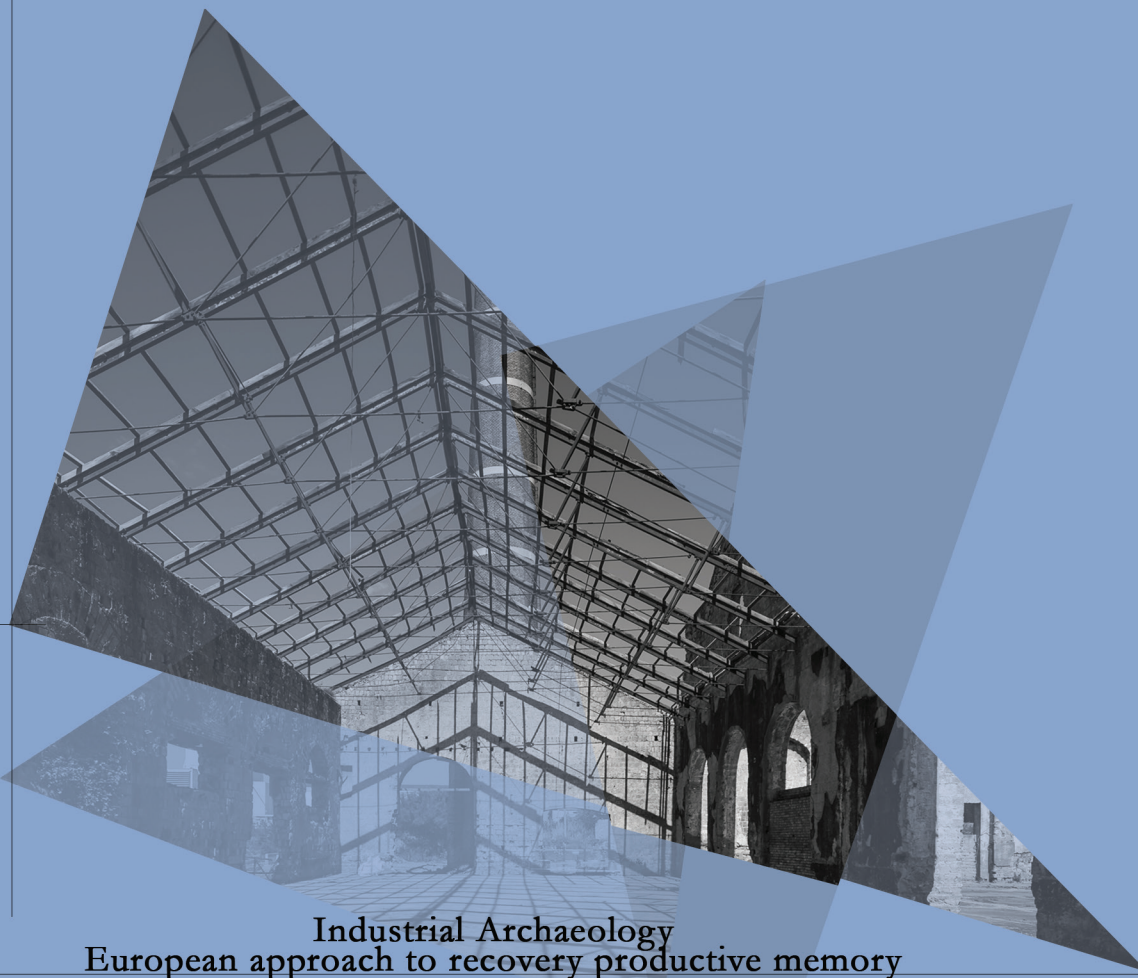


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Industrial Archaeology
European approach to recovery productive memory

Mara Capone, Noelia Galván Desvaux

Luis Agustin-Hernandez, Lucas Fernández-Trapa

01 . Industrial Archaeology. European approach to recovery productive memory

a cura di | edited by Mara Capone, Noelia Galván Desvaux, Luis Agustin-Hernandez, Lucas Fernández-Trapa

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Industrial Archaeology **European approach to recovery productive memory**

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Digital model

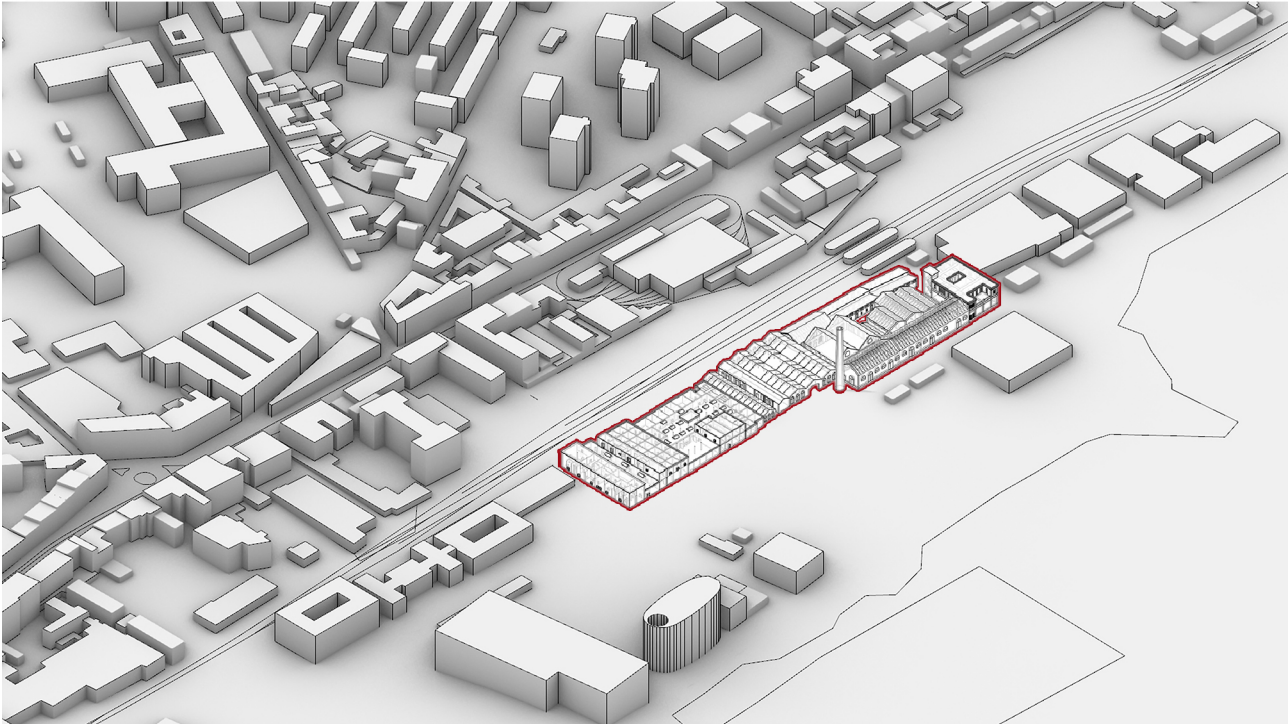
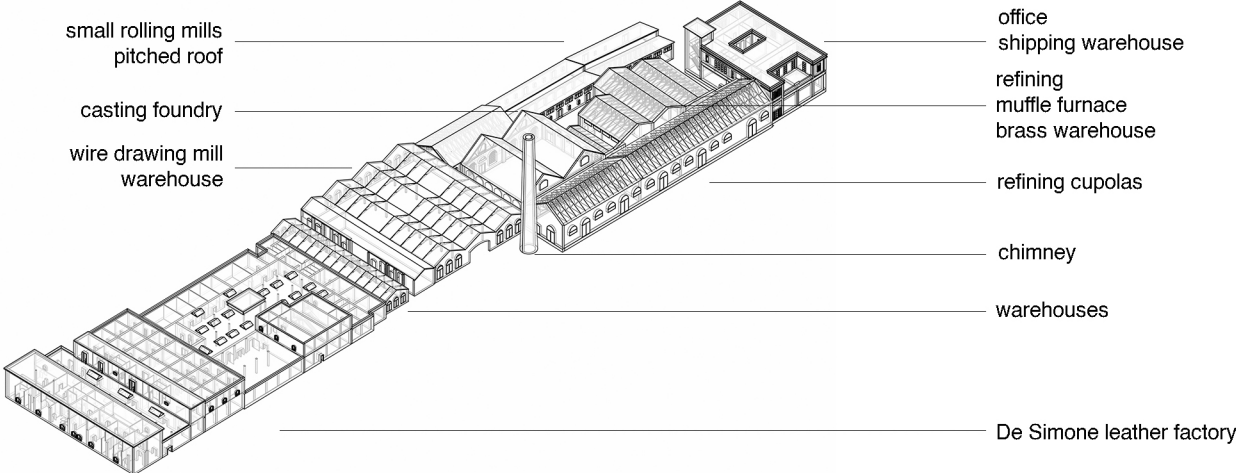
Visualizing history: the case of the ex Corradini

Angela Cicala, Arianna Lo Pilato

Introduction

“Each phenomenon is never analyzed in isolation, but always in relation to the context, taking into consideration the dynamics that have marked its origin, the ways in which this phenomenon manifests itself and its location, the repercussions it has on the territory, and the possible future scenarios. And perhaps this is even more true for the industry which, since its inception, has deeply and indelibly shaped human life.” (Palmentieri, 2018, p. 11)

The study of industry, as a territorial phenomenon that links the concept of heritage with the territory in which it develops, represents the key point for delving into the events that have involved the Neapolitan territory, especially when referring to the eastern area. The eastern area of Naples, traditionally considered a connection zone between the historic center and the eastern outskirts, is in turn composed of the Poggioreale, Industrial Zone and the area comprising the neighborhoods of San Giovanni a Teduccio, Barra, and Ponticelli. Thanks to its strategic position, resources, and the presence of extensive road, rail, and port infrastructure, it has always been identified as a nerve center for production and distribution, playing a crucial role in the economic development of the metropolitan area of Naples. However, starting from the 1970s, the downsizing of productive activities, along with relocation and decentralization policies, has profoundly altered territorial balances. Numerous areas and buildings previously used for productive purposes have been abandoned, remaining



unused in many cases. The eastern outskirts of Naples have certainly not been excluded from this process of industrial disinvestment that has affected the entire country. Unfortunately, as is well known, these places are currently in a state of considerable degradation and urban disorder, characterized by a high presence of urban voids, disused and abandoned factories, as well as vast territorial potentials completely unused. Starting from the study of the context of East Naples, the transformations that these territories have undergone since the bourbon age, due to favorable territorial, morphological, and accessibility conditions, up to becoming one of the most important historical industrial suburbs in Italy.

This contribution aims to particularly delve into the case of the former Corradini, an industrial complex located in the San Giovanni a Teduccio neighborhood, once the flagship of the metallurgical industry in the South and now a true industrial monument, a testament to its outstanding architectural quality (Fig. 1).

The industrial expansion of the eastern suburbs of Naples

Despite being adjacent to the historic center of Naples, the San Giovanni a Teduccio neighborhood is identified as a peripheral area deeply marked by its past, which has shaped its distinct identity. Characterized by a mixture of abandoned industrial plants, residential buildings, commercial areas, and green spaces, it occupies a strategic position near the port and the industrial zone, making it still economically relevant for the city of Naples. It serves as a territorial hinge, once known as Valle del Sebeto, which, in a north-south direction, marks the opening to the sea of the inner plain. Once occupied by marshes, it represented the natural eastern boundary of the city of Naples (Fig. 2).

The complex structure of the area has meant that it has always been characterized by interventions of various kinds that have accentuated this complexity. The social housing buildings constructed in this suburb from the late nineteenth century onwards show that efforts to expand the urban structure have not been lacking, but that such expansion has been hindered by the location of the railway station and the rail network,

Fig. 1. Current urban context with the existing core of the San Giovanni a Teduccio complex (3d model edited by M. Capone, drawing: by A. Cicala).



Fig. 2. G.A. Carafa, *Mappa topografica di Napoli e de' suoi contorni*, 1775. In red, identification of the plot where the Corradini will be built (editing: A. Lo Pilato).

as well as by the industrial designation reserved for much of the area. The neighborhoods present today are indeed the result of the fusion of multiple rural nuclei, which then merged with nineteenth-century social housing fabrics, industrial and commercial complexes, and recent residential subdivisions.

Indeed, with the industrialization that took place during the 18th century and especially at the beginning of the 20th century, the territories of Naples also underwent a process of industrial and economic transformation, albeit more slowly and to a lesser extent compared to other cities in Europe that had already embarked on significant industrial development. Under the Bourbons, the Kingdom of Naples experienced a period of fervor and cultural, artistic, and architectural revival: the expansion of ceramics production with the establishment of the Royal factory of Capodimonte, the development of the textile industry in San Leucio, and the development of new technologies and improvement of the infrastructure made the Kingdom of Naples competitive compared to other economies in Europe.

Serving as a conduit for the industrial process that occurred between the 18th century and the Unification of Italy, we recall the construction of the Royal Bourbon Workshop of Pietrarsa in 1840 by Ferdinand II of

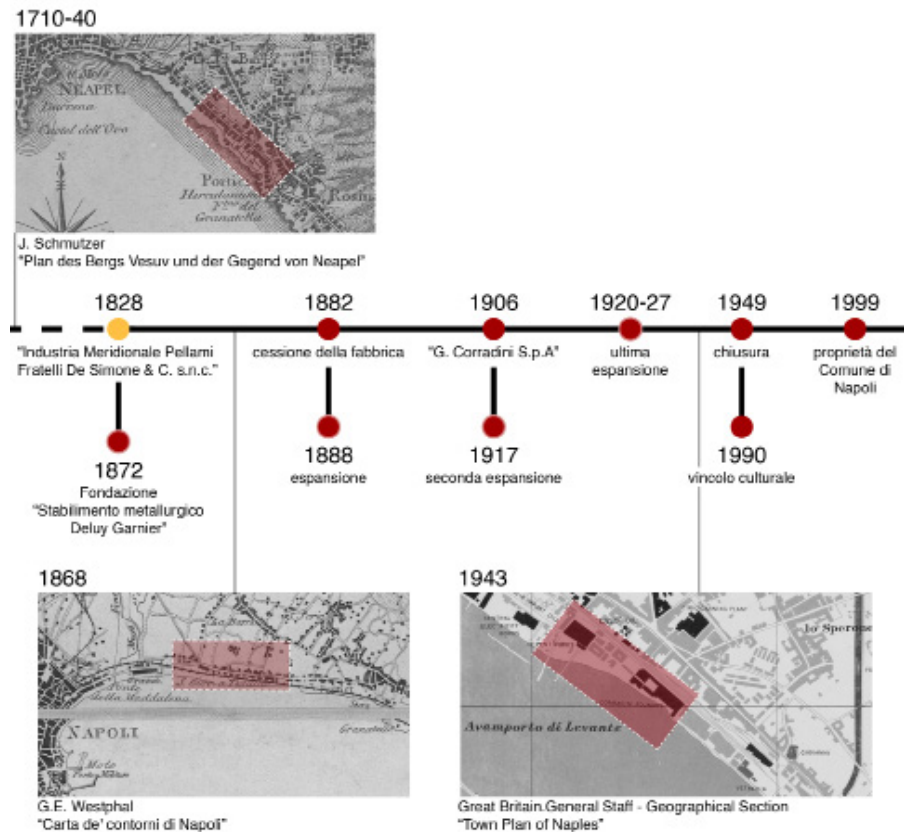
Bourbon, the first of many factories that would be built in the eastern area of Naples and the first railway facility in the entire Italian peninsula. However, with the Unification of Italy, a slow and gradual decline began throughout the South, quickly resulting in a significant economic gap between Northern and Southern Italy. The political strategies introduced with Unification were particularly favorable to the development of the internal economy of the North. The same cannot be said for the South, whose workshops had been halved in favor of those in the North and deprived of international trade. In the South, small landowners and farmers remained subject to the class of large landowners who enjoyed increasing rights, corruption spread, and the lower classes became indebted.

The policies implemented during the war only widened the gap between North and South. The initiatives subsequently applied to address the crisis proved ineffective or even exacerbating. Decisions based on political rather than thorough studies to ensure correct demographic development, healthcare system, and trade generated various dysfunctions, poor urban planning, and a disorderly process of urbanization. During the war, many industrial facilities had been converted to produce war material. After the war, these complexes no longer used for military purposes were sold to private individuals. These practices contributed to the crisis of the main industrial sectors, from the woolen industry to the metalworking industry. One of the main territorial consequences of these dynamics is represented by the disuse of large industrial areas and by a massive and disorganized increase in the building fabric.

In relation to this fluctuating situation, as defined by S. Palmentieri (2018) in the volume “Industrial Dynamics and New Territorial Arrangements: The Outskirts of Naples Between Urban Voids and Enhancement Prospects,” it is possible to identify three phases for the historical-industrial development of East Naples:

1. 1840-1904: Transfer of settlements from the historic center of the city to the outskirts;
2. 1904-1960: Expansion of the industrial area;

Fig. 3. Timeline of the historical development of the industrial complex (drawing: A. Cicala).



3. 1960-1990: Disposal of obsolete industrial buildings.

Examining the three periods, it emerges that as early as the 1887 Plan, the eastern outskirts of Naples had been identified as an industrial area to be developed, always conditioned by the railway, in such a way as to accommodate industrial plants, productive facilities, and workers' residences. Subsequently, with the 1910 Redevelopment and Expansion Plan, the relocation of the railway towards the east brought the industrial area back within the urban perimeter; an industrial area where, shortly thereafter, the neighborhoods of San Giovanni a Teduccio, Barra,



and Ponticelli were also included, previously defined as autonomous hamlets that allowed the connection of the outskirts with the port area. Throughout the twentieth century, this industrial area underwent significant expansion, transforming it into a complex territorial network connecting the surrounding areas. However, even though the 1910 Plan defined the intention to redefine the urban image by adding social housing neighborhoods, the split between the industrial area and the rest of the city seemed inevitable. This was mainly due to the construction of large oil refining plants that longitudinally occupy the entire extension of the plain in its central part. These plants created a physical and visual barrier that contributed to urban separation, but on the other hand, the high pollution produced by the plants already established a well-defined closure.

Regarding urbanization, on the other hand, it can be noted that during the time corresponding to the first phase, there was an increasing delineation of an increase in the building fabric around the hamlets. With the projects of the Redevelopment Plan, the inhabitants evicted from the historic center were transferred to the eastern area; all attempts to implement an adequate urbanization plan failed due to political obstacles. In the last phase, and particularly in the period following the Second World War,

Fig. 4. Ponte della Maddalena, 1704; Veduta di Napoli dalle paludi del Ponte della Maddalena, 1837 (<http://media.bibliothek.uni-augsburg.de/node?id=46729>; <http://www.ilportaledelsud.org/barra11.5f.htm>).



Fig. 5. At the top, views of the Corradini plant during the years of activity, at the bottom, the current state of degradation of the Corradini structures (photographs: D.M. Massari and F. Miranda's thesis).

East Naples saw a resurgence of the agri-food sector and construction, accompanied by a consequent demographic increase. The expansionary process was twofold, and organizational plans failed to support this increase, until the beginning of the deindustrialization process.

The decline of the industrial sector

The process of deindustrialization that began in the 24th century and affected the entire country was a complex and multifactorial phenomenon that had a significant impact on the economy and social fabric of the area. It represents a key transition that allows us to understand why for years now, we have referred to the eastern outskirts as an extensive area of industrial archaeology, including former factories of which only ruins remain. Deindustrialization began in the post-war period, with the crisis of many manufacturing industries that once constituted the engine of the local economy. Factors contributing to this decline included international competition, changes in production models, obsolescence of technologies, and loss of competitiveness of local industries. Indeed, the obsolescence of production facilities, often inadequate to meet the new market demands, led to the closure of many factories and loss of jobs, causing an increase in unemployment and a decrease in available income for area residents. Furthermore, the economic crisis that hit

Italy in the 1970s and 1980s further contributed to the decline of this area, leading to the closure of additional plants and loss of investments. Among the main causes of the crisis were rising prices and the oil crisis, among others. During those years, the desire to reorganize the territory to overcome the dismal conditions became a matter of primary importance, which is why in 1972, the new General Urban Plan of Naples was drafted and approved (in force until 1999) with the aim of decongesting the city. The Plan envisaged a general redistribution of residential buildings to address the imbalance between the depopulated inner areas and the overcrowded coastal areas, and last but not least, special attention to productivity with considerations on polluting industries so that they could be relocated outside the urban fabric to safeguard the environment and citizens. Unfortunately, as known, the non-implementation of these rules led to uncontrolled urbanization in all areas of the city, triggering strong alarmism as awareness of the health risks associated with industries began to emerge. All these conditions laid the groundwork for a slow decline, to which relocation was one of the main responses.

From industrial engine to industrial monument: the case of the former Corradini

As previously stated, the presence of an industrial structure inevitably affects the entire surrounding area. From the analysis conducted on the context of the East area of Naples, it has emerged how the concentration of industrial buildings has strongly influenced the history of this area, also significantly impacting its current situation.

Among the ruins that remain today, the former Corradini industry represents an emblematic case of this industrial past. It is one of the most important metallurgical factories, a testament to the process of industrialization and transformation of the eastern area of Naples. Founded in 1872 by the Frenchman Deluy Garnier, hence the original name “stabilimento metallurgico Deluy Garnier”, it was then definitively named “G. Corradini S.p.A” in 1906 with the transfer to the Swiss entrepreneur Giacomo Corradini.

The industry, or rather the complex, is the result of the aggregation of buildings belonging to different historical periods. The primitive nucleus consists of the ancient “Dent Allcroft” plant, which in 1828 was incorporated into the “Industria Meridionale Pellami Fratelli De Simone & C. s.n.c.”, these buildings originally used for the textile industry, were later incorporated, and repurposed in subsequent transformations. The plant indeed had a horizontal development that encompassed numerous areas along the coast, marshy lands, and buildings specialized in ceramic production, for a total of 70,000 square meters (Massari & Miranda, 2021, p. 131).

In fact, the Garnier metallurgical industry consisted of a plant for processing copper, brass, and other metals, covering a total area of 3,000 square meters, using 5 steam engines with the potential employment of 200 workers (De Rosa, 1968, pp. 68-69).

With the transfer to the industrialist Corradini, the complex became one of the most important, if not the most important metallurgical factory in the south. Corradini progressively transformed the initial enterprise into the large metallurgical complex that we still observe today. Sandwiched between the sea and the railway line, the plant could only expand along the coast. The first expansion of the working area occurred with the purchase in 1888 and then in 1897 of some marshy lands and the ruins of some buildings where ceramics were worked. In 1917, the metallurgical complex further expanded with the purchase of the plant to produce bottles by Eduardo Falcocchio. The last expansion is attributed to the period between 1920 and 1927, years in which the Merchant Navy leased additional areas for the expansion of the facilities for 25 years. This period of immense prosperity saw a setback following the bombings of the Second World War and the expansion of the railway line. In 1949, finally, the company - which had almost tripled the volume of the plants between the two wars, expanding northwards - was put into liquidation and the plants sold off after a failed attempt at worker self-management. With the end of operations and the closure of the plants, the entire complex was abandoned and left in a total state of decay. Numerous

technical and economic factors, as well as the changed destination of the area from industrial to residential, prevented technological renewal and productive recovery of these plants. After years under different companies, in 1981 it was acquired by the company Agrimont Sud s.r.l.. The deteriorating situation of the Corradini plant began to be a relevant social and cultural issue, thanks above all to the emerging Bulletin of the association for industrial archaeology. In 1999, ownership of the plant passed to the Municipality of Naples, with most of the buildings in a state of ruin. The high historical-architectural and testimonial value, which identifies the area of the Corradini plant as one of the preferred areas of the first industrialization of the city, is just one of the reasons that motivated its declaration as a property of historical and architectural interest. The entire plant was subject to protection with a decree from the Ministry for Cultural and Environmental Heritage on February 27, 1990 (Comune di Napoli, 2023). The case of the former Corradini perhaps for the first time in Italy, poses a problem of protection of vast proportions, as it is not a single building, but a complex system of factory (factory system) consisting of 54 real estate units (including processing sheds and service buildings) distributed over an urban area of about 7 hectares (de Seta, 1982, p.1). The acquired awareness of this complex as an industrial monument represents one of the most interesting architectural challenges in the Neapolitan territory, which still sees numerous projects today and could allow for the social and cultural revitalization of the entire neighborhood.

Methodology

Studying the ex-Corradini site means dealing with an industrial archaeological site that has undergone significant transformations over time. The result of this succession of sectoral developments, disconnected from each other and indifferent to the overall settlement context, has been disastrous: a chaotic mix of buildings lacking urban and functional coherence (Dal Piaz, 1982, p.19). Moreover, it is in such a state of decay that it is not accessible. Therefore, the process of reconstructing the area

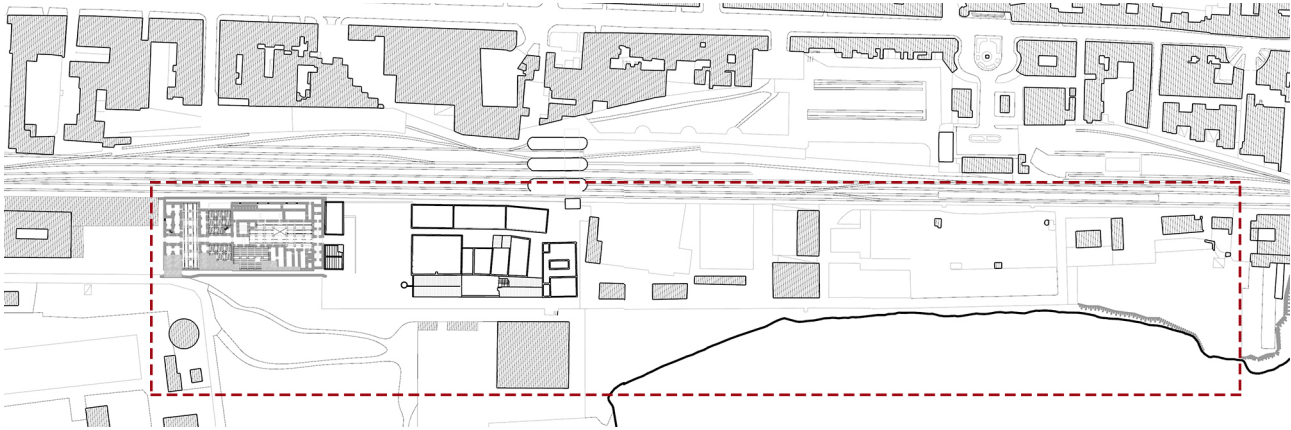


Fig. 6 Original building configuration of the complex, reconstructive hypothesis on the current layout (drawing: A. Cicala).

requires a combination of historical, documentary, and contextual data to propose an accurate representation of the site in its original state. The goal of this reconstruction is to provide an accurate and informative vision of the historical development of the complex, thereby contributing to its conservation and enhancement, and above all, aiming to facilitate its recovery (Capone & Cicala, 2023).

Based on now widely established techniques, the implemented workflow included the following phases:

1. Research and collection of historical data, iconographic sources, and documentation related to the current state;
2. Analysis and interpretation of historical documentation to define a timeline of historical events and identify the most important phases of the site's development;
3. Three-dimensional modeling of the organization of buildings in the identified phases;
4. Hypothesis of reconstruction divided into temporal phases.

Overview of construction process and timeline evolution

To identify the transformations that have marked the territorial context and consequently the entire complex, iconographic research was

conducted through topographic maps and historical photos. Starting from the assumption that in the oldest historical maps, the San Giovanni a Teduccio neighborhood and the entire eastern area appear to be sparsely urbanized rural areas, it is possible to identify the Maddalena Bridge (Fig. 4) as the connection between the peripheral areas to the east and the center of Naples.

Analyzing the sources, it is possible to identify, in the area where the Corradini complex will be defined, some buildings not well defined in Joseph Schmutzer's "Plan des Bergs Vesuv und der Gegend von Neapel" from 1710-1740, in the subsequent "Carta de' contorni di Napoli" from 1868 by Giovanni Enrico Westphal, the organization of the buildings begins to be more clearly delineated. Until we arrive at the "Town Plan of Naples" from 1943 by the General Staff - Geographical Staff of Great Britain, in which, instead, the final configuration corresponding to the last expansion of the complex is identified.

The reconstruction of the aggregation of the former Corradini complex is not straightforward; as previously stated, it consists of a series of buildings from different historical periods and consequently different architectural styles. (Fig. 5)

The reading of the various phases of typological development of the nineteenth and twentieth-century factory-building allows us to affirm that from the first structures characterized by vertical and multi-story development, typical of textile plants, the complex evolves towards more modern lines of masonry shed buildings with multiple bays and pitched roofs.

However, the current state does not specifically allow us to trace the intended uses of individual buildings, so we analyze them synthetically based on information available in the Bulletin of the Association for Industrial Archaeology of 1982 (Fig. 6):

- The rolling mill (1), dating back to the years 1872-74, is the oldest structure; it is a multi-story building whose spaces are divided by cast iron columns with capitals. The actual rolling mill, however, is represented by an additional shed adjoining this nucleus made of load-bearing tuff

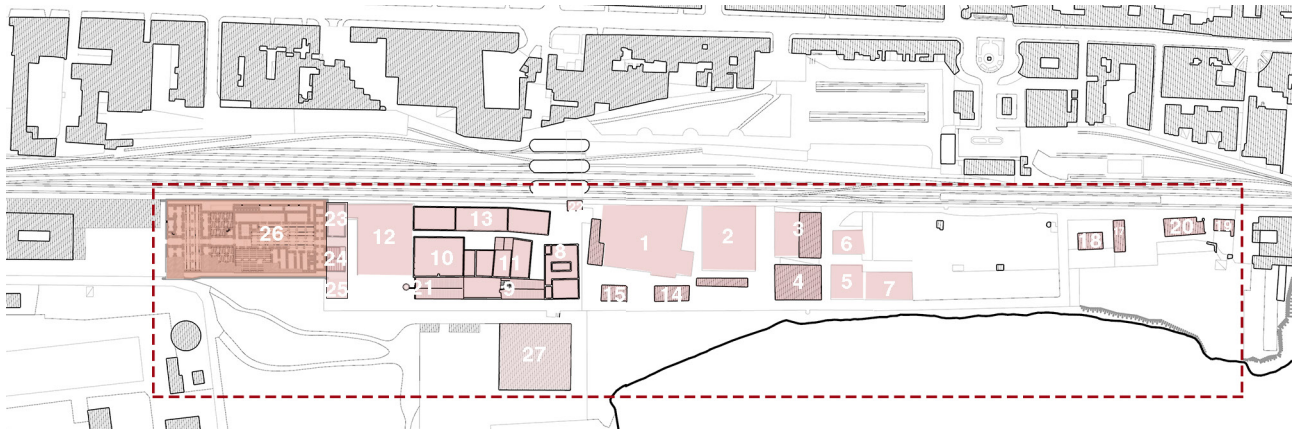
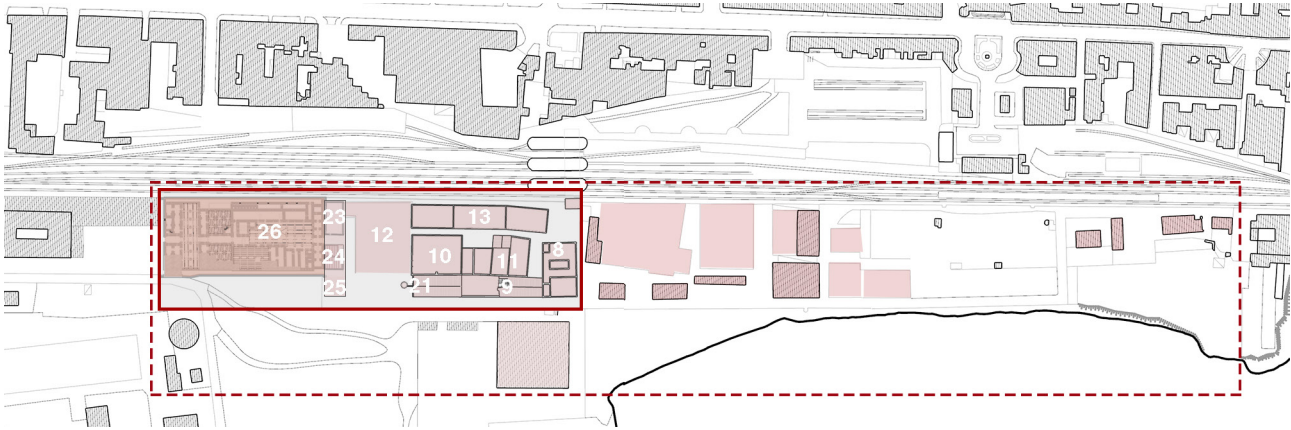


Fig. 7. Current site plane (drawing: A. Cicala).

masonry with multiple bays and pitched roofs with skylights;

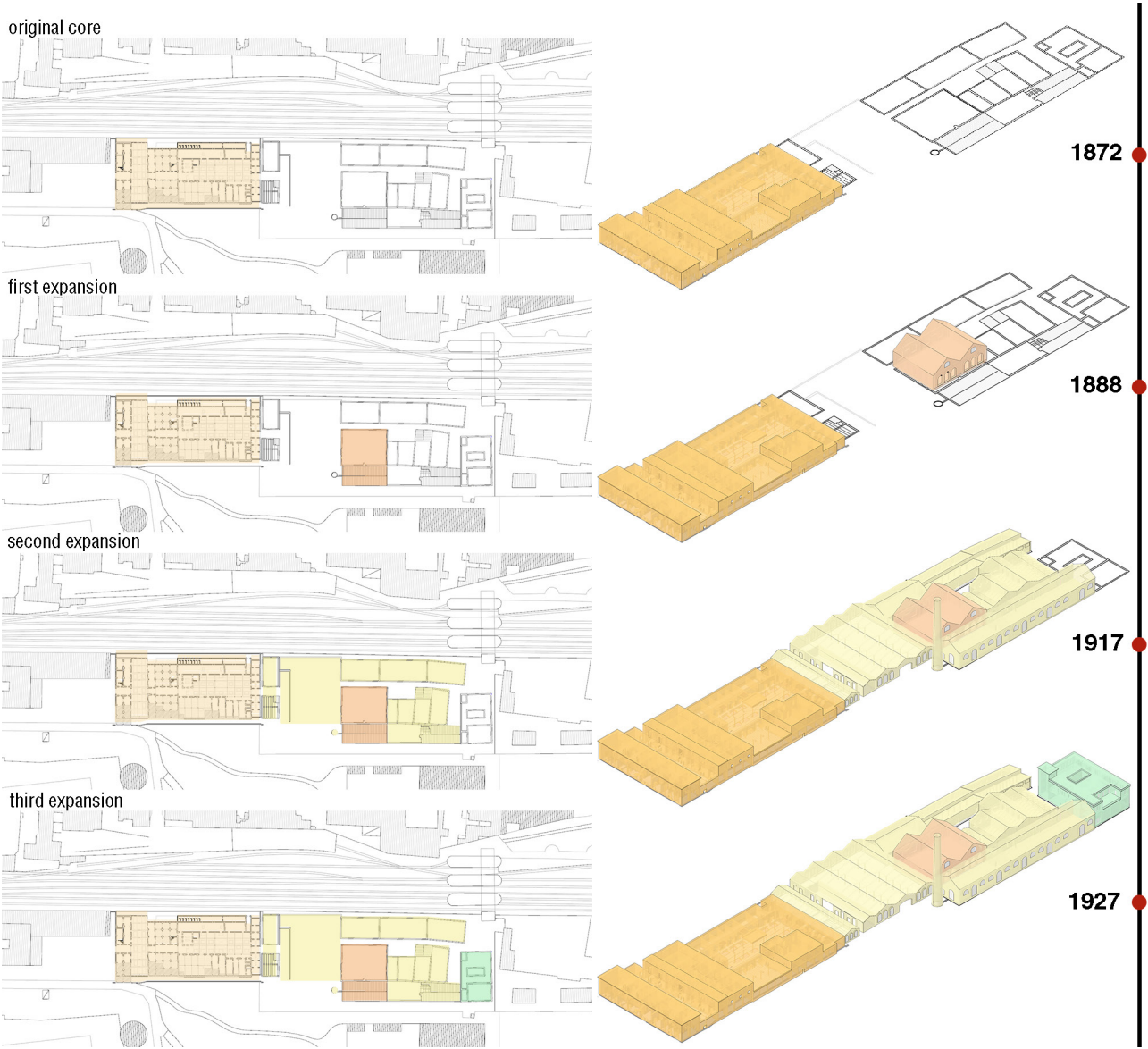
- The wire rolling mill (2), whose construction date is uncertain, located to the right of the previous rolling mill, is developed on three naves with load-bearing tuff masonry and pilastered division in reinforced concrete, presenting a facade typical of basilicas;
- The electric accumulators room (3), located next to the wire rolling mill; consisting of two naves with pitched roof and connected by a corridor covered by a vault made of latero-cement;
- The workshop (4) consists of three shed naves separated by reinforced concrete and steel pillars. Immediately to the right, with the same configuration, there is also the boiler workshop (5);
- Continuing to the right of the electric accumulators room, there are facilities and changing rooms (6) developed on two levels with flat roof and mixed structural composition;
- Adjacent to the boiler workshop, we find the cast iron foundry (7), of complex recognizability. Presumably, the load-bearing masonry is in tuff with reinforced concrete and steel structure next to it of the internal pilastered;
- In 1917, the office and shipping warehouse unit (8) was built, this reinforced concrete structure has a facade made of friezes and linear



designs at the entrances, while stucco decorations inside;

- Next to it is the refining cupolas (9) with pitched roof and load-bearing masonry in tuff. It features special iron and wood polanceau trusses with tie rods and struts supporting the roof;
- The casting foundry (10) is articulated in two naves and a third orthogonal to the first two. The perimeter load-bearing masonry features alternating courses of tuff and bricks and free internal spaces thanks to cast iron pillars adorned with stylized bases and capitals;
- Moving forward, there is a unit of four buildings (11): refining, muffle furnace, and brass warehouse. The recognizable resulting elements are pitched roofs, wooden trusses with steel chain, and load-bearing walls in tuff;
- The wire drawing mill and warehouse (12) are articulated on three naves with load-bearing masonry in tuff and pitched roof with metal framework, probably dating back to the early years of the twentieth century;
- A unit (13) articulated according to three parallel wall strips is divided into two different architectural typologies: small rolling mills with load-bearing masonry in tuff and pitched roof, and the warehouse articulated in two naves with load-bearing tuff masonry and shed roof.

Fig. 8. Original configuration of the area for the reconstruction hypothesis on the current site plan (drawing: A. Cicala).



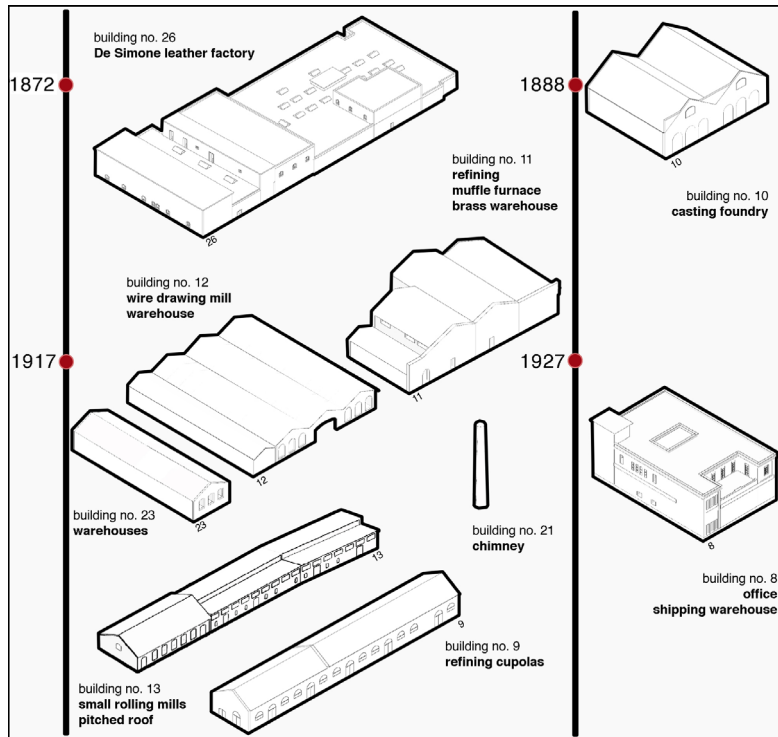


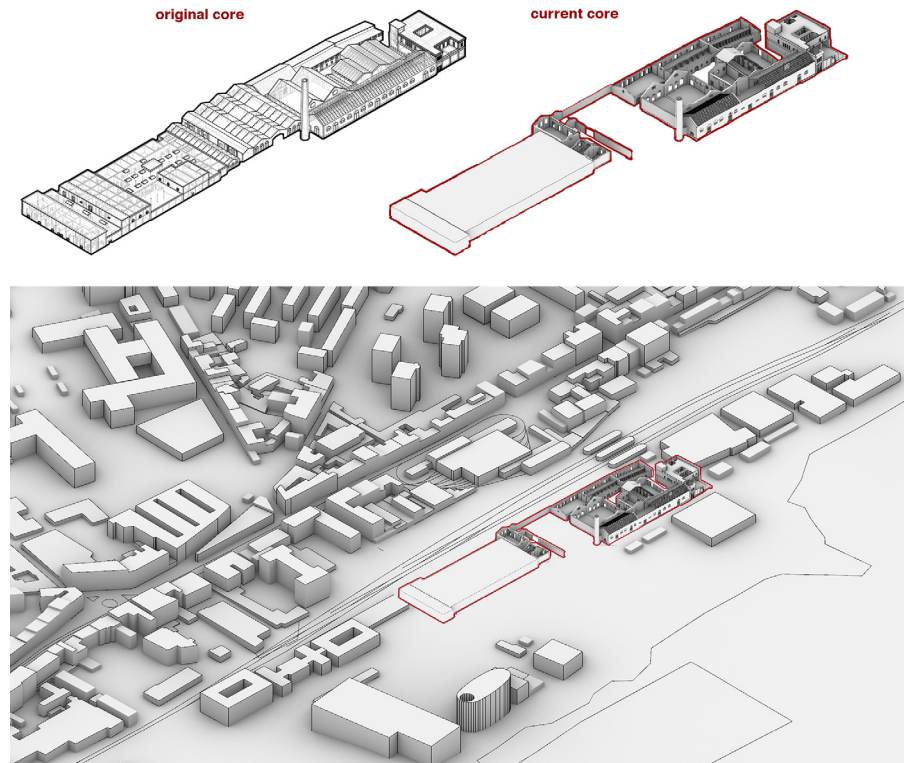
Fig. 10. Cataloging the buildings based on their period of construction (drawing: A. Cicala).

Additionally, there were other buildings intended for:

- coal and carpentry (14);
- general warehouses (15);
- chemical (16);
- shipyard (17);
- Corradini villa (18);
- gatehouse (19);
- employee housing (20);
- chimney (21);
- electrical cabin (22);
- warehouses (23-24-25);
- the sheet metal shed probably added after final closure (27);

Fig. 9. 3D model of the evolutionary phases of the complex (drawing: A. Cicala).

Fig. 11. Current urban context with the insertion of the original core of the complex (drawing: A. Cicala).



at the eastern boundary of the complex, we find the first building of the complex corresponding to the De Simone leather factory (26), divided into three bodies. The first partly has only one above-ground floor and partly two above-ground floors; the load-bearing structure consists of tuff masonry walls, steel beams at the first floor, and brick vaults, steel and reinforced concrete beams and slabs at the second floor. The second body, articulated on two above-ground levels, has a load-bearing structure in tuff masonry with cruciform pillars and masonry arches. The third and last body has one above-ground level except for a small area with a second level. The main structure is in tuff masonry with a central area of concrete

reinforced pillars and beams, a large environment with columns and cast-iron trusses with iron beam horizontals and brick vaults (Barbaglio et al., 1982). Currently, the conditions of the aforementioned buildings are terrible. Many units have completely collapsed, while others are barely recognizable, either due to the lack of fundamental elements or because much of them has disintegrated over time (Fig. 7). However, the study of the evolutionary phases of the complex has allowed the development of a hypothesis for reconstructing the original state, starting from the initial core up to the office and dispatch warehouse blocks, thanks to the cartography and documentation available (Fig. 8).

There are four phases that have been considered (Fig. 9):

1872: Original nucleus consisting of the “Pellami De Simone” factory;

1888: First expansion phase, presumably consisting of the three buildings used as a casting foundry;

1917: Second expansion phase, during which most of the buildings in the complex were constructed. Based on cartography, it is possible to highlight some differences compared to the current configuration; the buildings next to the original nucleus appear to form a single block, whereas currently, the block is divided into two different units, as is the case for the nucleus in front of the casting foundry building (Fig. 10).

1927: Third and final expansion phase, probably related to the construction of the office and dispatch warehouse buildings, which appear to have been built at a later period.

Conclusions

Within the study of a site that is part of the industrial archaeological heritage, it has been essential to delve into the historical events that have shaped and marked it to the extent that it has transformed itself and the surrounding environment. Analyzing the causes and defining the significant time periods has allowed for the creation of a reconstruction hypothesis of a portion of the complex, in which the original configuration has been identified and its development over time revealed (Figg. 1,11). In this process, tools such as detailed drawings, historical maps, and three-

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dimensional models prove fundamental for documenting and obtaining a clear vision of the complex industrial history of the former Corradini site. This representation effectively communicates historical interpretations, thereby contributing to the understanding and valorization of the complex and the San Giovanni a Teduccio neighborhood as a tangible testimony of Naples' industrial heritage.

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