the army. The site passed through two regeneration projects. In the middle of the XX century it became a facility for the acquisition, testing (quality control) and distribution of general supplies for the Italian Army. And in the beginning of the XXI century it was transformed in the Economics and Law Departments of the University of Verona. As an astonishing example of the restoration of the former industrial site from the architectural point of view it was granted the Gold Medal for Italian Architecture from the Milan Triennale in conjunction with the Ministry for Culture and Tourism and MADE expo in 2015 (Ferrari, 2017). The project had an impact on the surrounding area, today the majority of the spaces are open for all visitors for free and the history of the organization is narrated within the permanent exhibition "Santa Marta, history and itineraries: from Provisions Centre to University Site".

Figure 5.36. The front photo of the restored Santa Marta Military Provisions Centre.

Source: Albrigo (2015).

5.5.1. Historical background and abandonment period

The Santa Marta Military Provisions Centre ("K. K. Militar-Verpflegsetablissement") was built in 1863-1865 by Austrians for storing grain and fodder, baking bread and hard biscuits for the army, and as a rations warehouse. It was constructed by officers-engineers Andreas Tunkler, assisted by Anton Naredi-Rainer and Ferdinand Artmann.

The Santa Marta complex is located on a rectangular lot near Porta Vescovo. The XIX century project foresaw three fundamental parts: the monumental system of accesses on via Cantarese: the main building, placed in axis with the access to the area originally intended for the production of biscuits and bread: the two almost twin parallelepiped bodies of the silos, in an eccentric position

with respect to the entry axis. The bakery was very large (118 meters long and 54 meters wide), five floors high, including one underground floor, comprising an almost square middle portion, two large wings either side and two side buildings in a U shape. Each of the three parts of the building had an internal courtyard (Ferrari, 2017). The two grain depots were of identical size (45 meters long and 18 meters wide) and were connected by an iron bridge (Giavoni, 1985). The complex was constructed in the last years of the Austrian rule and served in 1866 for the Battle of Custoza (Bozzetto, 2015). Afterwards, it served for the Italian Armed Forces as in that period it was one of the five most important military bakeries in the whole Italy (Ferrari, 2017).

At the beginning of the XX century the Santa Marta Military Provisions Centre passed through some technological and production changes, numerous machines were updated and replaced. In the period between the Two World Wars new machinery was purchased, the complex was enriched with some new buildings: a small building called the Provisions Distribution Warehouse and a single-store building at the edge of the area between the western silo and the Santa Marta Bakery.

In 1951, the warehouse acquired a new function as a facility for acquisition, testing (quality control) and distribution of general supplies for the Italian Army. The eastern portion of the building became a depot with offices and a laboratory. The conventional function of the warehouse, as storage facility for equipment, and supplies, were moved to the western portion, with two silos and new dedicated buildings. Storage and distribution were no longer confined to foodstuffs but included military equipment uniforms. Several parts of the main building were upgraded and converted to new use: for example, the second floor became lodgings for non-commissioned officers and their families. In 1957 the military production of the bread was completely closed, the mill was dismantled and the equipment was sold. But the bakery continued to produce for a private company (Ferrari, 2017).

In 1997 the warehouse was moved to the “Pietro Schiavo” barracks in Verona, which is still today the Verona Supply and Distribution Centre. In 1998 the former bakery became the property of the state, under its artistic/historic heritage unit, and the production facility and warehouses were closed, pending new use.

In 2004 the Santa Marta Military Provisions Center was acquired by the Municipality of Verona which gave it in a free use to the University of Verona in order to restore it and destine to the Economic Faculty.

After the abandonment, the site remained for the most part intact. The state of the conservation was good and homogeneous, perhaps due to the frequent maintenance interventions. The University restored the Western Silos (inaugurated in 2009) and the bakery (inaugurated in 2015), now both dedicated to the Economics and Law Departments of the University and the Economics Library.

The cultural significance of the site

The literature on the Santa Marta Military Provisions Center encompasses its value in connection to three dimensions (identified in the chapter 2) that stands behind the motivation of the site's conservation.

From the point of the view of the importance of *architectural dimension*, it represents on the most significant examples of the Rundbogenstil architectural style preserved within the Italian territory (Scimemi, 2010).

The plant played an important role in the *economic development of the area and of the industry*. In the end of the XIX century the plant is described in the literature as one of the five most important military bakeries in Italy, out of a total of forty (Ferrari, 2017).

A curious characteristics of the *importance of the working conditions and practices* within the plant was the fact that the work was entrusted to the soldiers of so-called Subsistence Companies, helped by soldiers chosen from various corps and regiments. The work was used as vital training for bakers, giving the various corps experts able to use the mobile filed ovens with which the Army was equipped in wartime (Ferrari, 2017).

5.5.2. Reuse project, its implementation and current management of the site

In the 1990s the University of Verona expressed its interest in the acquisition of the Santa Marta Complex in order to create new spaces and facilities for students. In 1997 the Municipality of Verona, the Ministry of Defense and the University found an agreement on the transfer of the military barracks.

In 2001 the City Authority and the University of Verona signed a Protocol Agreement with an aim to promote "the renovation and upgrading of the entire area of the Veronetta district". Subsequently, the Verona University signed an agreement with the IUAV University of Venice in order to carry out a feasibility study for the renovation of the Santa Marta site (Ferrari, 2017).

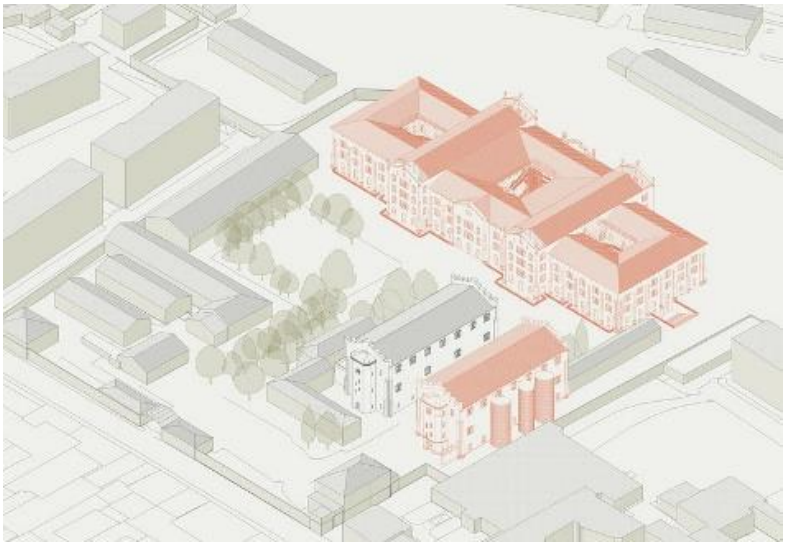
In 2002-2004 ISP (IUAV) carried out a series of activities for surveys and preliminary studies on hypotheses and intervention methods for the western silos and the bakery site. Massimo Carmassi and Gabriella Ioli Carmassi were appointed to carry out the work. In this phase, a group of professionals and recent graduates carried out feasibility studies, historical and urban planning research and elaborated the geometric relieves (Spinelli & Pastore, 2007; Terraroli, 2015).

In 2004 the "Santa Marta Barracks" site was acquired by the Municipality of Verona under the deed n. 45259 of 21/10/2004 on the cost of 3 milliards of lire (equal to 1.549.370,70 euro).

Consequently, the City Authority, the Veneto's regional government and the University of Verona signed an agreement by which the Veneto's regional government was committed to pay the contribution to the Municipality of Verona for the site's acquisition. The City was committed to grant the University part of the complex on a 99-year renewable lease. The University was committed to maintain the use of the site for no less than 30 years and destine the site to the Economics Faculty, the Library and spaces and services for students.

All interventions had to be agreed with the Municipality of Verona and the Superintendence of Architectural and Landscape Environmental Assets of Verona. The initial project foresaw the recovery by the University of the former bakery and two Silos (see Figure 5.37), although the Eastern Silos remained to the Municipality because of a certain resistance at the city level of different social organizations in the neighborhood (from the interview with the Prof. Maria Luisa Ferrari). There was a fear that the University would become a closed space form the population of the neighborhood. This perception was totally changed after the inauguration of the new project.

Figure 5.37. Santa Marta complex: a schematic representation of the restored buildings.



Source: Università di Verona (2015).

In 2007-2009 the restoration of the Western Silos (a building of a total 21.000 sq. feet) was executed. The recovery and reuse project's expenses were around 8 million euro, funded by the University of Verona and partly sponsored by Ms. Miriam Loro Cherubini (Ferrari, 2017). Now the Western Silos houses teaching facilities for the Economics and Laws Departments.

The research project of the bakery building was executed between 2006 and 2008 and the restoration process started in 2009. The main aim was to preserve the spatial arrangement of the buildings and their construction quality, adapting them to new functions. It was decided to leave the

building as it was constructed, using glass partitions to create rooms whilst allowing the eye to roam freely over the entire structure. The whole building of five floors and 250,000 sq. feet is now dedicated to the Economics and Law Departments of the University and the Economics Library: labs and book deposit on the basement floor; access hall, classrooms, secretary and cafeteria on the ground floor; presidency and departmental directorates, offices for researchers and teachers, secretariats and administrative offices on the first and second floors; library and related services on the top floor with two large halls intended for reading rooms (Ferrari, 2017; Mulazzani, 2016; Scimemi, 2010; Terraroli, 2015). The whole project funding was 37 million euro.

The project at the stage of the research and implementation was a collaboration of different actors. In order to formulate the reuse project, the professionals had to consult the documentation of the Vienna State Archives, collaborate with the militaries that occupied the bakery in the last decades (from the interview with the Prof. Maria Luisa Ferrari). The implementation phase had to be agreed step by step with the Municipality of Verona and the Superintendence. Collaborations and conflicts between different public entities characterized the planning and subsequent recovery works (from the interview with a technical official of the University of Verona). Now the site is totally managed by the University of Verona.

Even if the main scope of the new project was the creation of the new spaces for the University, it became an aggregation space also for the local people, even if in the beginning, the locals were suspected in front of the new project thinking that it would be a closed space just for the University without any possibilities of public access (from the interview with the Prof. Maria Luisa Ferrari).

The inauguration of the site coincided with the launch of the permanent exhibition “Santa Marta, history and itineraries: from Provisions Centre to University Site”, a result of a research project of the Prof. Maria Luisa Ferrari. It is dedicated to history of the site, the local history of the area and the process of the reuse project. The exhibition includes iconographic materials and different multimedia instruments. Also along the public spaces of the building several machineries from the abandoned plant are disposed.

In 2019 the University signed an agreement in order to place on the ground floor an exhibition dedicated to the contemporary arts, which disposition caused the replacement and rearrangement of the permanent exhibition on the Santa Marta history. Today the two courtyards and the area adjacent to the western courtyard are dedicated to the permanent exhibition. The central courtyard is used for temporary exhibitions.

The public spaces of the building are opened for visitors for free. Once per month the University organize guided tours through the permanent exhibition and the library. The number of visitors is unknown, but based on the number of brochures, it can be supposed that the site attracts around 1500-

2000 visitors per year, not counting the students and academics coming also in case of different conferences (from the interview with the Prof. Maria Luisa Ferrari). The school students visit the site within the Kids University event, which takes place every September.

The reuse project helped to "return" the site to the local community. In the past the Santa Marta Bakera was always perceived as a closed venture belonged to the militaries. Today represents a space of aggregation opened to the university community and to the city in general.

In the Table 5.18 the main events of the site's history and the reuse project are summarized.

Table 5.18. Historical timeline of the Santa Marta Military Provisions Centre in Verona.

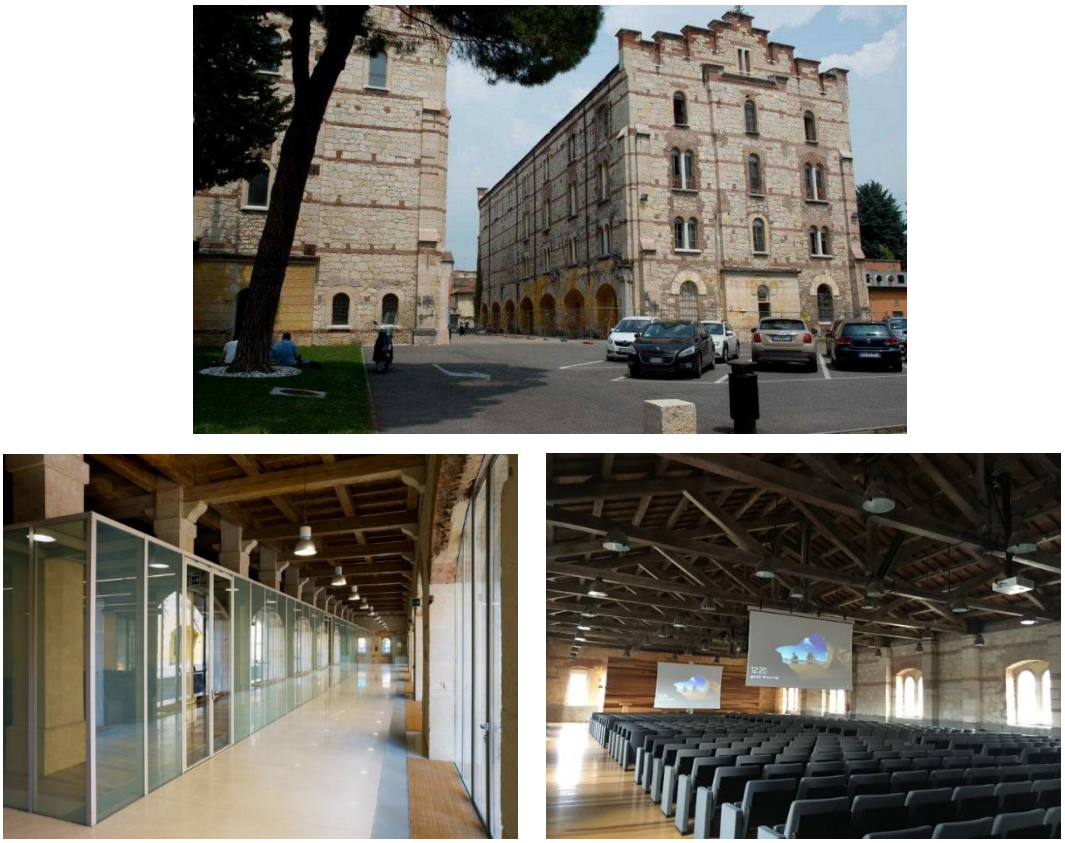
Date	Events
1863-1865	Construction of the Santa Marta Military Provisions Centre in the last years of Austrian rule.
1866	After the Battle of Custoza and the annexation of the Veneto to the Kingdom of Italy, the Santa Marta Center remained operative in the service of the Italian Armed Forces.
Beginning of XX century	Technological and production changes. Numerous machines were updated and replaced.
Between the Two World Wars	Construction of new buildings inside the complex and purchase of the new machinery.
1951	Warehouse acquired a new function as a facility for the acquisition, testing (quality control) and distribution of general supplies for the Italian Army.
1957	Closure of the military bakery, dismantlement of the mill, sale of the equipment. Nevertheless, the bakery continued to produce for a private company.
1997	The warehouse was moved to the "Pietro Schiavo" barracks in Verona.
1998	The former bakery became the property of the state, under its artistic/historic heritage unit, and the production facility and warehouses were closed, pending new use.
2001	Protocol Agreement between the City Authority and the University of Verona with an aim to promote "the renovation and upgrading of the entire area of the Veronetta district". Agreement between the Verona University and the IUAV University of Venice in order to carry out a feasibility study for the renovation of the site of Santa Marta.
2002-2004	ISP (IUAV) carried out a series of activities for surveys and preliminary studies on hypotheses and intervention methods for the western silos and the bakery site.
2004	Acquisition of the site by the Municipality of Verona that granted it to the University of Verona.
2006-2008	Research project of the bakery.
2007-2009	Restoration of the Western Silos.
2009-2015	Implementation project of the bakery .

5.5.3. Between tangible and intangible heritage in the process of musealization

The following paragraphs are dedicated to the description of different musealization techniques of the new reuse project (for a complete analysis of all spaces see Appendix 8).

The first part of the regeneration project concerned the Western Silo (see Figure 5.38).

Figure 5.38. Santa Marta complex: Western Silo.



Source: author's photos (2019).

In the past, it was used as a storage space together with the Eastern Silo (the capacity of each silo was 2800 tones, with the nearby Santa Caterina warehouse (capacity 2100 tons), the entire storage facility totaled 7700 tons of cereals, enough to supply bread to an army of 100000 men for three months). There was no direct communication between the ground floor and other floors. The second attic floor was obstructed with the machinery for the movement of grains that from the ground, were brought to height and distributed from above into individual cells, probably exploiting trap doors in the floor. The basement floor was used as a connection with the Eastern Silo.

The restoration process concerned only the Western Silo. The Eastern Silo is in the property of the local authority and it is difficult to imagine its reuse project because of the presence of the huge silo for grain inside the building and the bond of the Superintendence.

Within the reuse project (2007-2009) it has been restored and adapted for the University use. On the ground floor there are two classrooms with a total of about 235 seats and a porter's lodge. On the first floor there are also two classrooms with a total of about 235 seats. The second floor has been left as it was in the past and now it is an auditorium for 480 seats. On the basement floor the support for the complex plant system is placed.

Besides the architectural aspect of the building, that was thought to be left the same as it was in the past, just with some small changes that helped its adaption for the new use, there is no connection with the past use of the building.

The second part of the reuse project concerned the building of the former bakery. It is a 118 meters long and 54 meters wide building, with five floors including one underground, comprising an almost square middle portion, two large wings either side and two side buildings in a U shape. Each of the three parts of the building had an internal courtyard. The building was fitted with machinery driven by steam engine for the transportation and milling of cereals, and the production of bread and hard biscuits. The equipment was located all over the complex. Bread was made in the central portion of the buildings, with two sets of six ovens. The two wings had complementary functions. On the ground floor, some rooms were used for the repair and maintenance of filed ovens, others as storage rooms. The upper rooms were employed to store finished products (Ferrari, 2017).

The basement floor was used in the past as a pantry for perishable foodstuffs. Three courtyards were entirely covered with earth and had no roof. Within the regeneration project the three courtyards were recovered in order to obtain a distribution system similar to that of the upper floors (see Figure 5.39).

Figure 5.39. Basement floor. Santa Marta Military Provisions Center.

Source: author's photos (2019).

The central courtyard was given a system of staircases and balconies, as well as lifts to the upper floors, in addition to the three original brick staircases. In addition, the balconies of the two side courtyards were completed, creating a link between the wings and the central portion of the building. The roofing of the three courtyards was implemented in steel and glass in order to maintain the natural lighting as in the past. 22 educational labs (8-10 work places each) were disposed along the external perimeter of the building, in a position that allows to enjoy natural lighting and ventilation. The two courtyards to the side and the area adjacent to the western courtyard are dedicated to the permanent exhibition, "Santa Marta, history and itineraries. From Provisions Centre to University Site" (the content of the exhibition will be discussed later). The central courtyard is used for temporary exhibits. In 2019 the University of Verona signed an agreement with the ADI Verona Association to display a collection of artwork. The project aims at teaching students about modern-day art languages based on an integrated teaching method combining specialist know-how and other related skills and expertise. This exhibition has no connection to the past use of the plant.

The ground floor was dedicated to the processing and production of bread in the past. Demolition of the original ovens took place in the early XX century, to replace them with the modern continuous ovens still preserved in the bakery today. The smaller spaces housed offices and various storage rooms. The current project includes an entrance hall with a porter's lodge and 11 classrooms (seven for about a hundred students and four for about fifty), a total of 758 seats. Some rooms are used for administrative services for students and as didactic units, offices and IT spaces. Two transversal bodies that originally housed the furnace system become an integral part of the distribution system and areas for meeting and socializing. In the Figure 5.40 the former places for the ovens, that unfortunately had to be demolished, can be seen.

Figure 5.40. Santa Marta Complex: ground floor (on the left) and first floor (on the right).

Source: author's photo (2019).

The first floor was a deposit of finished products. In the middle of the XX century, it was, probably, destined to the residences of military families. Today it hosts offices of the Department of Economic Sciences. There are about 80 work stations, 4 classrooms and rooms for students and technical/administrative staff. The need to create rooms of different sizes and for different functions, whilst safeguarding the overall brickwork, led the designers to use glass partitions and fixed furniture to mark out the spaces without interrupting the overall view (see Figure 5.40).

The second floor was dedicated to the deposit of finished products. For many years it was used to deposit military material, mainly clothing and footwear. Now there are offices of the Business Economics Department (About 80 work stations, 4 classrooms and rooms for students and technical/administrative staff).

The third attic floor was a deposit of finished products in the past. Now it hosts the new SMEC Library (see Figure 5.41) with 9000 square feet of shelving, catering for over 200000 volumes and 400 periodicals on economic and legal issues. It is the result of combining seven libraries previously spread over campus. The large rooms have 320 seats with 32 research places fitted with electronic equipment and 20 workstations. The top floor of the west wing includes 30 studios for staff of the Legal Sciences Department.

Figure 5.41. The Economics Library of the Santa Marta Military Provisions Center.

Source: author's photo (2019).

The main aspect of the past use and the history of the former industrial site preserved within the regeneration project is its architectural dimension: "The renovation work focuses on returning the building to its original form"[29]. The main aim of the regeneration project was to "preserve the spatial

[29] Source: descriptive panels of the exhibition "Santa Marta, history and itineraries. From Provisions Centre to University Site".

arrangements of the buildings and their construction quality, adapting then to new functions. It was decided to leave the building as its was constructed, using glass partitions to create rooms whilst allowing the eye to roam freely over the entire structure"[30].

Around the site on the walls few signs from the past period are still visible (e.g. two smalls windows on the ground floor that remind of the place where the bread was distributed, or the signs with the rooms' dimensions that come from the period when the sit became a facility for the acquisition, testing (quality control) and distribution of general supplies for the Italian Army in the middle of the XX century).

Before the inauguration of the former bakery building, Prof. Maria Luisa Ferrari, professor of economic history of the University of Verona, proposed to organize an exhibition dedicated to the history of the former industry. The exhibition entitled "Santa Marta, history and itineraries. From Provisions Centre to University Site" became permanent. It was inaugurated in 2015 together with the whole complex and was situated in the three main yards. In 2019 the University signed the agreement for setting up of a temporary exhibition on contemporary arts, and the exhibition of Santa Marta had to be reconsidered and restructured. Today it is placed partly in one courtyard, and partly in one room of the first floor.

The exhibition consists of the descriptive panels (both in Italian and in English) on the history of the site, on the history of the area (in a straight connection with the theme of bread and food in the war times), on the history of the reuse project. The descriptive panels are supported with a lot of photos both from the past and the current period, different ancient documents, postcards, map of the building with the ancient disposition of the ovens, maps of the buildings when it was a military barrack. As a part of the exhibition project, ancient equipment is placed around the whole building, even if not always in their original location. The musealization was scattered around the whole site. So even if the main reuse of the project is not connected with the history of the abandoned organization, this type of musealization allowed to preserve the spirit of the closed factory.

5.5.4. Discussion: *between musealization and sustainability*

The former industrial site is located in Verona, a city with 250 thousand inhabitants in the northeast Italy. The city with an important industrial history now is a place for a lot of abandoned industrial sites (Bassotto & Bassotto, 2008). The Santa Marta Military Provisions Center is located in the Veronetta district, today a heart of the University of Verona. The site was constructed when Verona became part of the Austrian possession in the Northern Italy. When the Austrian rule was

[30] Source: internal documents of the reuse project.

finished, Veronetta fell into poverty. In the beginning of the 1970s the Municipal general plan foresaw requalification of the whole area. The abandoned military site received a legal protection of the Superintendence which prevented the possibility of its demolition.

The site represents an example of a double transformation and reuse. Already in the middle of the XX century it was transformed from the space for storing grain and fodder, baking bread and hard biscuits for the army to the facility for acquisition, testing and distribution of general supplies for the Italian Army. Then in the beginning of the XXI century it was transformed into the Economics and Law Departments of the University of Verona. Its reuse project is an example of a complete transformation: from a closed military place that was almost unknown even by the local population to a public space of knowledge aggregation and its spread. The University public spaces are opened for all visitors for free what makes them accessible not only for the university community by also for the local one. Initially there was a certain resistance at the city level of different social organizations in the neighborhood that were afraid that the University would become a closed space without any openness to the external non-academic world. This perception was totally changed after the inauguration of the new project (from the interview with Prof. Ferrari).

The reuse project is an astonishing example of the former industrial site restoration from the architectural point of view. Executed by the architect Massimo Carmassi, it was granted example of the restoration of the former industrial site from the architectural point of view was granted the Gold Medal for Italian Architecture from the Milan Triennale, in conjunction with the Ministry for Culture and Tourism and MADE expo in 2015 (Ferrari, 2017). The spaces were adapted to the new uses in a way that the past aspect of the site was left almost untouched: in order to create new rooms and space the glass partitions were used so they allow the eye to roam freely over the entire structure.

Even if the core reuse of the site is not connected with the history of the closed organization, it is conserved and narrated through a permanent exhibition “Santa Marta, history and itineraries: from Provisions Centre to University Site”. The exhibition tells the history of the site in various historical periods, the local history of the area, underline the importance of the site in the economic development of the area mainly through graphical visual methods (maps, photos, various documents).

The crucial point is that musealization of the organizational history of the plant is not separated in one space but is scattered around the whole building. The approximate number of the visitors is 1500-2000 per year (except the university academics). It seems that there is almost no promotion of the site, it is not even present on the touristic website of the Municipality of Verona. It is not enough to save the abandoned industrial site, to restore it, but its heritage has to be visible and open for everybody.

5.6. Real estate: *Cazzola Woollen Mill in Schio*

The Cazzola Woollen Mill, one of the greatest testimonies of the industrial history of Schio, was founded in 1860. Schio is a 40,000-inhabitant town in a province of Vicenza (Veneto). It is known as the "Manchester of Italy" because it was an Italian central point for the wool trade (Sassi, Ricatti, & Sassi, 2013). In the XIX century it became an industrial town thanks to Alessandro Rossi who founded the biggest Italian wool firm of that period, Lanerossi (Visit Schio, n.d.).

The Cazzola Woollen Mill was the third most important textile factory in Schio, after Lanerossi and Conte woollen mills. It was managed by Cazzola family till 1955. Later several external companies tried to maintain the textile production till 1999 when the site was completely closed and abandoned. Immediately after abandonment it was purchased by the local construction company *Zermiglian Costruzioni spa* which has restored its main part, converting various spaces into housing residences. The square in front of the site was destined for a public use. And one space was requalificated in order to place a small exposition of the ancient machinery.

Figure 5.42. Cazzola Woollen mill.

Source: private archive of Zermiglian Costruzioni spa.

5.6.1. Historical background and abandonment period

The former industrial site was founded in 1860 on the site of the old Rubini (later Pizzolato) fulling mill by Pietro Cazzola, at that time the owner of a small glue-making business. He became a small textile entrepreneur. And only in the XIX and XX centuries with his son Luigi the woollen mill specialized in the production of carded fabrics, undertook the path of the steady development. He expanded the site and set up an ample green space within its territory. "During the 1920s, the wool mill was able to compete on a European level, not only with an increase in capital, but with a significant upgrade in technology and power" (Sassi et al., 2013).

During the First World War industrial production was interrupted and moved to Vedano al Lambro (near Monza), because the site hosted a military hospital of the American Red Cross. The site was visited by Ernest Hemingway who was working as the ambulance driver for the American Red Cross and stayed in Schio in 1918. The production after the war was at the European level, also thanks to the technological and energetic renewal pursued through the construction of hydroelectric plants in 1925 and in 1930 by Cazzola family. Under Luigi, the Cazzola firm evolved into a joint stock corporation, with sons Pietro and Aldo taking significant administrative responsibilities (Sassi et al., 2013). In 1932 the management of the site passed to the third generation of Cazzola family, Luigi's son Pietro, who ran the plant till 1950.

The Cazzola Woollen mill was closed in 1955. But the site remained active under the guidance of other companies, who tried to keep the textile sector competitive, producing cotton and silk-blend fabrics. In 1999, the last owner the *Gruppo Delle Carbonare* got bankrupt and the gates of the historic factory were closed forever (Sassi et al., 2013).

Straight after the abandonment, the 40.000 sq. m. large complex was purchased by the construction company *Zermiglian Costruzioni* in order to reconvert it in residences.

The cultural significance of the site

The literature on the Cazzola Woollen Mill encompasses its value in connection to three dimensions (identified in the chapter 2) that stands behind the motivation of the site's conservation.

From the point of the view of the importance of *architectural dimension*, it represents an important example of the industrial architecture in Schio.

It played an important role in the *economic development of the area and of the industry*. During the 1920s, the wool mill was able to compete at the European level, not only with an increase in capital, but with a significant upgrade in technology and power (Sassi et al., 2013).

Unfortunately, within the limited literature on the site there is no information on the importance of the working conditions and practices of the closed organization.

5.6.2. Reuse project, its implementation and current management of the site

The construction company *Zermiglian Costruzioni spa* was founded in 1959. Over the course of time it became one of the main actors involved in the urban development of Schio (Zermiglian Costruzioni, n.d.). Driven by the strong link with Schio, straight after the *Gruppo Delle Carbonare* became bankrupt, they decided to purchase the site. The aim of the reuse project was realization of private residences and lofts.

The project started with a convention between *Zermiglian Costruzioni spa* and the Municipality of Schio signed in 2004, as a part of the private urban implementation plan[31]. Under the Convention, the *Zermiglian Costruzioni* had a right to reconvert one half of the site into a residential area, one eighth of the site to an office area and other part to a commercial area (Convenzione, 2004). At the same time, the construction company had to guarantee a reconstruction of an area for a public use (an external square of 2.182 sq. m., a green area and a path of 690 sq. m., a building gallery of 1.519 sq. m., a museum with turbine/alternator/dynamo of 349 sq. m.). The construction company had also to guarantee preservation of the façade in its initial form. The negotiations on the final text of the convention was a long process, lasted for 5 years (1999-2004). The Municipality insisted on keeping the façade in its ancient form without adding any changes, e.g. terraces (from the interview with Alberto Zermiglian, *Zermiglian Costruzioni spa*). One of the reasons of the local authority's resistance was the fact that the site is positioned within the historical center of Schio.

The recovery project of the site started in 2004, was the work of the architectural studio of Emilio Mengato.

The site is structurally divided into five parts[32]. The first part (1.600 sq. m.) was restored in 2010 and requalified into lofts and prestigious residences situated on the first and the second floors (see Figure 5.43). In total 31 residences were created, from which 23 residences have been already sold[33]. The ground floor was reconverted into directional and commercial offices.

[31] Private urban implementation plan is a motion introduced with the Law 457/78 (Legge 457/1978) in order to address the problem of abandoned and degraded areas.

[32] Unfortunately, it was impossible to get the complete map with the indication of all parts of the site.

[33] From the interview with Alberto Zermiglian, *Zermiglian Costruzioni*.

Figure 5.43. Cazzola Woollen mill. Private residences.

Source: private archive of Zermiglian Costruzioni spa.

The project of the second part of the site (5.357 sq. m.) consists in the realization of single independent lofts. For the moment, one half of this part was restored.

The project of the third part of the site (10.000 sq. m.) has been presented to the local authority in the last months. The idea of the *Zermiglian Costruzioni* in collaboration with the Municipality of Schio and some investors, is to open a residential care home and social housing for elderly people. Another project consists in creation of a guesthouse for students - Paralympic athletes coming to the stadium located nearby.

The fourth part of the former industrial site (2.396 sq. m.) is currently abandoned. The future idea consists in the realization of terrace houses.

Meanwhile, according to the convention with the local authority, the fifth part was requalificated into internal and external spaces for a public use:

- public square (2.182 sq. m.),
- green open area and a pedestrian path (690 sq. m.),
- building gallery (1.519 sq. m.),
- museum with turbine/alternator/dynamo (349 sq. m).

In the Table 5.19 the main events of the site's history and the reuse project are summarized.

Table 5.19. Historical timeline of the Cazzola Woollen mill.

Date	Events
1860	Construction of the site by Pietro Cazzola.
End of the XIX century - 1932	Management of Luigi Cazzola, expansion of the site.
1918	Ernest Hemingway visited the site while it was destined to the military hospital of the American Red Cross.
1932-1950	Plant was managed by Pietro Jr. Cazzola.
1955	The production ran by Cazzola family was closed. The site remained active under other business groups.
1999	The last owner (Gruppo Delle Carbonare) got bankrupt and the site was closed.
1999	The site was acquired by the construction company Zermiglian Costruzioni.
2004	Convention between the *Zermiglian Costruzioni* and the Municipality of Schio.
2010	Regeneration of the first part of the site (private residences; directional and commercial areas) and an area for public use (external square and pedestrian paths; museum exhibition).

5.6.3. Between tangible and intangible heritage in the process of musealization

The Cazzola Woollen Mill consists of two-story ancient buildings constructed around a central courtyard. Thanks to the restriction introduced by the local authority, the regeneration project was able to maintain the original external architectural features, while adapting the internal spaces for the new uses. The only reference to the history of the plant in the new projects are the commemorative plaques located in the courtyard. Two of them are dedicated to the history of the woollen mill and one to Ernest Hemingway in memory of his permanence within the site (Figure 5.44). Another reference to the past is the bronze bust of the site's founder, Luigi Cazzola.

Figure 5.44. Cazzola Woollen Mill. Commemorative plaques.

Source: private archive of Zermiglian Costruzioni spa.

Based on the Convention with the Municipality of Schio, the Zermiglian Costruzioni had to reconvert a space of 349 sq. m. into a small exhibition (see Figure 5.45). The museum exhibition consists of several ancient machinery of the former industrial site (e.g. two shuttle looms and the old fire-fighting equipment).

Figure 5.45. Museum space. Cazzola Woollen Mill.

Source: Jacopo Ibello.

5.6.4. Discussion

The regeneration strategy of the Cazzola Woollen Mill stands in-between the inclusion of the abandoned area in the urban regeneration strategy of the area and the partial preservation of the tangible heritage of the former industrial site.

Schio, a former heart of Italian wool manufacturing industry faced a problem of a gradual abandonment of the industrial sites. In 1985, the Municipality of Schio promoted a detailed plan for its urban and environmental redevelopment in order to avoid degradation and identity loss of the district. It was approved in 1990 and subsequently carried out with exemplary restoration works continued until today, which have allowed the preservation of the peculiar characteristics and the unitary features of the XIX century district. The plan was aimed not at introducing legal restrictions but providing directions and solutions for interventions for the private owners of the buildings (Fontana et al., 2020).

The project of the Cazzola Woollen mill acquired by a private company for requalification in private housing followed the same logics. The convention signed between the construction company and the local authority included restrictions on preservation of external architectural features of the building, requalification of some external spaces for a public use and creation of small museum on the history of the abandoned organization.

Thanks to the interest of the local authority and to the restrictions introduced, it was possible to preserve even in a partial way the tangible assets of the site (external architectural features and some machinery conserved within the exhibition). Nevertheless, no attention was devoted to the preservation of the intangible heritage of the abandoned organization.

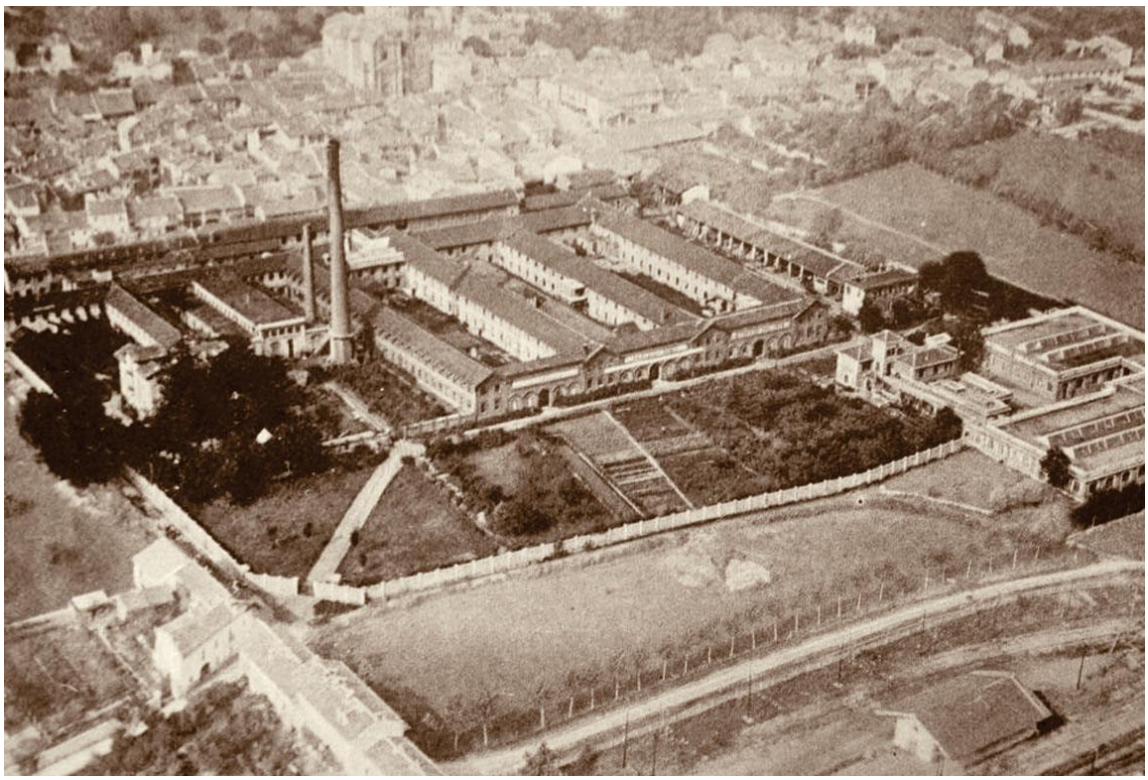
On one hand, the site is positioned as a part of the ‘open air museum’ of industrial archaeology in Schio. On the other hand, the exhibition seems to be very limited and not promoted[34].

[34] Unfortunately, it was impossible to visit the site because of the Covid-19 emergency. But from the desk research of the online sources it seems that exhibition is not even promoted on the touristic website of the Municipality of Schio.

5.7. New production: *Ex Fratelli Bosio's Knitwear factory*

Ex Fratelli Bosio's knitwear factory was founded in 1871 in Sant'Ambrogio di Torino (Metropolitan City of Turin). After the first period of growth, the production activities started to suffer and entered into a decline after the war period. In 1953 the factory was completely closed and all machinery was eliminated. In the following decades the site hosted several industrial companies, such as the motorcycle producer Itom, the pasta machinery producer Imperia. From the 1970s it was rented out to some small commercial activities. In 2019 a 15.000 sq. m. former industrial site was sold to two companies: San Michele Brewery (beer production and restaurant) and Torino Heritage association (exhibition, garage and various services for vintage cars).

Figure 5.46. Ex Fratelli Bosio's Knitwear factory.



Source: Raimondo (2020).

5.7.1. Historical background and abandonment period

The knitwear factory *"Manifattura Fratelli Bosio Società anonima"* was founded in 1871 by two brothers Pietro and Augusto Bosio in Sant'Ambrogio di Torino. It was established near the Cantarana

canal which waters were the main driving force for the production machinery. It was born as a knitwear and cotton waste spinning factory (Cantore, 2010).

In 1889, the manufacturing site employed 550 women and 150 men (Raimondo, 2020). In 1896 the numbers radically grew up, reaching 1000 employees. In 1924, the factory made-up of four two-story buildings interspersed with three lower buildings, was enlarged with a single story building used as a warehouse. In the same year a 15 meters high turret was constructed in order to signal the factory to travelers. It was demolished in 1984.

In 1927 the professor of engineering Mario Fossati carried out a research on the production cycle (Cantore, 2010; Fossati, 1927) through the analysis of the processing time and the organization of the plant in order to rearrange it according to the principles of scientific management (Taylor, 1911). After the plant's reorganization according to the Taylor's principles, the manual labor was reduced by 28-35% in the various departments (Fossati, 1927).

Unfortunately, after the first years of growth and the work reorganization, the factory started to close various departments. At the same time, the research on new markets was executed, e.g. the one related to military supplies. In 1943 the property of the plant passed to Vittore Oggioni who changed the name of the factory to *"Manifattura S. Ambrogio"*. He kept the plant in function for the whole period of the World War II, hiring a lot of workers so all of them could get the green cards[35]. But the production was in decline and he had to rent out the machinery and spaces. In the following years the factory was renamed twice (into Italtecsil and lately into Italtexil). And at the end in 1953 because of the market conditions, conflicts between employees, unions and property owner, as well as the numerous thefts of internal goods, the factory was completely closed. All machinery was eliminated. And the site was sold to Corrado Corradi. For a period, one part of the site was used by the Magnadyne of Sant-Antonio, and later by Sormani (supermarket trolleys production). In 1957 the site was sold to the motor producer Itom Motor s.a.s., who hold the production within the site till 1975. In 1970s Arturo Corradi & C. of the Itom Motor S.a.s. rent out the site to the pasta machines producer *Imperia* S.p.A. In the following year some parts of the site were rent out (e.g. to *Spinotterie Piemontesi* specialized in production of motor pins and coupling axes).

In the following years, the former manor house was sold to the Municipality of Sant'Ambrogio di Torino which moved its headquarters there (see Figure 5.47). And on the land around the site was used to construct a new school[36].

[35] The owner of this document avoided deportation to Germany.

[36] From the interview with the owner of the San Michele Brewery.

Figure 5.47. Municipality in the proximity of the Ex Fratelli Bosio knitwear factory.

Source: (Comune di Sant'Ambrogio di Torino, 2018).

In 2019 a 15.000 sq. m. former industrial site was sold to two companies: San Michele Brewery (beer production and restaurant) and the Torino Heritage association (exhibition, garage and various services for vintage cars).

The cultural significance of the site

The literature on the Ex Fratelli Bosio's knitwear factory encompasses its value in connection to three dimensions (identified in the chapter 2) that stands behind the motivation of the site's conservation.

From the point of the view of the importance of *architectural dimension*, it represents an important example of the industrial heritage in the historical city center of Sant'Ambrogio di Torino. The factory differs from the industrial architecture of those years as the departments were build following the production cycle path.

The plant represented the most important knitwear factory of the province of Turin (Castronovo, 1965) and was crucial in the *economic development of the area and of the industry*.

An important characteristic of the *importance of the working conditions and practices* within the plant was industrial paternalism (e.g., the presence of the kindergarten, organization of the workers' free time). But at the same time there were piecework, extended working shift even on holidays and female work had no guarantees for maternity (Cantore, 2010).

5.7.2. Reuse project, its implementation and current management of the site

The discourses on the site's reuse were already present from the moment of its abandonment in 1953. In the following years the site was rent out to various manufacturing companies (e.g. Itom, Imperia, Spinotterie Piemontesi). The last tenant was the San Michele Brewery (from 2013).

The San Michele Brewery was born in 2010 from a passion of Bruno Gentile for artisan beer (Birrificio San Michele s.r.l., n.d.). He wanted to enrich the production and was in search of a new space. In 2013 he rent one part of the Ex Fratelli Bosio's Knitwear factory (around 3000 sq. m. out of a total of 15.000 sq. m.). The recovery project was dedicated to the restoration and adaption of the spaces to the new use. The San Michele Brewery currently produces over 500,000 bottles a year and exports to many foreign countries. In the following years they have opened also a brewpub where the local specialties are offered together with the beer (from the interview with the owner of the San Michele Brewery).

At that time, the rest of the site was in a complete state of neglect. Till the beginning of the 2010s the whole site was legally considered as a productive one even if starting from 1953 a lot of spaces got abandoned. The local authority examined transformation of the former knitwear factory (Comune di Sant'Ambrogio di Torino, 2013) and the production destination of the site was reconfirmed with some clarifications:

> "*considering the historical and architectural importance of the buildings, their actual state, the current production already present within the site should be maintained"* – what meant that the industrial activities that were already present within the site (like *Spinotterie Piemontesi s.r.l.*, San Michele Brewery) could remain operative.
>
> "*the areas which are inappropriate for production have to be a subject of a Detailed plan of a public initiative*".

The local authority was aware of the fact that the owner, Arturo Corradi & C. had a difficulty in finding the investors for the site. So considering the architectural and historical importance of the site, the Municipality organized working tables with possible stakeholders, local operators, foundations and the Polytechnic University of Turin. The result of the working tables were transformed into a Detailed Plan (based also on Batsivari & Caione (2013)) which consisted in the requalification of the site by maintaining some spaces and eliminating others. The reuse strategies were: real estate (at 25% of the whole dimension), tertiary services (public and private offices, research areas, startups and others) (50 % of the whole dimension), services for individuals or companies (shops, family service crafts, production crafts, cultural area) (25% of the whole dimension).

In 2018 the local authority launched an international competition of ideas of an architectural enhancement of the municipal area (Comune di Sant'Ambrogio di Torino, 2018). One part of the call was dedicated to requalification of the Ex Fratelli Bosio Knitwear factory. The aim of the call was to identify a part of the site for a public use (max 15% of the total dimension), to create a project in relation to enhancement of the territory and to establish a dialogue between the site and the surrounding territory. The Preliminary Document of the international call specified that "there are no legal restrictions on the buildings according to the laws in force". However, under the Regional law 56/1977 the site is considered as an urban settlement with a historical-artistic character as an industrial heritage and has to be safeguarded. The competition was open to architects and engineers. The final results were published in February 2019 with three winning projects. The first one (by Uberto Degli Uberti) proposed requalification of the site into spaces for public use, restructuring the Brewery spaces, parking spaces, private residences, some private services. The second one (by Alessia Sarno) foresaw the reuse into auditorium and public services, bicycle area, fitness and climbing areas, ITOM museum, hotel and spa area, food area, brewery, temporary and permanent exhibitions, co-working area, hostel, residences and info point. The third one (by Stefano Pendini) proposed requalification into: bike area, temporary residences, co-working area, associations, start-ups, library, garden area (with research and various services). These projects are listed in order to show the vastness of the reuse alternatives.

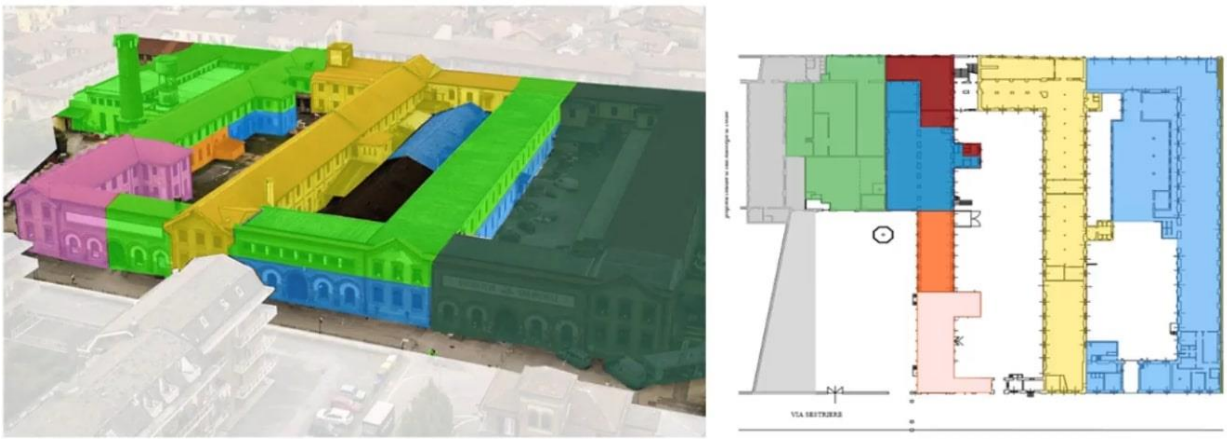
At the same time, the founder of the San Michele Brewery was discussing the purchase of the site with the owner. And in 2019, after several years of negotiations Bruno Gentile together with another investor acquired the whole complex (see Figure 5.48). The property is divided almost equally between two investors.

Figure 5.48. Ex Fratelli Bosio Knitwear factory nowadays.

Source: (TorinoHeritage, 2020).

The second investor is the association *Torino Heritage.* Its aim is preservation of the industrial history and industrial development of Turin and in particular the history of vintage cars. The restored area of Torino Heritage's part of the site is visible in the Figure 5.49.

Figure 5.49. Restored area of the Torino Heritage association.



Restored area: around 1000 sq. m. of the blue area. Future projects: other part of the blue area – restoration services for antique cars; orange and dark red area – car services, e.g. auto electrician garage.

Source: (TorinoHeritage, 2020).

The space was inaugurated in November 2020. The restored space (around 1000 sq. m.) hosts a clubhouse (space for seminars and workshops), a garage for vintage cars and a mechanical workshop. Members can access various services through membership fees. The photos of the restored part are visible in the Figure 5.50. The future projects concerns the creation of a contemporary arts space, a Montessori school and the Itom museum (organization located in the site from 1953 till 1975)[37].

Figure 5.50. Torino Heritage in the Ex Fratelli Bosio knitwear factory.

Source: (TorinoHeritage, 2020).

[37] From the online press conference of the inauguration of Torino Heritage space, 02/11/2020.

In the Table 5.20 the main events of the site's history and the reuse project are summarized.

Table 5.20. Historical timeline of the Ex Fratelli Bosio's knitwear factory.

Date	Events
1871	Foundation of the factory Sant'Ambrogio di Torino.
1924	Structural modifications of the site.
1943	Transfer of the property to Vittore Oggioni.
1953	Knitwear production was closed and the site was partly abandoned.
1957-1975	The site was rent out to Itom.
1975-2013	The site was rent out to Imperia company and other small companies.
2013	The site was rent out to the San Michele Brewery.
2018	The Municipality of Schio launched an international call for reuse possibilities of the former industrial site.
2019	The site was sold to the San Michele Brewery and to the association "Torino heritage".
2020	Inauguration of the Torino Heritage exhibition and various services dedicated to the vintage cars.

5.7.3. Between tangible and intangible heritage in the process of musealization

At the moment of the acquisition, the site was in a complete state of a neglect. Today around 3.000 sq. m. of 15.000 sq. m. have been restored. All restored spaces were adapted for the new uses. The main attention was dedicated to the conservation of the façade. The only difference is the addition of the signboard with the name of the brewery, but its style was adapted to the general style of the façade.

The decision of the preservation of the external architectural characteristics of the building was not motivated by any public restriction but by the location of the former industrial site in the heart of the historical center of the town. The founder of the San Michele Brewery in the interview: "The location gives credibility to the project". Nevertheless, for the moment there is no connection to the intangible heritage of the former knitwear factory in any of the regeneration projects.

The only project that can be connected with the preservation of the historical heritage is the future project of the Torino Heritage association, creation of the museum dedicated to the ITOM Motor

S.a.s., a motorcycle producer and ex owner of the site (ownership from 1953 till 2019; production activities from 1953 till 1975).

5.7.4. Discussion

The Ex Fratelli Bosio's knitwear factory is situated in Sant'Ambrogio di Torino, a small town of less than 5.000 inhabitants in the Metropolitan city of Turin, Piedmont. The site has already passed numerous regeneration processes. After the closure in 1953 of the textile manufacturing production, the site was partly reused several times by several industrial companies in the course of the years.

The particularity of such site in respect to other case studies from this research is its position in the heart of the historical center of the town. Because of this, it was always under attention of the public authorities. Nevertheless, this attention has been never formalized in any legal restriction form. Besides the fact that the Municipality had launched an international call of ideas for an architectural enhancement of the municipal area, which included the recovery and requalification project of the former industrial site. Still the call did not include any obligation of the preservation of the intangible heritage of the site. It was fully devoted to the inclusion of the new project in the general urbanization strategy of the area.

The current regeneration processes of the site are directed at the development of the new projects that consider the former industrial plant only as a "location", as a "container".

5.8. Eliminating: *The blast furnace 1 (Afo1) of the Lucchini Steelworks in* Piombino[38]

The blast furnace 1 (Afo1) was constructed in the middle of the 1950s as a part of the Piombino Steelworks. In the end of the 1970s it was abandoned due to the technological innovation process of the plant. The importance of its significance brought to a number of discussions on the possibilities of its reuse. But the state of a neglect of the furnace and the necessity of the Lucchini Steelworks in the spaces for the new production facilities brought to the decision of its demolition in 2008. This action was followed by a complex project of the intangible heritage preservation. Nevertheless, the crisis of the Lucchini Steelworks together with the bureaucratic (and perhaps political) difficulties of the Municipality of Piombino brought to the abolition of all projects.

Figure 5.51. The Lucchini Steelworks in Piombino.

Source: (Lezza, 2010).

[38] This case study is based on the short reconstruction of the historical events happened around the demolition of the Afo1.

5.8.1. Historical background and abandonment period

History of the plant

The steelworks plant was founded in 1897 by the initiative of the Benini family and *Società Anonima Alti Forni e Fonderie di Piombino*. In 1901 the Bondi family assumed the control of the company and launched a restructuring program in order to build the first continuous cycle steel plant in Italy. In 1911 the plant became part of the Ilva consortium and took over the management of the main Italian steel plants (like Bagnoli, Terni, Savona). In 1917 Max Bondi assumed the control of the Ilva consortium and became the owner of the Italian steel full cycle industry. Because of the crisis of the 1930s, in 1936 the plant came under full public control till the early 1990s. In 1992 it was purchased by the Lucchini group, who sold it in 2006 to the Severstal group with the maintenance of a minority of shares and of a company name (Preite, 2009). In 2014 the plant was bought by Algerian group Cevital and in 2018 passed to the Indian group Jsw (Jindal South West). The latter has in mind to restart the steel industry (Iyengar, 2018).

History of the blast furnace (Afo1)

The history of the blast furnace 1 (Afo1) brings to the middle of the 1950s when, under the Sinigalia plan which favored the production of finished products to that of semi-finished ones, three blast furnaces (Afo1, Afo2, Afo3) were constructed. In 1976 because of the low productivity of Afo1 and its high management costs, it was abandoned in order to give place for the new blast furnace Afo4, which was constructed in 1978.

5.8.2. Recovery versus demolition

In 1993 the blast furnace 2 (Afo2) and the blast furnace 3 (Afo3) were demolished in a cruel way without collecting any graphic, photographic or audiovisual documentation.

In 1994 the general regulatory plan of the Municipality of Piombino defined the iron and steel plants as the sites of historical interest and considered the need to reclassify 27.000 sq. m. (in correspondence with the old agglomeration plant and the blast furnace Afo1) to an industrial archaeological park. But the convergence between the need of the Lucchini and those of the local authority brought to the removal of the urban constraints of 1994 within the structural plan of the Val di Cornia area signed in 2005 (Preite, 2009). The state of the neglect of both the plant and the blast furnace Afo1 brought to two decisions. In 2006 the agglomeration plant was dismantled. And in 2008

it was decided to demolish the Afo1. Its demolition was fundamental to the industrial group in order to have space for the new production facilities (Pepi, 2017).

In 2008 Lucchini and the local authority reached an agreement according to which the municipality authorized Lucchini to demolish Afo1. In return, Lucchini had to give back a large area used by the company to the Municipality, allowing the local administration to allocate it to the "Future City" project (creation of museum, auditorium, exhibition hall, municipal offices, canteen) within the Integrated plan for sustainable urban development (PIUSS) of Piombino.

Therefore, the Lucchini group, the Municipality of Piombino, the Ansaldo Foundation and the Italian Association for Industrial Archaeological Heritage (AIPAI) signed a Memorandum of understanding which included:

- reconstruction (through archival documents and interviews) of the company's history;
- photographic documentation of the plant before and during demolition;
- reconstruction, through appropriate cartographic drawings, of the production cycle;
- survey of the entire structure by means of 3-dimensional laser technologies;
- study for the construction of an archival and museum center for the enhancement of all the evidence that can document the history of the steel industry in Piombino and in Tuscany (Tognarini, 2008).

The Museum should have been located in an old abandoned industrial building, destined for demolition. The Municipality participated with the project of the museum in the PIUSS (Integrated Sustainable Urban Development Plan - project financed through the ERDF 2007-2013) and was granted 20 million euro with the co-funding of the Municipality of 18 million euro for all projects to be carried out by 2014). Consequently, the local authority signed an agreement with the AIPAI for elaboration of the museum layout project. The aim of the project consisted in the conservation of the memory of the demolished heritage (Afo 1), the architectural redevelopment of the industrial heritage building and the urban revitalization of the area. Then, for some reasons (economic, political) the PIUSS was abolished.

The example of this case (even at the end characterized by a collapse) showed the importance of the involvement of the various stakeholders in the process of raising awareness to the industrial heritage, in this case to the intangible heritage. The strong collaboration between different stakeholders: the public, the private and the association of the industrial heritage, brought to the possibility of the preservation of the intangible heritage, of the integration of the production site with the urban area.

6. Main strategies of the industrial heritage reuse processes

After the exploration and analysis of each case study as a stand-alone entity, this chapter proceeds with the cross-case analysis from different perspectives. The first paragraph is dedicated to the phase of preparation and implementation of the reuse project (para. 6.1). The second one discusses the critical issues of the current management of the new projects (para. 6.2). The third paragraph focuses on the ways of preservation and narration of organizational history within different regeneration strategies (para. 6.3). And the last part is dedicated to an overall perspective in which the issues that cohere the preservation of the organizational history and the supervision of the new projects are highlighted (para. 6.4).

The Table 6.1 summarizes all dimensions through which the case studies are analysed.

6.1. Issues in industrial heritage reuse projects

The reuse of former industrial sites is a complex decision-making process. This process consists of various levels that do not work in sequence, but rather in parallel one with another. The reuse is an act of re-semantization of signs (Balzani, 2015). The reuse is a process of preservation of tangible and intangible heritage. And also it is a process of regeneration of functions (social, economic, political) (Parisi, 2009).

In the beginning of this research it was supposed that the diversity of the reuse types underlies the decision making process of the projects. The analysis of the eight case studies showed that even very different reuse strategies have conceptual similarities. The results of this analysis are discussed in this paragraph, as well as the main driver that stands behind the reuse strategy choice.

6.1.1. Centrality of historical preservation

The selection of the case studies was based on the literature analysis from which the unique classification of various reuse types of the former industrial sites was constructed (see chapter 2). One case study was chosen for each regeneration strategy (Musealizing, Musealizing into a park, Maintaining the initial use, Transforming into a cultural hub, Public oriented services, Real estate, Launching a new production, Eliminating history). The case study analysis showed that in the reality none of them represent the single use. The variety of different reuses for each case study is listed in the Table 6.2. All reuses were divided into three main categories:

Table 6.1. Cross-case analysis.

		Former Florio plant	Archaeological Mines Park of San Silvestro	Manifattura dei Marinati	OGR	Santa Marta Military Provisions Centre	Cazzola Woollen Mill	Ex Fratelli Bosio's Knitwear factory	Notes
Reuse project	**Mix use**	industrial history museum/ cultural events/ facilities/ abandoned	industrial history museum/ touristic park/ other cultural uses/ facilities/ abandoned	industrial history museum/ production/ other cultural uses/ facilities abandoned	cultural hub/ technological hub/facilities/ abandoned/ eliminated	education/ cultural events/ facilities/ abandoned	real estate/ cultural use/ abandoned	new production/ vintage cars services/ cultural use/ facilities/ abandoned	All uses are mix and have an abandoned part. It is caused by big dimensions/ architectural state/ high investment
	Opportunity cost	low	high -> low	low	high -> medium	high -> medium	medium	low	naturally (or artificially) low -> cultural/historical uses
	Ownership transfer	private -> public	private -> public	public (not changed)	public -> private -> granted to public	public -> public	private -> private	private -> private	Public owner -> more cultural/historical focus; Private owner -> mostly commercial focus
	Investment (million euro)	20	8,6	3,5	100	45	private funds	private funds	public projects -> mostly EC funding; private projects -> private funds
Current management	**Intended BM vs realized**	not completely realized; closed parts	almost not changed	evolved in several steps	not changed	not changed	evolving	evolving	often evolving because of huge dimensions and impossibility of one-time big investment
	Earned income	ticketing, private events	ticketing, merchandising, concessions	product sale, ticketing, events	concessions, events, ticketing	high-education	apartment sale	product sale and restaurant revenues, membership fees	
	Income gap	Municipality city tax	cross-subsidizing, local authorities investment	self-financed	shareholders' investment	not relevant	not relevant	(probably?) self-financed	just cultural uses -> not self-financed
	Financial autonomy	no	partial	yes	partial	not relevant	not relevant	(probably?) yes	
	Control over human resources	no	yes	yes	yes	not relevant	not relevant	yes	
	Governance	confused network of 4 public authorities	in house-providing society/ outsourcing	outsourcing	corporate	university	private	two equal private companies	a variety of public ways of governance: from ad hoc to not structured at all
Musealization of organizational history	**Level of content**	all-encompassing	selected	vintaging	sketching	sketching	selected	n/a	
	Spatial dimension	distributed	distributed	distributed	disconnected	scattered	disconnected	n/a	cultural uses -> narration distributed among all the site; other uses -> more localized choices
	Level of expression	oral	audiovisual	all senses	multimedia	graphical	artifacts	n/a	

- Main reuse: the main “use”/activity/service of the new reuse project,
- Secondary reuse: additional activities/services of the new reuse project,
- Abandoned or eliminated part (if present).

Table 6.2. Variety of reuse types for all case studies.

	Main reuse	**Secondary reuse**	**Abandoned/eliminated part**
Former Florio plant	museum of industrial history	other cultural uses (exhibitions on local history, on contemporary arts), facilities (conference hall), external use (turtle rescue centre)	abandoned part (one third of 36.000 sq. m.)
Archaeological Mines Park of San Silvestro	museums of industrial history/ touristic park	other cultural uses (documentation center, archive), facilities (restaurant, hotel, warehouses)	abandoned part (around 200 hectares out of 450)
Manifattura dei Marinati	original production/ museum of industrial history	other cultural use (video/ documentation center), facilities (bookshop, company shop)	abandoned part (2.000 sq. m. out of 3.400 sq. m.)
Officine Grandi Riparazioni	cultural hub/ technological hub	facilities (restaurant area, conference rooms), external use (university spaces)	eliminated and abandoned part (more than 160.000 sq. m. out of 190.000 sq. m.)
Santa Marta Military Provisions Center	education	cultural use (exhibition on site's history, exhibition on contemporary arts), facilities (bar)	abandoned part (2.000 sq. m. out of 36.000 sq. m.)
Cazzola Woollen Mill	real estate (residential and long term care)	cultural use (exhibition on industrial history)	abandoned part (more than the half of 30.000 sq. m.)
Ex Fratelli Bosio's Knitwear factory	new production/ vintage cars services	cultural use (exhibition), facilities (restaurant)	abandoned part (14.000 sq. m. out of 17.000 sq. m.)
Blast furnace 1 in Piombino	eliminated		

Besides the core use of each project (e.g. heritage in the Former Florio plant; touristic visits in the Archaeological Park of San Silvestro), in each project some secondary activities are offered. These are usually various facilities or some cultural projects. The facilities are for-profit services destined to raise the revenues of the managing company (like restaurant/bar, hotel, conference spaces, bookshop or company shop). These activities are usually outsourced and managed by some external company which in turn pays to the main organization a rent. These type of facilities can be complementary to the main uses (like in the case of the Archaeological Park of San Silvestro, probably only the visitors of the Park will use the restaurant on the territory). But such facilities can bring also attract another separated customer segment (like in the OGR project, customers can visit the restaurant area without being interested in the cultural and technological hub, or in the Santa Marta Military Provisions Centre where the historical exhibition attracts a particular customer segment who is not interested in the primary service (education) offered)[39].

Secondary cultural uses refer mainly to not-profit activities aimed at enrichment of cultural offer, attraction of additional visitors and preservation (even if in a limited way) of the organizational history of the former industrial site. The secondary cultural use can enter in conflict with the main activity in two situations.

One concerns the sites mainly dedicated to the preservation of the abandoned organization's history. On the one side, the secondary use can attract new visitors and raise the general value proposition of the project. On the other side, the coherence between two "cultural" uses is important in order not to reduce the visitor's perception. As, for instance, happened within the Former Florio plant in Favignana, where several spaces are dedicated to the Battle of the Aegates - an important historical event for the local history, which surely attract new visitors to the site but can somehow put into the shadow the logical path of the museum initially dedicated to the history of tuna production. There is also an exhibition on recycled plastic recovered from the sea in Favignana. This exhibition has been accessible to the public in the last years but at the same time several spaces of the main exhibition are closed to the public because of the maintenance problems. So there is a risk to go away from the initial reuse strategy and to mix up the museum logic.

The second situation concerns the sites which main reuse strategy is not cultural. In this case there is a risk of not including the secondary cultural use (e.g. a small exhibition dedicated to the history or some other exhibition) within the general strategy of the site. This happened in the reuse project of the Santa Marta Provisions Military Center. Together with the inauguration of the Department of Economics of the University of Verona in the former industrial site, an exhibition on the history of

[39] In particular for the conflicting uses of heritage sites see (Zan & Yu, 2018). "The nature of a specific site is the result of the interplay between these macro variables and their inner articulation".

the site, on the history of the industry and the local history of the area was opened. The exhibition was organized and is now internally managed but the academic staff. It is not included into the promotional circuits of the city, occasionally attracting just 1500-2000 visitors per year. Another example is the regeneration of the Cazzola Woollen mill into a real estate site. When the site was acquired by a private construction company one of the conditions of the local municipality was the creation of a small museum with an exposition of the artifacts and some descriptive panels on the site's history. The exhibition was opened but there is no information on it on the web. Also the construction company that manages the site did not provide any information about it[40].

One the research question of this project is how the organizational history of the former industrial sites can be preserved within various reuse strategies. Looking from this perspective on the reuses listed in the Table 6.2, they can be classified into four main groups:

- Single-use mainly dedicated to the historical preservation,
- Multi-reuse with partial historical preservation,
- Single-use with "residual" historical preservation
- Destructed.

The first group is represented by the reuse strategies where preservation of the intangible heritage of the abandoned organization is the core reuse. These are industrial heritage museums where both tangible and intangible heritage are preserved and the musealization is distributed around the whole site. Three case studies from this research falls into this category:

- 'Classic' museum on the history of the former industrial site and the history of the industry - the Former Florio Plant in Favignana.
- 'Park' museum on the history of the former industrial site and the history of the industry with both museums and open-air paths - the Archaeological Mines Park of San Silvestro.
- 'Live' museum on the history of the former industrial site and the history of the industry with a simultaneous observation of production activities - the *Manifattura dei Marinati* in Comacchio.

The second group refers to the reuse strategies where the main reuse is characterized by several activities from which at least one is dedicated to the cultural use. These activities can be managed by one company as in the OGR project or by different companies like in the reuse project of the Ex

[40] Unfortunately, because of the Covid-19 emergency it was not possible to make a field visit to the site.

Fratelli Bosio's Knitwear factory. The history of the abandoned organization can be partly preserved[41].

The third group is represented by the reuse strategies with a single main use not connected to neither to preservation of the history of the abandoned organization, nor to any cultural use. The history of the abandoned organization can be partly preserved. For instance, the reuse projects of the Santa Marta Military Provisions Centre and the former Cazzola Woollen mill.

The last group is made up of the reuse strategies which are directed to eliminate the industrial heritage site. Example of this reuse type is the Blast Furnace 1 of the Lucchini Steelworks in Piombino.

6.1.2. Opportunity cost as a central concept in reuse strategy choice

The central issue of the regeneration strategies of the former industrial sites is the concept of the opportunity cost. Opportunity cost is typically defined as "benefits foregone as a result of rejecting the next best alternative action" (Becker, Ronen, & Sorter, 1974). This concept stands behind all processes of the reuse projects: what regeneration strategy to choose, what part of the new project will be dedicated to the historical preservation of the abandoned organization and, looking ahead on the issues that are discussed later, what part of the organizational history is musealized and how.

The main issue that influence the possibility of the reuse alternatives for the former industrial sites, their opportunity costs and the choice of the reuse strategy is its market value. The point is not to quantitatively measure this variable but to understand at the conceptual level what could be its drivers in the case of the recovery of the former industrial sites. The element that apparently can affect the market value of the site is the context in which the site is located. The site can be located in the rural area far away from the inhabited locations and in the urban area[42].

Another issue that influence (reduce) the opportunity cost of the reuse projects is the introduction of the legal restriction by the governments or other public authorities. In Italy there is still no general criteria that regulates this process. In the majority of the cases it depends on the local context and in the interest of the various actors.

The way to prevent the complete abandonment of the former industrial sites is a protection introduced by the public authorities, e.g. a legal restriction of Superintendence preventing the

[41] In the case of the Ex Fratelli Bosio's Knitwear factory there is a future project that concerns in opening a museum of Itom, a motorcycle industry that occupied the site after the initial production was abandoned.

[42] The context is definitely a more complex issue that is based on the number of the indicators not considered in this research (see e.g., Della Spina & Rugolo (2021), Mecca & Lami (2020)). Here the focus is mainly on the legal restriction introduced by the public authorities.

demolition, a regulatory plant of the city, monumental constraints of the regional administrations. For instance, in order to requalificate a site for another use in Italy, the private organizations have to refer to the municipality with a private initiative recovery plan. It is a motion introduced with the Law 457/78 (Legge 457/1978). in order to address the new, at that time, problem of abandoned and degraded areas. The local authority in its turn can introduce in this plan various conditions on the preservation of the historical memory of the abandoned organizations. Unfortunately, these conditions usually refer to the preservation of the tangible assets.

In this research there are three reuse projects that had a low opportunity cost. The first one is the Former Florio plant in Favignana. It is located on a small island in the province of Trapani and for centuries represented the main source of the economic development of the area. There is no legal restriction on the site itself but its restoration is the logical continuation of the constant action of protection and enhancement that the Superintendence of Trapani started on the Aegadian Islands[43].

The second one is the Archaeological Mines Park of San Silvestro. It is located in the rural area, in the middle of the mountains. When the mining site was abandoned, it was in a complete state of the neglect and risked to become an open quarry. That is why the initial opportunity cost of the historical preservation was medium/high. Thanks to the interest of the local authority, the creation of an open quarry was avoided by the Local Development Plan through which the Municipality of Campiglia Marittima expressed the willingness to enhance the territory and create an archaeological park. The market value was decreased, and therefore the opportunity cost of the possible reuse alternatives reduced.

The third project with a low opportunity cost is the reuse project of the *Manifattura dei Marinati*. It is located in the historical area of Comacchio, a 22 thousand inhabitants' town in the province of Ferrara. For centuries the eel fishing and production was the main source of the economic development of the Comacchio area. This was the reason of the high awareness of the local authority to preserve the history of the abandoned organization and after to reactivate also the production.

Then there are two projects with an initial high opportunity cost that was somehow reduced by the introduction of the legal restriction. The *Officine Grandi Riparazioni* is situated in the area of Turin that was developed thanks to the presence of various industrial sites. The moment of the site's abandonment was characterized by a wave of industrial sites' closure. The industrial vacuums became a problem of a public order. And the OGR risked demolition as a part of the Municipal General Plan (1995). The opportunity cost of its preservation for very high comparing to its demolition and giving spaces for a public use. Thanks to the attention raised by various organizations on the importance of

[43] Favignana is one of the five islands of this group.

the OGR preservation, in 1997 the Superintendence introduced a legal restriction preventing demolition and invasive reuses.

The Santa Marta Military Provisions Center is situated in the area called Veronetta in Verona. It was constructed when Verona became part of the Austrian possession in the Northern Italy. When the Austrian rule was finished, Veronetta fell into poverty. In the beginning of the 1970s the Municipal general plan foresaw the requalification of the whole area. The abandoned military site received a legal protection of the Superintendence which prevented the possibility of its demolition.

Last two projects with no restriction or with a quite light restriction (which does not consider the typology of the reuse or strict supervision of the preservation of both external and internal aspects of the site) are considered as ones with relatively low/medium opportunity cost.

The Cazzola Woollen Mill is situated in Schio, a heart of the wool trade in Italy in the past, a so called "Manchester of Italy". An industrial city in the past, nowadays proposes various outdoor paths on the industrial history. Nevertheless, the sites are either in abandonment or in a private property. The opportunity cost was quite high. There is no legal restriction of the Superintendence on the site. Nevertheless, when the new private owner requested to the Municipality the approval of the private initiative recovery plan, the local authority introduced several conditions in this plan: necessity of the façade preservation, creation of a small museum space dedicated to the abandoned organization and destination of some open spaces for a public use.

Another project managed by two private organizations is the reuse of the Ex Fratelli Bosio's Knitwear factory. It is located in the historical center of Sant'Ambrogio di Torino, a small city in the province of Torino. The former manor house of the factory now hosts the headquarters of the Municipality. After the abandonment some parts of the site were rent out from time to time to some companies but there were difficulties in finding an investor for the whole structure. Then the municipality tried to study various reuse possibilities but without any result. And in the end the site was bought by two private investors which did not have any legal constraint from the local authority for the restoration and reuse of the site.

6.2. Issues in management of the former industrial sites

The regeneration projects are embedded in the local differences and idiosyncrasies of the specific context that have to be reconstructed in order to understand how even initially similar projects function in a different way.

In this part critical issues and characteristics of the reuse project planning and its current management are highlighted. As already mentioned before, in this research the analysis of the current

management is relevant only for the projects that are mainly dedicated to some form of cultural use (e.g. museums, cultural hubs). It concerned four case studies: Former Florio plant in Favignana, Archaeological Mines Park of San Silvestro, *Manifattura dei Marinati* in Comacchio and *Officine Grandi Riparazioni* in Turin.

6.2.1. The reuse project planning

The regeneration projects of the former industrial sites are characterized by the high initial investment in the property acquisition. The case studies showed several scenarios. Two abandoned industrial sites (Archaeological Mines Park of San Silvestro; Former Florio plant in Favignana) were in the private property and were acquired by the public authorities. Other two privately owned (Cazzola Woollen mill and Ex Fratelli Bosio's Knitwear factory) were acquired by the private companies. Publicly owned *OGR* was acquired the private company, and thus given back to the public sector. And the *Manifattura dei Marinati* in Comacchio was already in the property of the Municipality of Comacchio.

The consequent investment cost in the regeneration of the abandoned sites are extremely high. This is caused by cost for the research project, the high cost of restoration, security, insurance cover (Oglethorpe & McDonald, 2012) and adaptation for the new use. The case studies were also selected in order to offer a representative overview of both public and private projects. And the analysis showed that the publicly owned projects are mostly cultural/historical focused and the private ones have more commercial focus.

The element that characterizes all case studies is the fact that all projects are results of emergent strategies. They all emerge from an initial plan that indicate some general aspects and then are 'adjusted' with the time by the local context and the behavior of the actors. In any case, the initial Masterplan for the whole site is important in order to not lose the coherence between different parts of the project, as, for instance, happened in the case of the Former Florio plant in Favignana. The initial project foresaw the recovery of the two third of the site. Meanwhile, the rest of the site fall in a complete degrade.

Another aspect that characterized the major part of the reuse projects is their step realization according to the initial plan. It happened in the reuse project of the Archaeological Mines Park of San Silvestro, the new project of the *Officine Grandi Riparazioni* and the recovery of the Santa Marta Military Provisions Center.

The private reuse projects were mostly financed by the private funds and the implementation phase was shorter than the one of the public projects. The public reuse projects were mostly funded

by the European Union funds and the implementation phase usually takes a long period.

6.2.2. Issues in governance

The governance structure was analysed in detail for four case studies within this research, the one dedicated to the historical/cultural projects. Nevertheless, in this section all cases are analysed from the point of the view of "how they are managed and how the activities of organizations are coordinated" (Zan et al., 2015) (see Table 6.3).

Table 6.3. Governance structure: cross-case analysis.

	Former Florio plant	**Archaeological Mines Park of San Silvestro**	**Manifattura dei Marinati**	**OGR**	**Santa Marta Military Provisions Centre**	**Cazzola Woollen Mill**	**Ex Fratelli Bosio's Knitwear factory**
Governance	confused network of 4 public authorities	in house-providing society/ outsourcing	outsourcing	corporate	university	private	two equal private companies

The analysis of the various institutional settings brought to unification of the cases into several areas. The first one refers to three public projects dedicated to the preservation of industrial history of the abandoned sites. They are all owned and managed by the public authorities but with different institutional design and governance structure, which can be generally classified into three group: autonomous (or quasi-autonomous), semi-autonomous and completely not-autonomous.

The first sub-group (*quasi-autonomous*) is represented by the Archaeological Mines Park of San Silvestro. It is managed by the in-house providing society Val di Cornia Parks S.p.A., specifically established by five local authorities for the management of the Parks of the Val di Cornia system – a system of 2 archaeological parks, 4 natural parks and 4 museums. It is a best practice in the field of cultural heritage management in the form of a network in Italy (Cerquetti, 2012), one of the most innovative forms of cultural and environmental heritage management by the local authorities. The decision to form a unique company that manage the whole system of the parks had as an advantage - homogeneity of management and centralization of all crucial functions (e.g. management, administration, technical office, marketing office). Managerial autonomy was devolved from five public authorities to the specifically created "privately run, but publicly owned" commercial, profit-making company, which is still partly controlled by the board of directors (designated by the local authorities). That is why its governance structure can be denominated as quasi-autonomous. Thanks

to the creation of the "in-house providing" society, the public bodies were able to unify management services without burdening the staff of the municipal offices and decreasing the delays or problems usually caused by the bureaucratic procedures of public administrations (Amadei, 2011); outsource services to the third parties without formal completion of public tenders (Cerquetti, 2012). The ability to use the network not only as a tool of getting the access to the EU funding, as happens in many cases in Italy, but also and above all for the ordinary management, for unification of the human resources, guaranteed for all sites of the system qualified personnel that could not be always guaranteed for the individual institutions (Cerquetti, 2012).

The second sub-group (*semi-autonomous*) is represented by the *Manifattura dei Marinati* in Comacchio. The site is publicly owned (by the Municipality of Comacchio) and publicly governed (by the Regional Park of the Po Delta) under the concession agreement signed in 2013. Several years ago management of both museum and production activities was outsourced to a social cooperative of the type B "Work and Services". The concessionaire has to maintain the museum spaces opened to the public and maintain the traditional production. At the same time, the concessionaire had the possibility to launch its own production line. Paying the concession rate to the Regional Park of the Po Delta, the social cooperative has an autonomy in the site's government, but it has to follow quite strict rules regarding the traditional production (e.g. guaranteeing the minimum quantity of the traditional products, following the ancient production cycle and the pricing policy established by the Park). The "Work and services" cooperative at the same time had outsourced the museum activities to an external association. This is the case in which the public sector is involved by setting up the "rules of game" in order to preserve the tangible and intangible heritage, but without participating in covering the running costs.

The third sub-group (*completely not-autonomous*) is represented by the Former Florio plant in Favignana. The site is governed by a network of heterogeneous actors. The site is owned by the *Regione Siciliana* which is responsible also of the concept of publications, TV and radio shooting. The Superintendence for Cultural and Environmental Heritage of Trapani is in charge of the extraordinary maintenance of the site. The Regional center of Trapani and Marsala for cultural sites is in charge of enhancement and management of the site, organization of cultural activities. And the Municipality of Favignana is responsible for the museum activities and ordinary maintenance. All the actors have varying responsibilities, however there is a lack of clarity in the processes these actors need to follow. None of the actors has a manager responsible for the site which causes difficulties in communication and confusion in the responsibility roles. The difficulty of following the hierarchy of the actors and the misunderstanding of their competencies caused difficulties in implementation of everyday maintenance duties and even closure of several spaces of the museum. The initial

Masterplan foresaw the creation of the bar and bookshop inside the museum, but because of the bureaucratic difficulties it has been still impossible to realize it. This case is when bureaucracy, Italian legislation, "managerialization of local branches of the ministry by creation of Superintendences and later the Regional centres for cultural sites" (see e.g. Zan et al. (2007)) brought to the increased confusion in the management of the public heritage site.

The second area of the cases is characterized by the governance of the mixed reuse sites with some cultural use. It is represented by two quite different regeneration projects. The first one is the new OGR project. The site is managed by a joint stock consortium company specifically set up for this project. Some services (security, cleaning services, maintenance, exhibition personnel) are outsourced. But all main activities are managed internally. The company decisions are controlled by the board of directors that is formed by the representatives of three stakeholders. This is a classic example of the corporate governance where different projects (cultural and technological hubs) are managed by one organization.

The second case is the reuse project of the Ex Fratelli Bosio's Knitwear factory where two different companies have equal property rights on the half of the former industrial site and manage two completely different not-connected projects[44].

The third area is represented by the case studies which have one single use not connected to the preservation of the abandoned organization history. It is represented by two case studies. The Santa Marta Military Provisions Center recovered into university spaces is totally managed by the University of Verona. The public authority (Superintendence of Verona) was involved only at the phase of the project realization by supervising the preservation of the external and internal architectural aspect of the site. The second site is the Cazzola Woollen Mill reconverted into the real estate. It is managed by the private construction company. The local authority was also involved only at the initial phase by requesting some public spaces and organization of the small exhibition. For the research questions of this project the governance of such sites is not relevant as their management would not have changed if they were located in another spaces.

6.2.3. Understanding the financial business models

The financial business models were analysed in detail for four case studies within this research, the one dedicated to the historical/cultural projects. Nevertheless, a synopsis of the various aspects of the business models (when possible) is provided in the Table 6.4.

[44] Unfortunately, because of the Covid-19 emergency the field visit to the site was impossible. For the same reason it was impossible to collect the detailed data on the current management of the site.

In search of the financial sustainability - a major issue for the heritage processes (see e.g. Baraldi & Salone (2020), Zan et al. (2015)), the heritage projects (in particular public projects) face the problem of income gap.

Considering the huge dimensions of former industrial sites and the complexity of their maintenance, the revenues from the museum/cultural activities, concession rates and the revenues from organization of various temporary events usually do not cover the costs. In three museums of industrial heritage in this analysis, the income gap is covered in different ways.

Table 6.4. Business model: cross-case analysis.

	Former Florio plant	**Archaeological Mines Park of San Silvestro**	**Manifattura dei Marinati**	**OGR**	**Santa Marta Military Provisions Centre**	**Cazzola Woollen Mill**	**Ex Fratelli Bosio's Knitwear factory**
Intended BM vs realized	not completely realized; closed parts	almost not changed	evolved in several steps	not changed	not changed	evolving	evolving
Information disclosure	all documents are available on request	no access to documents	all documents are available on request	some documents are publicly available (website of the Chamber of Commerce)	not relevant	not relevant; difficulties because of the Covid-19	difficulties because of the Covid-19
Earned income	ticketing, private events	ticketing, merchandising, concessions	product sale, ticketing, events	concessions, events, ticketing	high-education	apartment sale	product sale and restaurant revenues, membership fees
Income gap	Municipality city tax	cross-subsidizing, local authorities investment	self-financed	shareholders' investment	not relevant	not relevant	(probably?) self-financed
Financial autonomy	no	partial	yes	partial	not relevant	not relevant	(probably?) yes
Control over human resources	no	yes	yes	yes	not relevant	not relevant	yes

The first one is the Former Florio plant. Its current management can be described as a worse practice of a 'classic' museum management. A long process of the reuse project research and implementation, a huge investment, an impressive musealization of organizational history were followed by a 'mess' in the current business model. The confused governance network of the site causes problems on different levels. The management of the museum/cultural activities was

outsourced to the Municipality of Favignana, which does not have appropriate staff for the museum management. The site does not have a manager, but it is supervised contemporary by the various departments of the local authority. Favignana is a small town which does not have enough resources to maintain such type of project. Given the fact that management of the museum is not unified, museum has no budget, the expenses are not planned and the financial information is not centralized. it was impossible to access to the financial information (besides the museum revenues that are published by the *Regione Siciliana*). The Municipality of Favignana has no autonomy over resource management. Firstly, it does not have any control over human resources as described before. Secondly, it has no control over financial resources as all the revenues from ticketing had to be transferred to the *Regione Siciliana*, that in turn had to transfer back 90%. The latter had never happened. The confusion in the governance structure and the bureaucratic difficulties caused the changes between the intended financial business model and realized one: the bookshop and the bar, the facilities that could bring an additional revenue, have never been realized. At the end till now, the local authority was able to pay the income gap (or at least to maintain some expenses) with the help of the funds from the municipality city tax (from the interview with the former mayor of Favignana).

The second site fully dedicated to the preservation of the industrial heritage is the Archaeological Mines Park of San Silvestro. It is included into the network of various archaeological and natural parks and several museums, which is managed by the Val di Cornia Parks S.p.A., a regulatory body established by the local municipalities. The decision to create three unique regulatory body responsible of the parks system has permitted to centralize revenues and expenses. The Archaeological Mines Park of San Silvestro has the highest costs within the whole parks system, because of the high cost of its maintenance, but its costs are balanced not only by its own revenues but also by the revenues of other parks. If the whole system has an income gap, its payment is shared among the municipalities in proportion of the permanent residents' number (Convenzione, 2002).

The third museum of industrial history - the *Manifatura dei Marinati* in Comacchio, besides the revenues from the ticketing, organization of private events and merchandising, executes the production of the traditional and new products. The revenues from the museum activities and the revenues from the production of the traditional products are not able to cover the costs. When the site was managed by the Regional Park of the Po Delta (at that time there was just a limited production of the traditional products), the income gap was covered by the public funds. When the museum and production activities were externalized, the solution for covering the income gap was found in the launch of the new products. It is also a type of cross-subsidizing.

The mixed regeneration projects which value proposition is focused on different types of customer segments in order to be financially sustainable are concentrated on the diversifying their

business portfolio. The new project of the *Officine Grandi Riparazioni* is fruit of a venture philanthropy project of the CRT Foundation. It concerns both the investment in the initial project and the covering of the current income gap. The revenues come from the concessions of the spaces for the private events, organization of the concerts, exhibitions, various educational projects and the concessions of the spaces to the companies within the technological hub. The last activity seems to be the only one that is able to cover its own costs. The project receives annual donations from the main shareholder for the organization of cultural activities. Other part of the income gap is covered through the constant increase of the share capital by three stakeholders. Another mixed reuse project, the Ex Fratelli Bosio's Knitwear factory, is managed by two private companies that have evolved their business models in time.

6.3. Issues in organizational history musealization

One research question of the current project is how the organizational history of the abandoned organizations can be conserved and narrated within their physical structures. The research did not take into account the detail analysis of the organizational history of each site (which would presume an in-depth archival research for each case study). But instead the analysis of the state of the art was executed with the focus on musealization and narration of tangible and intangible heritage ("what and how is narrated within the physical structures"). Considering the lack of the pre-existing literature on the topic, this part of the analysis has been quite descriptive but still at this stage some preliminary findings can be noted.

The analysis of the discourses on industrial heritage in the chapter 2, three main dimensions that stands behind the motivation for conserving former industrial sites were identified. These dimensions are: architectural dimension, importance of economic development of the area and importance of working conditions and practices.

The first dimension, preservation of the *architectural aspect*, is the primary aspect which is being conserved within the new reuse projects. Looking through the objectives of the reuse projects, it can be noticed that "the recovery of the architectural features of the structures, adapting them to the new uses" is present in all projects. The conservation of the architectural aspect depends on the following factors: the length of the abandonment period, the state of architectural conservation and in the majority of the cases on the legal restrictions imposed by the public authorities (e.g. Superintendence, regional and local administrations).

The analysed case studies can be divided into three groups according to the preservation of the architectural aspect.

The first one is represented by three public projects dedicated to the historical preservation of abandoned organization (Former Florio plant in Favignana, Archaeological Mines Park of San Silvestro and *Manifattura dei Marinati*). In these projects the attention was given not only to the preservation and musealization of the intangible heritage but also to an accurate preservation of all architectural aspects (both external and internal) of the various structures.

The second group is represented by two projects (one public and one private) where the main reuse strategy is not connected with the historical preservation but one of the secondary uses is dedicated to a small exhibition on the industrial history. These are the reuse project of the Santa Marta Military Provisions Center and the *Officine Grandi Riparazioni.* The recovery projects of these sites were based on the conservation of the architectural aspects of the space adapting them to the new uses, with more attention to the adaptation to the new uses in respect to the first group. Anyhow, the spirit of the abandoned site was preserved. It has to be noticed that the initial investment for the restoration procedures in the both projects was high and in both projects the local Superintendence was supervising all the modifications.

The third is represented by two private projects (Cazzola Woollen Mill and Ex Fratelli Bosio's knitwear factory). The only aspect preserved in the new projects is the external architectural aspect. In the first project it was the condition of the local authority requested through the private urban implementation plan. In the second project even if the local authority did not impose the official legal restriction on the preservation of the façade, the location of the site in the heart of the historical centre of the town implicitly "imposed" the owners to preserve the external architectural aspect of the site.

The preservation and musealization of the second dimension that stands behind the motivation for conserving the former industrial site, *the history of economic development*, is the most frequent part of the industrial history which is preserved within the new reuse projects. The descriptive panels, video, interviews talk about the how the industrial site is important for the economic development of the area and its impact on the territory.

The difficulties appear when it comes to the third dimension - musealization of the *organizational history* of the sites. In the majority of the cases there is no literature published on the industrial sites' organizational practices, governance, know-how of the workers and even less on the management and accounting systems of the abandoned organizations. There is a need of the study of the organizational history and the ways of its narration at the stage of the projects' preparation.

In order to understand the ways through which the organizational history has been musealized and narrated, firstly, each former industrial site was analysed looking through the spatial dimension of the reuse projects (change of the space destinations and architectural conservation). Furthermore, the narration and musealization of the organizational history was investigated through the level of

content (what part of the organizational history is preserved) and the level of expression (how it is narrated).

The results of this analysis is structured in the Table 6.5.

Table 6.5. Musealization of organizational history: three level analysis.

	Spatial dimension	**Level of content**	**Level of expression**
Former Florio plant	distributed	all-encompassing	oral
Archaeological Mines Park of San Silvestro	distributed	selected	audiovisual
Manifattura dei Marinati	distributed	vintaging	all senses
Officine Grandi Riparazioni	disconnected	sketching	multimedia
Santa Marta Military Provisions Centre	scattered	sketching	graphical
Cazzola Woollen Mill	disconnected	selected	artifacts
Ex Fratelli Bosio's Knitwear factory	nothing	nothing	nothing

6.3.1. Musealization of organizational history: spatial dimension

The analysis of the spatial level of the case studies showed that musealization of the organizational history can be 'distributed', 'scattered' and 'disconnected'.

The first type is represented by the museums of industrial heritage (Former Florio plant, Archaeological Mines Park of San Silvestro, *Manifattura dei Marinati*). In these reuse projects the musealization is distributed around the whole site following some logical path.

The second type is represented by the Santa Marta Military Provisions Centre. The new project of the new university site was enriched with the exhibition on the history of the abandoned organization. Besides two spaces where the main part of the exhibition is located, ancient equipment and other references are scattered (in a random way, without any logical path) around the whole site.

The third type is represented by two reuse projects: *Officine Grandi Riparazioni* in Turin and the Cazzola Woollen Mill in Schio. Two projects have very different nature, one is visitors-oriented

cultural site and another one is a classic example of the real estate. The issue that they have in common is the creation of the small exhibition dedicated to the history of the closed organization (100 sq. m. out of 20.000 sq. m. in the OGR*;* 350 sq. m. out of 10.000 sq. m. in Schio). These exhibitions are located in one space of the restored sites and all other spaces have no reference to the history, besides of the architectural aspect. Musealization is somehow separated from the whole project.

6.3.2. Musealization of organizational history: level of content

In order to understand what part of organizational history is narrated within the new reuse projects, various texts (videos, audios, descriptive panels) present within the regenerated sites were studied. This analysis was implemented in order to identify if any topics concerning how the organization was working, what the organizational practices were, how the management and accounting system was structured, the issue on the organizational structure, governance and the know-how of the workers were touched within the musealization projects.

Certainly, this part of the analysis needs a further investigation of the archives, ancient documents of the closed organizations in order to understand what actually had to be narrated. Many closed organizations concerned in this research do not have any archive. Moreover, there is a lack of the literature on the sites' history.

The analysis showed that the musealization of organizational history on the 'level of content' can be of two types: 'all-encompassing' and 'selected'.

All-encompassing musealization is when the organizational history of the closed organization is narrated from different angles through all historical periods of the existence of the organization (e.g. Former Florio plant in Favignana). This type of musealization is represented also by 'sketching' musealization (Santa Marta Military Provisions Center and *Officine Grandi Riparazioni*). In these cases, even if the history is narrated from different angles but it is done in a rather sketchy way. The particularity of this exhibition is the fact that it was created by the professor of the economic history and not by the specialists as in other cases.

Selected musealization is when just one part of the organizational history is touched upon the reuse project (not all aspects or not all historical periods are described). For instance, in the Archaeological Mines Park of San Silvestro a lot of attention is paid to the history of the closed organization and different working practices of the last historical period of the mine (from 1950s till the mine's closure) and to the period when the Rocca San Silvestro was functioning (around X-XIV centuries), but other periods have been touched upon superficially. The organizational history has been narrated partially with an aim, even if probably unintentional, of selecting which part of the

history to remember and which – to forget. This choice of narration is risky as it causes manipulation of closed organization's identity. A similar story happened in the project of the *Manifattura dei Marinati* in Comacchio. A lot of attention is paid to the explanation of the ancient production cycle with no reference to the industrial production (which replaced the ancient method in the middle of the XX century). This is again the way of selecting (in this case 'vintaging') the history is desired to present and the one is preferred to forget – in this case the eel industrial production for the whole second half of the XX century. It is a way of choosing the best version of your business in order to create or maintain a certain organizational identity, as is frequent in the case of corporate museums.

Another important issue is the fact that the organizational history can be narrated from the bottom (e.g. video installation in the Former Florio plant in Favignana, where the history of organization has been narrated by the former workers) and from the top (e.g. from the institutional level). This issue needs a further investigation.

6.3.3. Musealization of organizational history: level of expression

The organizational history of the former industrial sites can be narrated through the various forms. The most frequent forms of expressions are the audiovisual (e.g. audios, videos), the images (e.g. photos), the graphics (e.g. maps) and the texts (e.g. ancient documents, descriptive panels). These forms are present in the majority of the case studies in various combinations.

An 'innovative' form of expression is multimedia (various installations with a use of technology). It is present in the reuse project of the *Officine Grandi Riparazioni* in Turin with 2 projects: augmented reality and 3D tour.

The forms of expression that appeared to be the most efficient are the ones that are directed at the involvement of the viewer.

The first example is the video installation "Torino" in the reuse project of the Former Florio plant in Favignana. The stories told by the former workers are projected on 18 large-format holographic screens equipped with audio speakers. It is possible to clearly hear each audio only in the proximity with the screen. When you enter in the huge open space, you hear all the video installations in the background. It recalls the past use of the space (perception of noise, space full of people, voices). The room is completely dark, with no illumination. It helps to engage the viewer in the process. The former workers' monologues are in Italian language and in Sicilian dialect with no translation. This is a form of engagement, the viewer become a part of the community. All the details are important, the dresses, the gazes, the pauses. The worker looks straight on the viewer, by this establishing a

dialogue. There is no route, the viewer chooses by himself how much time to spend in front of each video, the order to follow.

The second example is combination of the museum and production activities in the reuse project of the *Manifattura dei Marinati* in Comacchio. The production activities are run in the same space with the museum exhibition so the visitor is able to view the whole process, to smell, to hear. It is a kind of multisensory form of expression which is directed also on the engagement of the viewer.

6.4. Final considerations

After the comparison of the case studies from different perspectives, this part seeks to provide some final considerations.

At first, the cross-case analysis from three different perspectives brought to the classification of all regeneration strategies in three main groups (see Table 6.6).

Table 6.6. Classification of regeneration strategies.

	single reuse (organizational history)	**multi-reuse (partial historical preservation)**	**single-reuse ("residual" historical preservation)**
reuse	Former Florio plant Archaeological Mines Park Manifattura dei Marinati	Officine Grandi Riparazioni Ex Fratelli Bosio's Knitwear factory	Santa Marta Military Provisions Centre Cazzola Woollen Mill
musealization of tangible heritage	accurate preservation	external - yes internal (if there is a restriction)	external - yes internal (if there is a restriction)
musealization of intangible heritage	distributed all-encompassing/selected	disconnected/scattered all-encompassing/selected	disconnected/scattered all-encompassing/selected
governance	presence of public sector (intervening on various levels)	private mixed governance of (cultural) reuses	not relevant
business model	income gap	company's business portfolio	not relevant

The first strategy refers to the sites completely dedicated to the preservation of the history of the abandoned organizations. The public control in such cases from this research was present both on the phase of the preparation and implementation of the project and within the current coordination of the projects. The preservation of the tangible assets (both external and internal architectural aspects) of

the former industrial site is rigorous. The musealization of intangible heritage is distributed around the whole site but, nevertheless, not in all projects the history is narrated from all perspectives. The main issue of such public cultural/historic projects consists in covering income gap.

The second strategy concerns mixed regeneration. These are privately managed projects (on both implementation and current coordination phases) dedicated to cultural regeneration. The cultural activities are integrated in the regeneration strategy along with another projects (e.g. social, commercial) and the business model of such projects is evolving by introducing new activities. The main attention in the preservation process is given to the conservation of the external architectural aspects. The internal structures are maintained as in the past usually if there is some legal restriction imposed by the public authority. The intangible heritage of the abandoned organization is, if preserved, spatially disconnected from the main activities.

The third strategy refers to the projects which reuse does not concern any kind of cultural regeneration. These are normally large-scale projects which are directed to a single-use regeneration where the former industrial site is perceived as a physical 'container'. The external and (not always) internal architectural aspects are preserved thanks to the legal restriction imposed by the public authorities.

Several issues pervade all regeneration processes.

The first is a permanent *conflict between preservation and change*. On one hand, the former industrial sites represent heritage that has to be preserved (ICOMOS - TICCIH, 2011). On the other hand, these are spaces that changing their values, become relevant for various urban planning strategies that aim at the sustainability of territorial development (e.g. Franz et al. (2006)). In reality, it happens that often these two perspectives on industrial heritage do not intertwine with each other. The projects mainly dedicated to the preservation of industrial heritage (in an all-encompassing sense) do not look beyond the preservation. Considering the high investment both in the restoration project and the operating expenses in the maintenance of the large-scale sites, without introducing any additional activities, the future of these projects is doubtful. And the projects dedicated to the cultural-led regeneration and even more real estate projects do not bother about the preservation issues. The only case from this research that combines conservation and 'innovation' is the *Manifattura dei Marinati* in Comacchio where the combination of the approaches of industrial heritage preservation and innovation introduced with the production of the new projects bring the whole project to the financial sustainability.

The second point that is embedded in all regeneration strategies is the issue of *materiality*, already underlined in the pre-existing literature (e.g. Lusiani & Panozzo (2017)). Often it seems that the heritage value attributed to the former industrial sites, is assimilated to their material value. Even in

the cases when the legal restriction on the protection was introduced by the public authority, this public supervision almost always is directed on the preservation of the tangible assets of the sites.

The third point of a majority of the projects is the issue of *selectivity.* Even if the intangible heritage is preserved in some way, its musealization does not encompass all aspects of the history of the abandoned organization. This recalls the "politics of remembering" (what has to be exhibited) and "politics of forgetting" (what is not exhibited) (Nissley & Casey, 2002) used in the corporate museums. And it causes manipulation of closed organization's identity. This concerns not only restricting the narration of the industrial history to some historical periods but also not considering all the spheres of the intangible industrial heritage. Schaal (2015) recognize that "only a few museums are actively seeking exchange with academic social, economic, corporate, and technical history; with active entrepreneurs, or other actors in the economy, regarding industrial heritage". This point goes in accordance with another important issue, often lacking in the regeneration strategies, the need of *interdisciplinarity* at different levels.

7. Conclusion

This research started from the acknowledgement of the importance of the emergent phenomenon of the industrial heritage reuse. The literature analysis showed that there has been a surge of attention to the regeneration of industrial sites in the last decades. However, it seems that the aspect that remains underestimated within the literature is the preservation of the intangible heritage (and in particular the organizational history of abandoned organizations) within the new reuse projects.

Starting from the idea to understand how the organizational history of the abandoned organizations can be narrated, at first, it was important to understand the variety of the reuse strategies. The research inquiry began from the analysis of the articles published in the Italian Journal on Industrial Heritage "*Patrimonio industriale*" established by the Italian Association for Industrial Archaeological Heritage. Based on the analysis of all articles published between 2007 and 2018, a database of 88 articles focused on single or multiple case studies was constructed. The analysis of the database developed in two directions.

Firstly, a unique classification of eight reuse strategies that could be implemented to regenerate former industrial sites was created (Musealizing; Musealizing into a park; Transforming into a cultural hub; Public oriented services; Real estate; Launching new production; Maintaining the initial use; Eliminating history).

Secondly, another aim of this part was to analyse the discourses that stands behind the motivation for conserving the former industrial sites and identified the main ones: importance of the architectural dimension, importance of the site for the economic development of the industry of the area, importance of the working conditions and practices. As mentioned before, it seems that the aspect of the organizational history preservation is underestimated in the literature. This analysis gives confirmation to it. The third motivation turned out to be the less discussed in the analysed articles.

The exploratory research proceeded with the analysis of eight Italian case studies, one for each type of the regeneration strategy. Probably, the methodology applied for the case study selection through the construction of the case typologies from the specialized journal can be applied to other researches focused on a specific phenomenon.

Firstly, case studies were analysed as stand-alone entities (chapter 5). Each case study was explored through a proposed methodology based on the analysis of the historical background of the former industrial site, the evolution of its reuse project, the issues connected to the current management and the musealization techniques used in the preservation and narration of tangible and intangible heritage.

Secondly, the research proceeded with the cross-case analysis through different perspectives.

This research confirms application of the framework of Zan (2019) (based on the case study of the Venice Arsenal) to the study of industrial heritage from organizational-managerial perspective. In fact, in the chapter 6 the results of this research are highlighted on three levels which underline the importance of the organizational perspective analysis in all phases of the preparation of regeneration projects of former industrial sites. Firstly, the competencies of organizational scholars are crucial in analysis of organizational history of former industrial sites and understanding the ways this history can be narrated (6.3). Secondly, the organizational perspective is crucial at the phase of preparation of the new projects (6.1) and its feasibility and sustainability analysis (6.26.2).

This research helps to establish the dialogue between professional and management literature. Industrial heritage studies are a field for interdisciplinary approach. The role of organizational scholars does not consist in intervening into professional jurisdictions but rather adding the organizational-managerial perspective to the emergent issues in the field. There is a strong need in the in-depth studies that integrate the organizational perspective into the industrial heritage studies. Even more the studies that link the professional discourses and the managerial perspective.

This research can contribute to the literature on organizational history and in general on evolution of the issue of historiography in organizational studies. The majority of the previous research focuses on still functioning organizations (Casey & Olivera, 2011; Kroezen & Heugens, 2012; Ravasi & Schultz, 2006; Rowlinson & Hassard, 1993; Schultz & Hernes, 2013; Stigliani & Ravasi, 2007) and studies how organizational actors use history in the process of organizational identity construction. There is a stream in the literature that connects preservation of the organizational history with the physical structures of the organizations. These are studies on corporate museums where again one of the main aims is to preserve and construct the organizational identity of the functioning organization (Danilov, 1992; Duncan, 1994; Nissley & Casey, 2002). The corporate museums follows two logics: 'politics of remembering' (how organizations choose what is exhibited in the corporate museum) and 'politics of forgetting' (how organizations choose what is not exhibited in the corporate museum) (Nissley & Casey, 2002). The narration of organizational history of former industrial organizations differs from the mentioned studies because the issue is not to construct the identity of organization by 'selecting' the part of the history to preserve, but rather how to preserve and narrate the 'identity' of the closed organization within and through the 'identity' of the new organization.

Another possible contribution of this research is the analysis of the organizational history narration through a spatial dimension, level of content and level of expression. As standing alone entities these dimensions are not completely new for the organizational studies. Spaces have been considered as setting for organizational acts and storytellers that communicate values, beliefs and

feelings using vocabularities of construction materials and design elements (Polanyi, 1966; Yanow, 1995, 1998). Organizational and management science had also paid attention to the issue of visuality (Becker, 1995; Kunter & Bell, 2006; Meyer, 1991; Meyer et al., 2013; Preston et al., 1996), as another tool that contemporary organizations use to complete, communicate and form identity (Boxenbaum et al., 2018). One study on organizational memory (Schultz & Hernes, 2013) used a three level framework "textual, material and oral memory forms as the means by which organizational actors evoke the past". The framework was introduced in this research was born from another perspective. It seems more appropriate to separate level of content (what is communicated) and the level of expression (how it is communicated). The level of expression includes therefore also e.g. visual dimension, oral form of communication. The level of content includes at the same time not just the written text, but narration/communication in all the forms.

As for the research limitations, several observations have to be made. The in-depth field research into processes is extremely valuable for this kind of research in order to understand the emerging phenomena, as well as the longitudinal research that helps to understand what happened with the site after its abandonment, but even more to understand the historical background of the former industrial organization and what has to be narrated within the musealization project. Nevertheless, this research focused on the analysis of industrial heritage literature in Italy and then on the analysis of the Italian case studies. There is a need for a more international perspective in the future research.

The analysis of the organizational history narration within the new reuse projects was focused not on the studying the organizational history of a concrete case study in a detail but rather on the creating of a framework based on three concepts (spatial dimension, level of content and level on expression) which can be used in the analysis of the preservation and narration of the organizational history of the abandoned organizations. Therefore, the further research can be directed on organizational history narration for the single cases. Moreover, there is a need for the analysis of organizational history narration on the level of enunciation, what means understanding who narrates the organizational history and what effects can have each enunciator (e.g. former workers narrating their experience, organization as an enunciator).

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Appendix 1. List of the issues of the AIPAI magazine (2007-2017)

	N. - year	Issue title
1	0-2007	1997-2007. 10 years of AIPAI
2	1-2007	A Manifesto for AIPAI
3	2-2008	Transmitting Industrial Heritage
4	3-2008	1978-2008. Industrial archaeology in Italy; The colonies for children in the fascist Italy
5	4-2009	Industry, memory, heritage. For an archaeology of reuse
6	5-2010	Economics and architecture of the sea. Shipyards, arsenals and ports in 19th-20th century Italy
7	6-2011	City, industry and environment
8	7-2011	For an "Observatory" of the project on industrial heritage
9	8-2011	Unitary State intervention in Italian economy
10	9/10-2012	Loisir, workfare and social status. The colonies for children in twentieth-century Italy
11	11-2013	A community of studies and interests. The ten years of the Master in Conservation, Management and Enhancement of Industrial Heritage (MPI)
12	12/13-2013/2014	Industry, architecture and literature in twentieth-century Italy
13	14-2014	Cement plants in Italy
14	15/16-2015/2016	Industrial commissioning and architecture. Archives for a history of company towns
15	17/18-2017	The mining industrial heritage and its values
16	19/20-2018	The industrial heritage of the automobile and transport: memory, transformation and tourism

Appendix 2. List of the articles selected for the database construction[45]

	N. - year	Author	Article title
1	19/20-2018	Marco Fazio, Benedetto Camerana and Rossella Maspoli	FCA - Fiat Chrysler Automobiles Motor heritage, automotive brand and corporate identity. Study cases Arese and Mirafiori
2	19/20-2018	Edoardo Currà and Laura Severi	Giorgio Calza Bini and the service station of the trunk-road Genova-Valle del Po
3	19/20-2018	Michele Morganti	Recognize the modern in the production facilities: the Fiumicino power plant by Riccardo Morandi
4	19/20-2018	Massimo Bottini	Ferruccio Lamborghini Museum. From tractors to cars, all the innovative engineering and design inventions of Ferruccio Lamborghini
5	19/20-2018	Maria Carcasio	Itineraries of industrial archeology in Sicily: the ancient furnaces Maiorana in Palermo
6	19/20-2018	Tiziana Fulligna	Albani Mill in Fano risks demolition
7	17/18-2017	Edoardo Currà, Alessandro D'Amico, Martina Russo and Laura Severi	The cement factory of Civitavecchia from Anonima Casale company to Italcementi. Studies for the restoration and the reuse
8	17/18-2017	Sara De Maestri and Emery Vajda	The mines of Val Graveglia. From manganese mine to a mining museum
9	17/18-2017	Alessandra Casini, Daniele Rappuoli and Carlo Evangelisti	Mining parks in Tuscany and Marches. Analysis and reflections through three case studies
10	17/18-2017	Rosella Del Prete	The mining landscape of the Campania inland: from the historical research to the education proposal of a regional park
11	15/16-2015/2016	Giovanni Bellucci	Chiaravalle and the Tobacco Factory
12	15/16-2015/2016	Antonio Monte	Maglio Museum in Maglie. A family "story" between tradition and innovation
13	15/16-2015/2016	Raffaele Antonio Caltabiano	The Amideria Chiozza in Perteole: an industrial heritage among the agricultural lands of the Bassa Friulana
14	14-2014	Massimo Bottini	Buzzi cement plant Unicem di Sant'Arcangelo in Romagna. Programme of reuse process participation
15	14-2014	Giuseppe Guanci	The Marchino factory and other cement plants of the Calvana Mountains in Prato
16	14-2014	Francesca Castanò	The coast, the cement plant, the hotel. Pozzano, a reconversion history
17	14-2014	Renato Covino and Marco Venanzi	Spoleto cement plant: from integrative production to market projection
18	14-2014	Claudia Marun Mascarenhas Martins	Marchino at Castellavazzo cement plant: a didactic experience of the Master in Conservation, management and enhancement of industrial heritage
19	14-2014	Annamaria di Gregorio	La Viscosa: the case of Snia in Rieti
20	14-2014	Tiziano Arrigoni, Barbara Catalani and Marco Del Francia.	Magma. New iron and cast iron museum in Follonica
21	14-2014	Antonio Monte	The Giovanni Mucci candy museum at Andria
22	14-2014	Sara De Maestri, Roberto Albano and Luca Dal Pozzolo	Nova - New Vaccari art factory. From the production of ceramic to a cultural hub
23	12/13-2013/2014	Alberto Manzini	Industrial architecture in the Bormida valley: SIPE and the architect Cesare Mazzocchi
24	12/13-2013/2014	Manuel Ramello	The ex Diatto and ex SNIA Meccanica plant in Turin

[45] Some titles are translated from Italian.

(continued)

	N. - year	Author	Article title
25	12/13-2013/2014	Claudia Bottini	An exceptional film set in the seventies: the Segrè Paper Mill in the Sanctuary of Hercules Victor in Tivoli
26	12/13-2013/2014	Francesca Santarella	The ex SIR paraboloid at the Ravenna City Dock
27	12/13-2013/2014	Barbara Galli	The former Falck area in Sesto San Giovanni: from city of the factory to factory of ideas
28	12/13-2013/2014	Luigi Oliva and Andrea Sarno	An itinerary between nature, heritage and project. The recovery of the Madonna della Luce area in Tonadico (Trento)
29	12/13-2013/2014	Alessandra Salciccia and Sara Susi	From industrial memory to the botanical research center: the integrated conservation of the former Avezzano Sugar Factory
30	12/13-2013/2014	Franco Mancuso	AIPAI in Monfalcone. The museum center of construction sites and the city
31	11-2013	Aldo Castellano	Thinking of the future of the ex Burgo Paper Mill in Mantua by Pier Luigi Nervi: words in freedom
32	11-2013	Annalisa Carta, Luisa Viardi, Ivan Dal Toè, Elena Fiordaligi, Jacopo Ibello, Raffaella Maddaluno, Maria Concetta Perfetto, Hanna Van Renterghem, Francesco Zuccaccia	Proposals for the enhancement of industrial heritage in Val Bisenzio: the case of the Isola in Vaiano
33	9/10-2012	Barbara Galli	Gondar. The heliotherapy clinic at Legnano
34	9/10-2012	Roberto Giulianelli and Lorenzo Goffi	Seaside holiday camps in the fascist period. The account of "Pincipe di Piemonte" in Senigallia: the origins, present use and the reuse project
35	9/10-2012	Anna Clarizio and Tatiana Lis Fernandez	The seaside holiday camp "Principe di Piemonte" at Porto San Giorgio. Origins, current state and re-use project
36	9/10-2012	Danilo Craveia and Donatella Basla	Philanthropy on the Biella Alps. The alpine holiday camp of "Monte Rubello"
37	9/10-2012	Antonio Tedesco	The San Giovanni Rotondo bauxite mine
38	9/10-2012	Raffaella Maddaluno and Antonio Monte	Preservation and enhancement of the industrial heritage of the wineries in Puglia: the factories, the machinery, the processes
39	9/10-2012	Virginia Di Vito	The former Florindo Martino woolen mill in Sepino: the heritage to be preserved and an opportunity for local development
40	9/10-2012	Erika Bossum	For a conscious and consistent reuse of industrial buildings: the case of the specialized refrigeration station in Verona
41	9/10-2012	Sara De Maestri	The holiday camps of Camillo Nardi Greco in Liguria
42	8-2011	Foscara Porchia	Porto Marghera between public and private
43	8-2011	Antonio Monte	The Puglie Aqueduct: an industrial patrimony to be exploited
44	8-2011	Rossella Del Prete	The mining landscape of the Campania internal areas: the mines of Sannio and Irpinia
45	8-2011	Massimo Preite	The Florence Tobacco Factory: endangered heritage
46	8-2011	Michela Barosio	Turin, The OGR Officine Grandi Riparazioni
47	8-2011	Lida Kitsaki	From an industrial memory to a concrete presence: the case of the Paraboloide of the former Italcementi in Casale Monferrato
48	7-2011	Manuel Vaquero Pineiro	The grain silos in Italy in the thirties: between architecture and economic autarchy
49	7-2011	Luca Mocarelli	The Milanese abandoned areas or the cancellation of industrial heritage: the Bicocca case
50	7-2011	Gustavo Ambrosini	Turin. Identity and reuse of industrial heritage. The recovery of the former vermouth plant as a Eataly food and wine center

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	N. - year	Author	Article title
51	7-2011	Salvatore Di Vita	The Floristella-Grottacalda Mining Park
52	7-2011	Manuel Ramello	The competition of ideas for the rehabilitation and development of the mining site of Balangero and Corio (Turin) - Interview with Enrico Bertoletti
53	7-2011	Giacomo Leone	The citadel of the sulfur of Catania. Recovery and reconversion of the former fainters (1984-2000). Projects by the architect Giacomo Leone Uberti
54	6-2011	Claudio Menichelli	The recovery of the archaeological-industrial heritage of the Venice Arsenal. The activity of the Superintendency
55	6-2011	Augusto Vitale	Restoration and integration of an ancient "Catalan" ironworks in Southern Italy
56	6-2011	Pier Paolo Poggio	Brescia, the MusIL Foundation
57	6-2011	Claudia Bottini	The MIG Italian Museum of Cast Iron
58	5-2010	Sara De Maestri	Arsenal, port, city. The case of La Spezia
59	5-2010	Pasquale Ventrice	The Arsenal of Venice and the formation of the city and the industrial port
60	5-2010	Giulio Mellinato	When appearance is not deceptive. The construction site-laboratory of Monfalcone and the Italian Navalmeccanica (1958-1971)
61	5-2010	Roberto Giulianelli	An unconsummated marriage. The shipyard and the port of Ancona in the twentieth century
62	5-2010	Carmelina Anna Amico and Claudio Cordella	The hemp mill of Crocetta del Montello
63	5-2010	Claudia Bottini and Chiara Berichillo	The Piegaro Glass Museum
64	5-2010	Francesca Castanò	Un jardin y un arsenal. The port and construction site of Castellammare di Stabia in the Kingdom of Naples
65	5-2010	Renato Covino and Antonio Monte	The maritime military arsenals of Taranto and Brindisi and the Franco Tosi shipyard
66	5-2010	Angelo Nesti	The port of Livorno and the Orlando shipyard. Notes on the evolution and mutual relations from the Unification to the Second World War
67	5-2010	Antonio David Forte	The light regulator of the Rome Opera House. History of art, technique and autarky
68	4-2009	Massimo Preite	Piombino's blast furnace: a model of intangible capitalization
69	4-2009	Domenico Cirella	Bayard station recovery. Towards a multimedia museum of road communications in the first railway station of Italy (Naples-Portici 1839)
70	4-2009	Claudia Bottini	The monumental complex of Acquoria and the Archeological Museum in the Tivoli power plant
71	4-2009	Manuel Ramello	Destinations. The Merz Foundation in Turin
72	4-2009	Barbara Nucci	The former Rieti Sugar Factory: restoration and functional recovery
73	4-2009	Augusto Ciufetti	Welfare policies and workers' villages. The SNIA and Torviscosa in Italy in the thirties
74	3-2008		Call for the safeguard of the ENEL Colony of Riccione by Giancarlo De Carlo
75	2-2008	Daniela Mazzotta	The Stucky Mill, from symbol of industrial archeology to icon of Venetian luxury hospitality
76	2-2008	Angelo Nesti	Piombino's blast furnace afo1, Which should be the role of our association?

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	N. - year	Author	Article title
77	2-2008	Maurizia Baranello	The furnace and the city. Historical notes on the S.I.A.I. of Petacciato Scalo
78	2-2008	Nadia Primiani	Disposal and recovery of urban industrial areas. The case of the Furnace of Termoli
79	2-2008	Antonio Monte	The Sofisticazione Sali Warehouse In Margherita di Savoia (Foggia)
80	2-2008	Antonio Monte	The bauxite mine in San Giovanni Rotondo (Foggia)
81	2-2008	Antonio Monte	The Scoppetta mill in Pulsano (Taranto)
82	2-2008	Guido Rosato	The "Langer Heinrich" floating crane and the protection activity of the Superintendency for Historical, Artistic and Ethno-anthropological Heritage of Liguria
83	1-2007	Manuel Ramello	Protection and promotion: the Mirafiori case
84	1-2007	Augusto Vitale	Factory Museum in the City of Science in Coroglio. Set up by Augusto Vitale
85	1-2007	Antonio Monte	From the industrial monument to the ecomuseum. The Filardi spinning mill of Civita (CS)
86	1-2007	Angelo Nesti	The Piombino blast furnace and the Nervi Silos in San Vincenzo
87	1-2007	Manuel Ramello	News: the children of the workshop, former factories, between transformation and conservation (from "Città Agorà", magazine of the municipal council of Turin, November 2007)
88	1-2007	Virginia di Vito	The wool mill, flour mill and pasta factory in Frosolone (IS): a little known story to remember and enhance

Appendix 3. Interview protocol

Reuse project

- Project team and timing
  - What was your role in the regeneration project?
  - How was identified and formalized the work team? What roles were involved? Who was responsible for coordination and direction?
  - Was the team involved in the realization of the reuse project concept internal or external? If there were some external experts, who were they? And what was the motivation of their involvement?

- Funding
  - What funding were used for the acquisition of the property and for the implementation of the reuse project?

- Reuse project concept
  - Were any reuse alternatives considered?
  - What were the reasons behind the choice of the regeneration strategy?
  - What was the general aim of the reuse project?
  - Were any similar practices in Italy or worldwide consulted in order to elaborate the concept of the reuse project? If so, which ones?
  - What was the general strategy concerning the conservation and preservation of the former industrial site? At the level of architectural conservation? Historical?
  - Who was consulted during the development phase of the concept?
  - In your opinion, what was missing in the elaboration of the concept? Which difficulties were faced?

- Reuse project implementation
  - What were the main phases of the project implementation? Timing?
  - What were the difficulties in the implementation phase of the project?
  - Was the initial project implemented entirely? Or did it evolve during the implementation phase?

Current management

- Who is managing the site now?
- Who are the stakeholders?
- What are the difficulties in project management?
- What are the main revenue sources? Expenses?
- Who covers the income gap, if any?

Musealization of organizational history

- What aspects of the abandoned organization are preserved in the new project?
- What intangible aspects of the former industrial site were taken into consideration in the regeneration project?
- What projects/activities were organized to preserve and narrate the organizational history of the former industrial site?
- Are there any books and/or articles on organizational history of the site?
- Does the new project include any exhibition on the history of the former industrial site? What are the musealization tools used within the exhibition: visual, digital, verbal?
- Is there any connection between materiality and visuality? How is the narration of the organizational history connected with the spaces of the former industrial site?
- Does the company archive exist? If so, where is it? Can it be consulted freely?

Appendix 4. Former Florio plant: musealization of tangible and intangible heritage

	SPACES	SPATIAL AND ARCHITECTURAL DIMENSION		ARTIFACTS	VISUAL AND TEXTUAL DIMENSION		Notes
		Space destination	Architectural aspect		Visual dimension	Textual dimension	
1	**Entrance**	FACILITIES/ HISTORY_SITE	SAME	ORIG_ART_ORIG_LOC	DESCR_PANEL	PLANT_HISTORY	Entrance to the museum (in past - entrance to the plant). The plaque with the Florio logo and the inscription "The industry dominates the force".
2	**Hiring and payroll offices**	FACILITIES	SAME	NO_ART			Ground floor - museum reception and offices (in past - hiring an payroll offices; first floor – guardian's residence (in past - director's residence).
3	**Offices**	EXT_USE	SAME	NO_ART			Ground floor - Sea Turtle Rescue Centre (STRC) managed by The Marine Protected Area (MPA) of the Aegadian Islands (in past - offices); first floor – not restored (in past - owner's residence).
4	**Two-doors huge hangar**	HISTORY_SPACE	SAME	ORIG_ART_ORIG_LOC			Exposition of two huge boats called «parascarmi» or «paliscarmi» (transported nets, cables, anchors) (in past - two-doors huge hangar).
5	**Hangar's warehouse**	ABANDONED (intended DIFF_CULT_USE)					Space designated for exhibitions (now closed) (in past - warehouse of the hangar).
5a	**Courtyard**	HISTORY_SPACE/ HISTORY_SITE	SAME	ORIG_ART_ORIG_LOC	DESCR_PANEL	PLANT_HISTORY	Plaques that commemorate the best years of the tuna fishing activities. Before the museum closes, the bell rings in the courtyard. The bell is the one which notified about the end of the working day in the factory.
6	**Women's dressing room**	HISTORY_SITE	SAME	NO_ART	PHOTO	PLANT_HISTORY	Permanent photo exhibition of Salgado, Scianna, Burri, Freed on the tuna fishing at the plant in the past (in past - women's dressing room).
6a	**General warehouse**	HISTORY_SITE	SAME	NO_ART	PHOTO	PLANT_HISTORY	Permanent photo exhibition of Herbert List on tuna fishing (in past - general warehouse). The sign on the wall from the Fascist period dedicated to the women.
7	**Carpentry**	HISTORY_LOCAL	SAME	NO_ORIG_ART	VIDEO	LOCAL_HISTORY	Permanent exhibition dedicated to the Battle of the Aegates (artifacts, videos) (in past - carpentry). Managed by the Superintendence of the Sea.
8	**Former military warehouses**	ABANDONED (intended HISTORY_LOCAL)					Permanent exhibition dedicated to the Battle of the Egadi (now closed) (in past - warehouse of tuna products for military purposes).
9	**Warehouse**	ABANDONED (intended FACILITIES)					Intended to be a coffee bar (not realized yet, now closed) (in past - warehouse).
10	**Kindergarten**	ABANDONED (intended FACILITIES)					Intended to be a restaurant (not realized yet; now closed) (in past - kindergarten, from Parodi period).
11	**Packaging warehouse**	HISTORY_LOCAL	SAME	NO_ORIG_ART	PHOTO	LOCAL_HISTORY	Permanent exhibition «Antiquarium delle Egadi» dedicated to the artifacts found on the seabed of the Aegates (Punic, Roman, Norman amphorae, stumps of anchors, a helmet and a rostrum, a pewter bottle); exhibition dedicated to the Favignana quarries (in past - warehouse of final products).

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	SPACES	SPATIAL AND ARCHITECTURAL DIMENSION		ARTIFACTS	VISUAL AND TEXTUAL DIMENSION		Notes
		Space destination	Architectural aspect		Visual dimension	Textual dimension	
12	**Warehouse**	HISTORY_IND/ DIFF_CULT_USE	SAME	NO_ART	VIDEO/ PHOTO	IND_HISTORY/ PLANT_HISTORY	Exhibition dedicated to Florio family (photos, videos); photo exhibition on tune fishing in Favignana); temporary exhibitions (e.g. in 2019 – exhibition dedicated to environmental sustainability) (in past - warehouse for final products).
13	**Olive oil warehouse**	HISTORY_SPACE/ HISTORY_SITE	SAME	ORIG_ART_ORIG_LOC	PHOTO	PLANT_HISTORY	Exposition of different types of cans that were used for tuna (artifacts); photo exhibition of workers at work (in past - Olive oil warehouse).
14	**Warehouse**	ABANDONED					Abandoned space (in past - warehouse).
15	**Corridor**	HISTORY_SITE; HISTORY_IND; HISTORY_LOCAL	SAME	NO_ART	DESCR_PANEL	IND_HISTORY/ LOCAL_HISTORY/ PLANT_HISTORY	Descriptive panels dedicated to the history of the plant and of the tuna industry: History of the industry (tuna fishing and tuna traps in Sicily; machines and equipment of the industry; Local history (history of Favignana island); Site history (history of the Favignana plant); Space history (original location of the work sectors and production cycle path with a detail description of each step of the process; original location of the machinery in the tuna processing stages). (In past - corridor).
16	**Stiva room "Torino"**	HISTORY_SITE	SAME	NO_ART	VIDEO	PLANT_HISTORY	Video installation with 18 interviews to ex-workers (in past - department of stowing tuna into cans).
17	**Workshop for making cans**	DIFF_CULT_USE	SAME	NO_ART			Conference hall for 400 places (in past - space where the cans were realized, crimped and closed).
18	**Salt warehouse**	HISTORY_SITE	SAME	NO_ART	VIDEO	PLANT_HISTORY	Documentary «La pesca del tonno 1924-1931» produced by Istituto Luce on mattanza (tuna fishing process and tuna production cycle at the plant (in past - salt warehouse).
19	**Men's dressing room**	ABANDONED (intended DIFF_CULT_USE)					Space dedicated to the expositions (now empty) (in past - men's dressing room).
20	**Coal warehouse**	ABANDONED (intended HISTORY_SITE)					Video installations "The Death Room" on the tuna trap (now closed - in past - room serving the stoves and chimneys).
21	**Four-doors huge hangar**	HISTORY_SPACE	SAME	ORIG_ART_ORIG_LOC			Exhibition of ancient artifacts, space left as in was in the past (in past - large hangar where the tuna arrived directly from the sea).
22	**"Bosco"**	HISTORY_SPACE	SAME	ORIG_ART_ORIG_LOC			Exhibition of the ancient equipment (in past - place where tuna heads were removed and tuna were hung by the tail in order to bleed).
23	**The chimneys**	HISTORY_SPACE	CHANGED	ORIG_ART_ORIG_LOC			The open-air space has been kept the way it used to be, except for a small canopy that was posed in front of the chimneys, that was demolished. Ancient artifacts are exhibited. (in past - huge chimneys, space where tuna was boiled)

Appendix 5. Archaeological Mines Park: musealization of tangible and intangible heritage

SPACES		SPATIAL AND ARCHITECTURAL DIMENSION		ARTIFACTS	VISUAL AND TEXTUAL DIMENSION		
		Space destination	Architectural aspect		Visual dimension	Textual dimension	Notes
1.1.	**Energy building**	HISTORY_SITE/ HISTORY_IND/ FACILITIES/ HISTORY_REUSE/ HISTORY_LOCAL/ HISTORY_SPACE	CHANGED	ORIG_ART_NO_ORIG_LOC	DESCR_PANEL/ PHOTO	PLANT_HISTORY/ IND_HISTORY/ LOCAL_HISTORY	Space dedicated to reception center, ticket office and Museum of Archaeology and Minerals of the Park, bookshop. Museum exhibition: minerals and rocks, didactic panels about geological history, exhibits found by archaeologists during the excavation of the Rocca San Silvestro village and didactic panels on the history of the village and the techniques of research and extraction of minerals in ancient times).
1.2.	**Stables and warehouses**	FACILITIES/ EXT_USE	CHANGED	NO_ART			Space dedicated to the bar-restaurant “Santa Barbara”
1.3.	**Workshop building**	HISTORY_SITE/ HISTORY_IND/ HISTORY_SPACE	CHANGED	NO_ART	DESCR_PANEL/ PHOTO	PLANT_HISTORY/ IND_HISTORY	This building is crossed in order to the Temperino gallery. A series of didactic panels tell the story of mines and mining techniques; photos of minors
1.4.	**Temperino gallery**	HISTORY_SPACE/ HISTORY_SITE	SAME	ORIG_ART_ORIG_LOC	DESCR_PANEL	PLANT_HISTORY	Underground pedestrian path through the former mining gallery. (exhibited: Various panels about the mine’s closure moment and the struggle that the miners fought not to lose their jobs).
2.1.	**Earle shaft, winch building**	HISTORY_SPACE/ HISTORY_SITE	SAME	ORIG_ART_ORIG_LOC/ ORIG_ART_NO_ORIG_LOC	VIDEO/ DESCR_PANEL/ PHOTO	PLANT_HISTORY	Space devoted to the Museum of mining machinery (artifacts, model of the mine, photos and didactic panels about the artifacts and the work at the mine, video about the shaft).
2.2.	**Miners Museum «Morteo»**	HISTORY_SPACE	SAME	NO_ART	VIDEO/ DESCR_PANEL/ PHOTO	PLANT_HISTORY	This building today is dedicated to the miners, with a collection old photos and documents which tell of their lives, their work, the illnesses and the trade union struggles to prevent the closure of the mine. There are present: descriptive panels, a table, iron notebooks on the minor’s history, video by the miner called Duma on the history of the mine (8 min.).
2.3.	**Lanzi-Temperino Tunnel**	HISTORY_SPACE/ HISTORY_SITE	SAME	ORIG_ART_ORIG_LOC	AUDIO	PLANT_HISTORY	Underground path with a train (artifacts, audio)
2.4.	**The Valle Lanzi plants**	FACILITIES	SAME				Space dedicated for the warehouses (closed for public).
3.1.	**Gowett building**	FACILITIES/ EXT_USE	CHANGED	NO_ART			Student’s Hostel Gowett and its Home Restaurant Della Rocca. Managed buy Soc. Coop. Ballarò.
3.2.	**Villa Lanzi**	FACILITIES	CHANGED	NO_ART			Documentation Gathering and Conservation Centre; offices; archive.
3.3.	**Rocca San Silvestro**	HISTORY_SPACE/ HISTORY_LOCAL/ HISTORY_SITE/ HISTORY_IND	SAME	ORIG_ART_ORIG_LOC	DESCR_PANEL	PLANT_HISTORY	Site museum (ancient artifacts, descriptive panels).

Appendix 6. Manifattura dei Marinati: musealization of tangible and intangible heritage

	SPACES	SPATIAL AND ARCHITECTURAL DIMENSION		ARTIFACTS	VISUAL AND TEXTUAL DIMENSION		
		Space destination	Architectural aspect		Visual dimension	Textual dimension	Notes
1	**Entrance**	FACILITIES		NO_ART			The space is dedicated to the company shop.
2	**Fossa Marinatura**	HISTORY_SPACE	CHANGED	ORIG_ART_ORIG_LOC/ ORIG_ART_NO_ORIG_LOC	DESCR_PANEL/ PHOTO	PLANT_HISTORY	The space is now dedicated to the museum activities. There are artifacts that were used in the fishing and production processes with descriptive panels and different photos and maps.
3	**Hall of Fires**	HISTORY_SPACE/ PRODUCTION	SAME	ORIG_ART_ORIG_LOC/ ORIG_ART_NO_ORIG_LOC	VIDEO/ DESCR_PANEL/ PHOTO	PLANT_HISTORY	The space is now dedicated to the production and museum activities. The production process can be seen by the visitors. There are different artifacts that are used in the production process with descriptive panels explaining them, different photos and videos.
4	**Vinegar Hall**	HISTORY_SPACE	SAME	ORIG_ART_ORIG_LOC	DESCR_PANEL	PLANT_HISTORY	The space is now dedicated to the museum activities. Different ancient artifacts are exposed.
5	**Cinerary**	HISTORY_SPACE/ FACILITIES	SAME	NO_ART			The space is now dedicated to the disposition of the products for sale in the fridge cell.
	Fish market	EXT_USE					The space hosts the offices of the Regional Park of the Po Delta.

Appendix 7. OGR: musealization of tangible and intangible heritage

	SPACES	SPATIAL AND ARCHITECTURAL DIMENSION		ARTIFACTS	VISUAL AND TEXTUAL DIMENSION		
		Space destination	Architectural aspect		Visual dimension	Textual dimension	Notes
1	**Sala Fucine**	DIFF_CULT_USE	SAME	NO_ART			
2	**Duomo**	DIFF_CULT_USE	SAME	NO_ART			
3	**Binari**	DIFF_CULT_USE	SAME	NO_ART			
4	**The yards**	FACILITIES	CHANGED	NO_ART			
5	**Transliteral shop**	FACILITIES	RECONSTRUCTED	NO_ART			
6	**Com'era Com'è**	HISTORY_SITE	RECONSTRUCTED	NO_ART	AUDIO/ DESCR_PANEL/ PHOTO	PLANT_HISTORY	The space is dedicated to a small exhibition on the history of the OGR. Audio interviews of the ex-workers; Descriptive panels on the history of the plant; Photos of the plant in the past
7	**OGR Tech**	EXT_USE	CHANGED	NO_ART			
8	**OGR Taste**	FACILITIES	CHANGED	NO_ART			

Appendix 8. Santa Marta complex: musealization of tangible and intangible heritage

	SPACES	SPATIAL AND ARCHITECTURAL DIMENSION		ARTIFACTS	VISUAL AND TEXTUAL DIMENSION		
		Space destination	Architectural aspect		Visual dimension	Textual dimension	Notes
1	**Western Silo**	FACILITIES	CHANGED	NO_ART			Several classrooms, auditorium, porter's lodge and a support for the complex plant system. The only reference to the closed industrial plant is the architectural aspect.
2.1	**Former bakery. Courtyards**	FACILITIES/ DIFF_CULT_ USE	CHANGED	ORIG_ART_NO_ORIG_ LOC			The courtyards all covered with the earth in the past were opened in order to obtain a distribution system similar to that of the upper floors. The central courtyard was given a system of staircases and balconies, as well as lifts to the upper floors, in addition to the three original brick staircases. In addition, the balconies of the two side courtyards were completed, creating a link between the wings and central portion of the building. The roofing of the three courtyards was implemented in steel and glass. For the first years the exhibition on the history of the plant was exposed in the three recovered courtyards. From 2019, it was replaced with an exhibition of contemporary art (in collaboration with AGI Verona Association; duration: 5 years) which has nothing with the history of the plant. Some industrial artifacts are still disposed in the courtyards.
2.2.	**Former bakery. Basement floor**	FACILITIES/ HISTORY_SI TE	CHANGED	ORIG_ART_NO_ORIG_ LOC	VIDEO/ DESCR_PANEL/ PHOTO	PLANT_HISTORY	Educational labs and to the bar area; the exhibition "Santa Marta, history and itineraries. From Provisions Centre to University Site" which includes descriptive panels, photos, maps on the history of the Santa Marta complex, its renovation and on the history of the Veronetta area, 14 video testimonies on the history of the Complex. Various artifacts across the whole floor (rests of ovens)
2.3.	**Former bakery. Ground floor**	FACILITIES/ HISTORY_ SITE	CHANGED	ORIG_ART_NO_ORIG_ LOC	DESCR_PANEL/ PHOTO	PLANT_HISTORY	An entrance hall with porter's lodge and 11 classrooms (seven for about a hundred students and four for about fifty), a total of 758 seats. Some rooms are used for administrative services for students and as Didactic units, offices and for IT. One space is dedicated to the exhibition "Santa Marta, history and itineraries. From Provisions Centre to University Site": with photos and descriptive panels, maps
2.4.	**Former bakery. First floor**	FACILITIES	CHANGED	NO_ART			Spaces of the Department of Economics. The only reference to the closed industry is the architectural aspect. Some signs remained from the times of the military warehouse.
2.5.	**Former bakery. Second floor**	FACILITIES	CHANGED	NO_ART			Spaces of the Department of Management. The only reference to the closed industry is the architectural aspect. Some signs remained from the times of the military warehouse.
2.6.	**Former bakery. Third attic floor**	DIFF_CULT_ USE	CHANGED	NO_ART			Spaces of the Law Department and Library. The only reference to the closed industry is the architectural aspect.

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