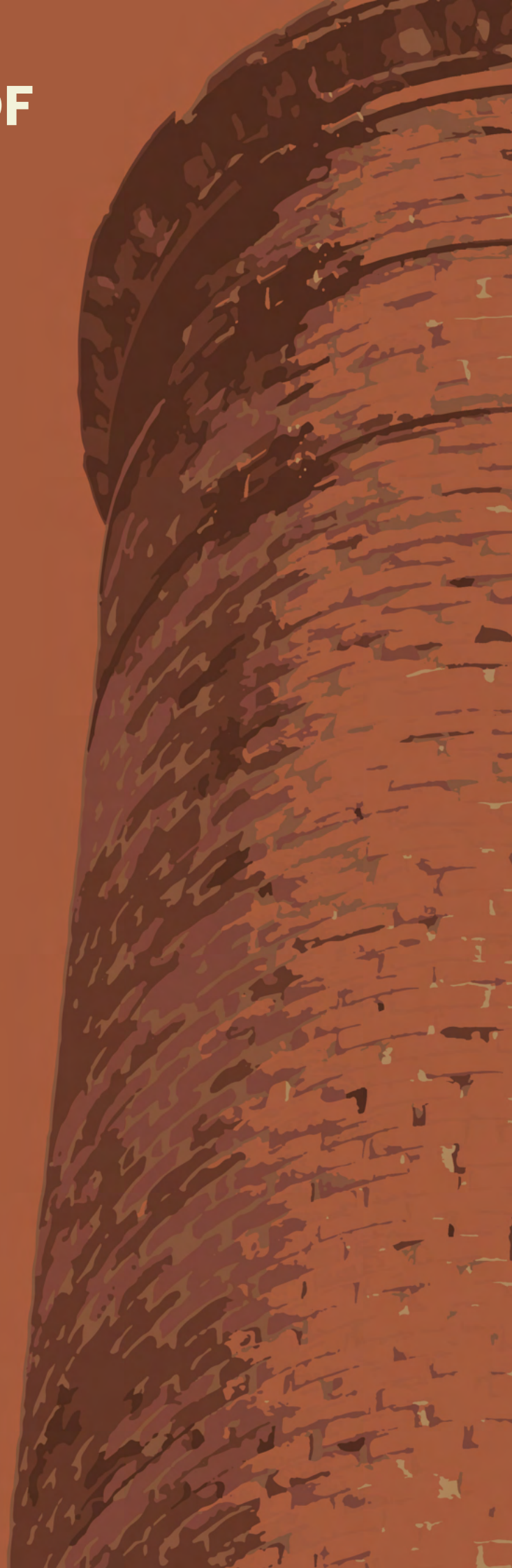


ADAPTIVE REUSE OF FORNACE GAIERO:

A JOURNEY THROUGH
WINE AND BRICKS





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di Torino**

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**Adaptive Reuse of Fornace Gaiero:
A journey through wine and bricks**

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1.1. Abstract

The **Fornace Gaiero** factory in Dogliani has a significant **cultural value** that shows the **history of craftsmanship and family tradition** in a region that has a rich **wine history and culture**

This thesis explores the potential of **re-purposing and readapting abandoned or unused and neglected industrial heritage**, turning them into active spaces that can adjust to **society's necessities** and therefore it not only preserves the architectural heritage but also **reactivates the area**.

Specifically it will be focused on the **adaptive reuse of the Fornace Gaiero**, analyzing the state of conservation of this site and examining the wine context in Piemonte and especially in **Dogliani**.

The **vineyards and wine-making heritage** of Dogliani carry not only economic value but also a deep **cultural legacy**. Traditions, festivals, and a way of life rooted in wine-making practices highlight the community's strong sense of identity.

This project proposes a **master plan** for the large factory site, incorporating wine-related activities to enhance tourism and position Dogliani as a key wine destination similar to Barolo.

The plan includes transforming the Fornace Gaiero into a museum that **showcases traditional brick-making machinery** and offers **workshops** on manual brick production and to share the knowledge of the brick production. Additionally, the site will feature accommodation, wine storage, tasting rooms, and areas for enjoying Dolcetto wine, aiming to **revitalize the site as a cultural landmark**.

The idea is to incorporate to the building **contemporary uses that adapts to nowadays necessities** as well as to the **actual activities and events** of Dogliani, merging the origins and essence of the Fornace with its contexts and the community itinerary.

In conclusion, the adaptive reuse and conservation of Dogliani's Fornace Gaiero is looking to ensure the **preservation and enhancement of the region's rich cultural significance, blending history, craftsmanship, and cultural identity**.

Image 01
Brick mountain debris
Source: Photo by the authors, 2024

1.2. Research Question

General

“How can the **adaptive reuse** of **industrial heritage** sites can be strategically planned to **preserve historical significance** while **reviving the essence** of the region’s **cultural identity**?”

Specific

“How can the **Fornace Gaiero** in **Dogliani** be **transformed** into a multi functional space that preserves its historical significance as a **brick production** site while seamlessly incorporating the **town’s wine heritage** to strengthen its connection to the **region’s cultural identity**?”



Image 02
Brick mountain with the owner of the Fornace
Source: Photo by the author, 2024

1.3. Theoretical Framework

INDUSTRIAL HERITAGE

The emergence of architectural heritage and the concept of “heritage” in general started in the **19th century**, aiming to create a list of all the monuments, buildings and other kinds of masterpieces that would be considered important for their value and because they represented a **collective memory**. Over time, this concept evolved, leading to the establishment of several influential charters, such as the **Athens Charter (1931)**, the **Venice Charter (1964)**, and the **Nizhny Tagil Charter (2003)**, each addressing different aspects of heritage conservation and emphasizing the importance of preserving cultural and industrial monuments.

At the same time, at the beginning of the 19th century, a period of industrialization happened in Europe. This **Industrial Revolution** started, not only to change the lifestyle of people with massive employment, but also **the aspect of cities: “...greater densities in urban areas and the urbanization of the natural and rural environment ... This new landscape** was defined by the concentration of industries and by the needs of a growing population, often new workers in a new society who demanded new public services and infrastructures, thus contributing to the image of the typical 20th century settlement” (Loures, 2008).

In 1972, in a United Nations Conference on the Human Environment, held in Stockholm, it was adopted the **UNESCO World Heritage Convention**, as one of the groups of environmental treaties, that was meant to **bring together “the conservation of cultural and natural heritage under a single legal instrument”** (Falser, 2001). The Convention therefore defines what sites can be considered to be part of the “World Heritage List”, and since 2003, more than 690 sites were inscribed to it (Falser, 2001).

After the Industrial Revolution, and especially in the recent decades, **factors such as globalization, deindustrialization, economic shifts and new technologies, have led to the abandonment of many industries**, leaving behind entire sites and buildings unused. (Falser, 2001).

However, an **appreciation for these industrial landscapes** started to appear, due to their historical value and their importance to the advancement they represented, as well as the **collective memory** that they hold. In 2003, was created the **“Nizhny Tagil Charter for the Industrial Heritage”, which was meant to seek the protection, conservation and adaptive reuse of the industrial heritage, to save them from abandonment and decay**. By the same year, out of the 690 sites inscribed in the World Heritage List, 28 sites are considered “Industrial Heritage”... embracing 5.3% of all cultural sites and 4% of all World Heritage Sites. (Falser, 2001)

“Industrial heritage consists of the remains of industrial culture which are of historical, technological, social, architectural or scientific value. These remains consist of buildings and machinery, workshops, mills and factories, mines and sites for processing and refining, warehouses and stores, places where energy is generated, transmitted and used, transport and all its infrastructure, as well as places used for social activities related to industry such as housing, religious worship or education.” (TICCIH, 2003)

Industrial heritage highlights, not only its history and infrastructure, but also the technological advances of its specific time and city, as part of architectural heritage they need to be preserved from generation to generation and be able to **built a bridge between the past, the present and the future**.

ADAPTIVE REUSE

Adaptive reuse is a term that has been incorporated at the end of the 19th century. In the Industrial Revolution when big factories were constructed, the cities were changing too as a response to the new needs of the community.

Between 1970 and 1980, technological advances among other factors caused many industries to close leaving many **abandoned buildings within the city**. “The result of deindustrialization was a large opportunity for empty and abandoned industrial buildings and sites in cities. Until the late 1990’s **industrial infrastructures were considered barriers and obstacles** which should be removed. But **nowadays it seems that industrial buildings are built to reuse** and the point of view toward these industrial legacy changes from demolition to reuse” (Amiri, E. 2020).

The first time the term “Adaptive Reuse” was used was in the 19th century by **Eugène Viollet-Le Duc** when he established that it is one of the ways to preserve historical monuments: **“the best way to preserve a building is to find a use for it**, and then to satisfy the needs dictated by that use that there will never be any further need to make any further changes in the building” (Plevoets & Cleempoel, 2011). In the 20th century, Alois Riegl did a comparison of values between present day values (Art, modernity) and historical values (period of time, aging) and add a new one, the use value, “he recognized reuse of historic buildings as an intrinsic part of modern conservation” (Plevoets & Cleempoel, 2011).

The idea of Adaptive Reuse is not only to adapt the existing structures to new uses, but to adapt it to meet the needs of the community and to preserve the essence of the city and the site. “Major change of a building with alterations of both the building itself and the function it accommodates. It is not only a process of building conversion by recycling usable components for the purpose of new use, but also a method and strategy that can be used to preserve its cultural heritage (Wilkinson, H et al., 2014, Pg. 95). **A good adaptive reuse project is reflected in a harmonious connection between the building, its surrounding and how the community is involved with it in the present and how it would be in the future**. Adaptive reuse also has a sustainable reasoning, the abandoned buildings that are not used and don’t have plans to be restored or preserved are demolished, in this case it is considered “as ecological waste and it damages the building’s identity of that space” (Amiri, E. 2020).

URBEX: URBan EXploration

The term Urbex means “**URBan EXploration**” and means to **explore abandoned sites, ruins and even underground spaces**. It was first used in 1793 when Philibert Aspairt got lost in the Catacombs in Paris and died in the underground paths (Bai & Buongiovanni, n.d). There are different ways to manifest this kind of activity, by just exploring, taking photographs, of the peak of adrenaline these kinds of sites give people.

“This practice, not being codified, is practiced by explorers or “urbexers” in different ways and with different rules, in general it can be said that there is a **rule valid worldwide** which is that of **respecting the places visited**, a rule that translates into the motto “**take only photographs and leave only footprints**”.

Many enthusiasts of this theme try to valorize these environments and propose them to the media platforms to make known the **lost wonders** of their countries and also **carrying out awareness projects and fundraisers**, through the diffusion and communication tools that we have today in majority” (Bai & Buongiovanni, n.d).

Italy for example, has a lot of abandoned villas, religious places, hotels, **industrial sites**, castles, restaurants, militar points, archeology sites, hospitals and noble buildings that have been re-known thanks to these explorations, some have appeared in fotografhies, some in movies. “More than a hobby, more than a passion, **doing urbex means deeply loving what surrounds us, the artistic and socio-cultural heritage of a country, Italy, which sometimes does not realize how much it has, how much it is worth, how incredible it is**” (Bai & Buongiovanni, n.d)



Image 03
Fornace Gaiero as URBEX
Source: Photo by the authors, 2024

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02

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2.1. Brick production

History in Italy and Piedmont

Brick production plays an important role in Italy's construction industry, enhancing the economic development of the country. "In 2016, investments in the construction sector represented **9.6% of GDP uses and 46.7% of gross fixed investments of the country**" (Baratta, et al., 2019, pg 79). Brick industry is considered as a low technological sector that leads to a production decrease, "in 2017, the annual production was less than 5 million tons, a certainly negative amount also because it confirms a production decrease originating from 2007" (Baratta, et al., 2019, Pg 80). Even though **the industry has a decrease in production**, it has been a resurgence due to exportation, domestic consumption and a growing demand for high-tech construction interventions related to energy efficiency. **Brick industry is historically known for its craftsmanship**, but it has been undergoing a process towards innovation, integrating sustainable practices and advanced technologies. **The industry is evolving to answer market needs, lighter blocks and energy-efficiency blocks** that meet seismic and thermal requirements. "The concept of efficiency understood as the outcome of an industrialization process capable of producing in short times large quantities of products have already been reached and this productivity and repetitiveness is no longer necessary in a downsized market." (baratta, et al., 2019, Pg 81)

Brick production started back in ancient Babylon in the II millennium BC where methods of molding and firing brick were developed to improve hardness and durability. "That means that we can consider these building products among the first industrialized products." (Baratta, et al. 2019, pg 81) **At the beginning, the first bricks were made in warm climates and were sun dried**, "Ancient Egyptians bricks were made of clay mixed with straw. The evidence of this can be seen today at the ruins of Harappa Buhen and Mohenjo-daro. Paintings on the tomb walls of Thebes portray Egyptian slaves mixing, tempering and carrying clay for the sun dried bricks" (Brickarchitecture, 2017). Paintings In 3500 BC the fired bricks started to gain importance as cold climate places could produce bricks as well.

Romans revolutionized brick production using them as walls, roofs and pavements. Their innovation included "engraving the grooves on the raw brick to make the bipedales easily divisible on site and to obtain triangular modules for the realization of the curtains of the "opus taestaceum" (Baratta et al., 2019, 82) and creating waterproof floors by using fragments of unused bricks, also known as "Opus signum".

Roman bricks were fundamental in construction of important structures and were the base for the use of bricks in architecture. In the roman empire, brick buildings were gaining popularity and this construction method was spread throughout Europe and dominated the construction of the medieval, renaissance and gothic periods. (Brickarchitecture, 2017)

After the fall of the Roman Empire, the Byzantines improved brick-making techniques, especially for domes. **In Medieval and Renaissance times , bricks became widely used again**, especially as a visible material in buildings like the Tower of the Palazzo Comunale in Siena and the dome of Santa Maria del Fiore in Florence. This kind of architecture "show how the technical culture of brick continued with experimentations and excellent achievements, the lasts accompanied, over the centuries, by the definition of the rules of use during the 16th to the 18th century thanks to Palladio, Guarini and Gallacini and in the nineteenth century, among many, with de Rondelet, Claudel, Vicat and San Bertolo" (Baratta, el al., Pg 82. 2019)

In the 18th and 19th centuries, architects like Palladio and Guarini helped formalize the use of bricks, while industrialization made brick production faster and more efficient. In the 20th century, Modernist architects like Alvar Aalto used bricks for both their practical and aesthetic qualities, "the 20th century architecture is also a place of experimentation of the integrated use between brick and other materials and of the aesthetic quality of the products." (Baratta, et al., 2019, pg. 82) In the mid 1900's, the brick industry focused on pre-assembled systems and improving production processes.

Today, brick production **focuses more on sustainability and new technologies. The use of recycled materials and advanced methods like 3D printing represent the latest innovations**, ensuring that brick remains relevant in modern construction and has been controlled and quality established by the creation of public policies. "The conditions that have supported the tools of innovation in the production and research sector have been both the public support policies for innovation since the 1980s, the creation of the National Association of Brick Industrialists (ANDIL)" (Baratta et al. Pg. 82, 2019) Throughout history, brick has adapted to meet the needs of different architectural styles, new technologies, and environmental challenges, showing its timeless value as a building material.

Brick innovation can be seen in Italy, especially in Piemonte. One of the major areas is

in the improvement of thermal performance. New products were developed that incorporate thermal insulation within the brick blocks, which helps improve energy efficiency in buildings. A significant innovation in this area is the use of recycled materials, such as polyester fibers from textile waste, in brick production. This research, led by Politecnico di Torino, has helped improve both the sustainability and thermal properties of bricks. "Some research has been developed, including those aimed at integrating textile waste into the mixture such as polyester fibers, developed by the Polytechnic of Turin in collaboration with companies in the textile and construction sector. These researches have shown that textile waste can be effective by improving the value of thermal conductivity without compromising mechanical performance" (Baratta, et al., 2019, pg 85)

In terms of process innovation, Piemonte has made significant contributions through the use of automation and 3D printing technology that makes the brick production more efficient, also used by local institutions. This advancement allows the creation of more complex and customizable brick designs while also reducing production time. "The mechanisms for automation and robotics can intervene both in production and in construction sites and these same mechanisms are able to condition the process right from the ideational

phase, contributing to redefining the morphology of the building, structural and non-construction components, allowing for creating elements with increasingly complex geometries in terms of size and morphology, which can be articulated, irregular and curved" (Baratta, et al. 2019, pg 89)

The emphasis of sustainability and circular economy have been an important aspect of brick production. The use of recycled materials, waste from other industries have been incorporated into brick mixtures. "The current legislation, which since 2017 has made compulsory the use of recovered and recycled materials in public works, aims to encourage the re-use of waste in their original functions and the recovery aimed at obtaining raw material." (Baratta, et al. Pg. 84, 2019). Using waste materials, the industry reduces environmental impact and contributes to a circular economy.

In conclusion, the brick industry in Piemonte **is evolving due to innovations that focus on sustainability and efficiency incorporating recycled materials**, enhancing thermal performance and implementing advanced technologies adapting to meet environmental and market demands. These changes are influenced by the need of energy-efficient, durable construction materials that act in accordance with environmental regulations.

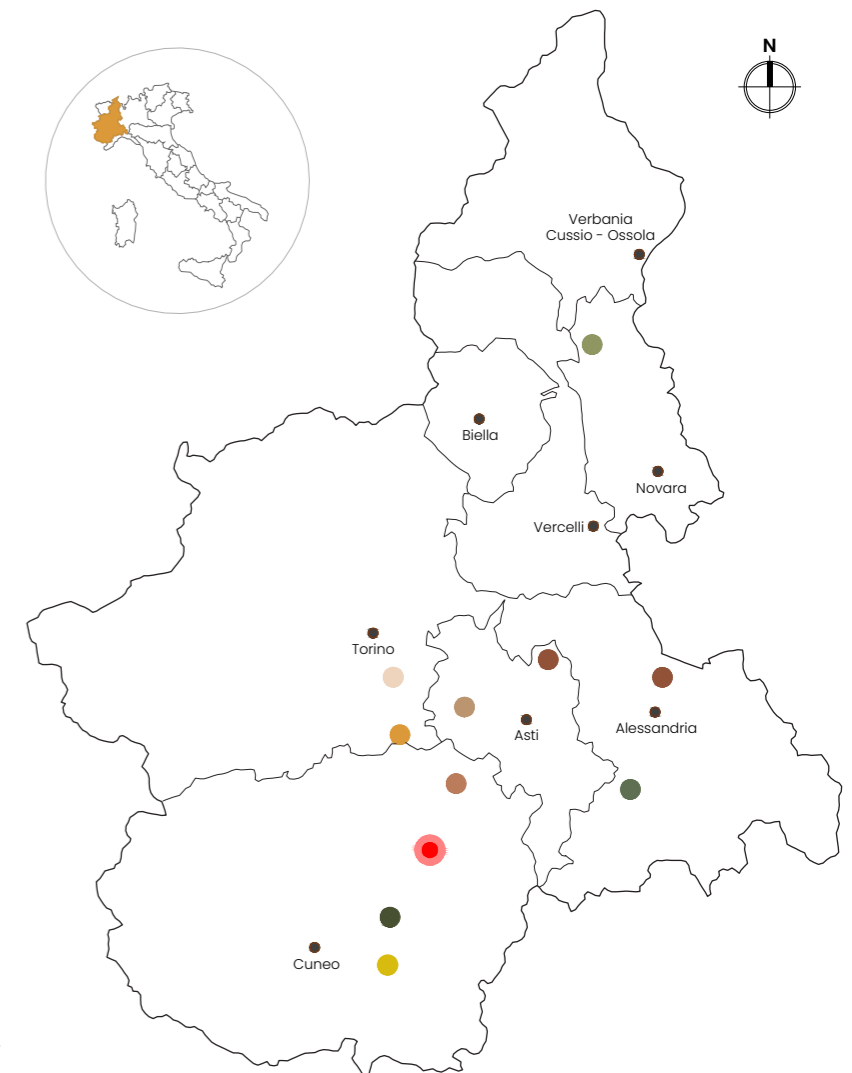
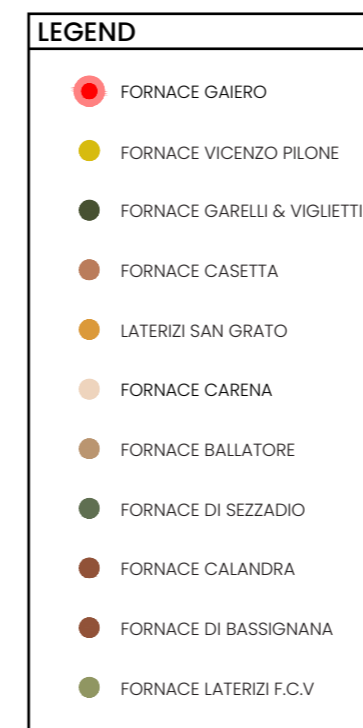


Figure 01
Schematic map of Piemonte with location of brick factories.
Source: Drawn by the authors, 2024

2.2. Brick factories in Piedmont

LATERIZI SANGRATO (TERRACOTTE SANGRATO)

Via Carmagnola, 50. Pralormo

Laterizi Sangrato is located in Pralormo, Italy, known for the production of high-quality bricks and tiles, with a great respect for tradition. This company was born at the beginning of the 20th century and, through the production of building materials, has been one of the main brick production companies in Piedmont. It is well known for the quality guarantee of traditional brick-making techniques and modern innovation. Nowadays, "Sangrato's constant commitment is to shape the exceptional clay from its own quarry, of unique quality in Italy, to create design products that combine tradition and modernity" (Terrecotte Sangrato, 2023)



Image 04
Screenshot of Laterizi Sangrato
Source: Google Earth, 2024 (Version 10.67.0.5)

FORNACE CASETTA

Corso Canale, 77. Alba

Fornace Casetta is a brick factory located in Alba, Italy. Traditionally produced bricks and tiles and was established at the beginning of the 20th century in 1876, Fornace Casetta was vital in providing raw materials for buildings in the region. It had a great influence on the architecture of Alba and surrounding localities. This kiln is especially well known for its artisan methods of production and quality of the products, it is carefully preserved over the years and has been adapting to modern techniques. Today, Fornace Casetta is not only a landmark of the industrial heritage of Alba but also an extraordinary destination to be visited for those interested in the history of brick-making and local architecture.



Image 05
Fornace Casetta
Source: Fornace Casetta, 2023

FORNACE BALLATORE

Strada Vecchia per Chieri, 65. Villanova d'Asti

Fornace Ballatore is a historic kiln for bricks, located in Asti, that has played an important role in local architecture and industry. Was founded at the end of the 19th century, and was one of the most important for brick production and tiles for many buildings in the area. The tradition of brick-making was preserved highlighting the craftsmanship methods becoming important from a cultural and historical point of view. "Our bricks faithfully reproduce antique elements, and meticulous searches for the same types of clay and attention to the use of traditional production techniques enable faithful reconstruction, where necessary, or the birth of a brand new architectural jewel which will successfully stand the test of time." (Fornace Ballatore. (n.d.) Today, Fornace Ballatore is a referent of industrial heritage in Asti.



FORNACE CARENA

Via Camporelle, 50. Cambiano

Situated in Cambiano, Italy, Fornace Carena is a historic traditional brick kiln that produces bricks and ceramics. Created at the beginning of the 20th century, the company has supplied the local building industry with materials that contribute to the realization of many architectural projects in the region. The kiln values the preservation of its artisanal techniques and high-quality craftsmanship. Today, the Fornace Carena is an important point of cultural and historical interest that hosts a museum with workshops and event space, attracting the attention of all people interested in industrial archaeology and the history of brick production in Italy. "with its more than 100 years of history in Turin entrepreneurship, it continues to stand out for its passion and industriousness but also ethics and recognition" (Svelato, 2020)



Image 06
Screenshot of Fornace Ballatore
Source: Google Earth, 2024 (Version 10.67.0.5)



Image 07
Fornace Carena
Source: Area L.S.B., 2010

FORNACE CALANDRA

Cascina Molino, 28. Ottiglio

One of the best-preserved examples of an old brick kiln is that of the Fornace Calandra, in Ottiglio, Italy. Established at the beginning of the 20th century, it became one of the keystones of the local construction industry and it added value to the architectural points of interest of the region. What makes Fornace Calandra different from other brick kilns is its commitment to old brick-making methods, its superior workmanship, and its preservation over the years. Nowadays, the tower is a key cultural and historical site in the village of Ottiglio, a place that encapsulates the essence of industrial heritage and traditional craftsmanship. Nowadays, the factory not only produces bricks, but steel elements too with completely automated systems to guarantee its quality.



Image 08
Screenshot of Fornace Calandra
Source: Source: Google Earth, 2019 (Version 10.67.0.5)

FORNACE DI SEZZADIO

Via Castelspina, 1. Sezzadio

Fornace di Sezzadio is a traditional brickworks company located in Sezzadio, Italy. It has produced bricks and tiles since ancient times. At the beginning of the 20th century, this kiln was in service and nowadays supplies the local construction industry with necessary materials for buildings. Fornace di Sezzadio is valued for its craftsmanship and its path throughout the years as one of the main in Piedmont. "The fabulous clays of Sezzadio, the right mix, the slow drying in the open air, the high temperature firing in Hoffman kilns, the extraordinary experience in respecting the millenarian tradition of our master brick-makers make the terracotta of the Fornace di Sezzadio a unique product of its kind" (Fornace di Sezzadio, (n.d.)



Image 09
Fornace di Sezzadio
Source: Bussola-Pro (n.d.)

FORNACE LATERIZI GARELLI & VIGLIETTI

Strada statale 28 sud, 15. Mondovì

Fornace Laterizi Garelli & Viglietti is located in Mondovì, Italy, and is a well-known brickworks company in terms of producing high-quality bricks and tiles. Was founded in the second half of the 19th century, it has produced building materials that contributed to the architectural development of Mondovì and surrounding towns. Better known for its loyalty to the ancient techniques and innovative methods and the use of the Hoffmann Kiln, Fornace Laterizi Garelli & Viglietti has an important professional reputation in the sector. Today, it represents an important site of the industrial heritage in this territory.



Image 10
Fornace Laterizi Garelli & Viglietti
Source: Garelli e Viglietti, 2024

FORNACE DI BASSIGNANA

Regione Valle del Pozzo, I. Bassignana

Fornace di Bassignana is a well-known historic brick kiln located in Bassignana, Italy. The traditional local company has produced bricks and tiles since the beginning of the 20th century and has played an important role in the building industry with quality products for the architecture in that region. The Fornace di Bassignana is known to have preserved traditional techniques for handmade bricks and developed craftsmanship. "Fornace di Bassignana has always combined tradition and quality with innovation and specialization, responding to every structural and design need" (Fornace di Bassignana, n.d.)



Image 11
Fornace di Bassignana
Source: Source: Google Earth, 2021 (Version 10.67.0.5)

2.3 Hoffmann Kiln

The history and its value

To talk about the Hoffmann oven, it is important to understand its evolution. From the beginning of the antique era, producers have sought the way to dry the clay for making bricks, **"The first ovens** were rudimentary and often relied on a simple **hole in the ground, into which bricks were placed and fires lit around them.** This method, although primitive, demonstrated man's ability to adapt and use the resources at his disposal." (Cantieri Edili, 2022) In the middle ages, ovens were built with walls that permitted more efficiency and an upgrade in the temperature control. This new method was spread through many places due to the demand of construction materials.

In the Renaissance the development of new inventions led to obtaining better quality, **resistance and durable bricks thanks to the invention of the mobile cart kiln.** This allowed the brick production to be more **homogeneous** by firing the bricks uniformly and controlled. "This innovation made it possible to obtain high-quality, resistant and long-lasting bricks." (Cantieri Edili, 2022)

The brick kiln had improvements in the next centuries. **The hoffmann kiln was first used in the 19th century in Germany,** this oven allowed mass production. "These kilns, first used in Germany, allowed for **large-scale mass production,** paving the way for the use of bricks in numerous architectural applications." (Cantieri Edili, 2022) It was invented and patented by the **German Frederich Hoffmann in 1858.**

Industrialization led to a revolution in brick production. "Thanks to technological innovations, it was possible to build larger, more efficient and automated kilns" (Cantieri Edili, 2022). **The tunnel ovens are an example of the larger production of bricks in one cycle reducing time and increasing its quality.**

Throughout time, sustainability has been gaining popularity, new kilns are designed to reduce environmental impact by using advanced technologies to control waste and emissions. "These eco-friendly kilns are an example of how the thousand-year-old tradition of brickmaking marries with innovation and environmental responsibility." (Cantieri Edili, 2022)

"These kilns were once widely used in Europe for bricks, ceramics and lime production" (Maithel, et al., 2014, pg 1). They were an essential point for

brick production because they **grant higher efficiency, controlled temperature, fuel saving, uniform heat and assurance of higher percentage of good bricks,** but the initial cost of the construction of the kiln is elevated.

This type of kiln is continuous, it was always burning and these ovens were constructed in **different shapes** such as **circular** in a first instance, and then developed into **elliptical** or **rectangular to be more efficient.** The fire movement was produced by the rush of air in the chimney of about 30 m tall connected to the central fuel duct underground, and the oven is covered by a roof to protect it from rain or snow.

The process for firing bricks in a Hoffmann kiln is a **circuit.** In the first place, the **bricks are placed and stacked inside the oven** with annular circular, elliptical or rectangular shape, more or less it had a perimeter around 85m. A Hoffmann oven is composed by three areas:

1. Brick firing area where the combustion is produced and the fuel is charged.
2. Brick pre-heating area: bricks were placed and pre-heated by the gas expelled by the fuels.
3. Brick cooling area: products are cooled down with cold air entering the circuit.

For the cooling, air enters by openings in the back, at the beginning of the cooling area there was a seal that guided the gas expelled by the fuel to the duct connected to the chimney, and this duct was located in the center of the ring with openings on the inner perimeter walls of the oven that permitted the gas to flow to the chimney.

The kiln was fed from the roof via holes that allowed solid fuels, normally coal) by a person every 15 or 20 minutes and this process could take between five and ten minutes to be completed. (Maithel, et al., 2014, pg 2). In a Hoffmann kiln "the fire travels a distance of around 10 m in 24 hours and fires 10,000 to 20,000 bricks. Daily, red bricks are unloaded from the back end of the brick cooling zone and an equivalent batch of green bricks is loaded ahead of the brick preheating zone" (Maitel, et al., 2014, pg 2)

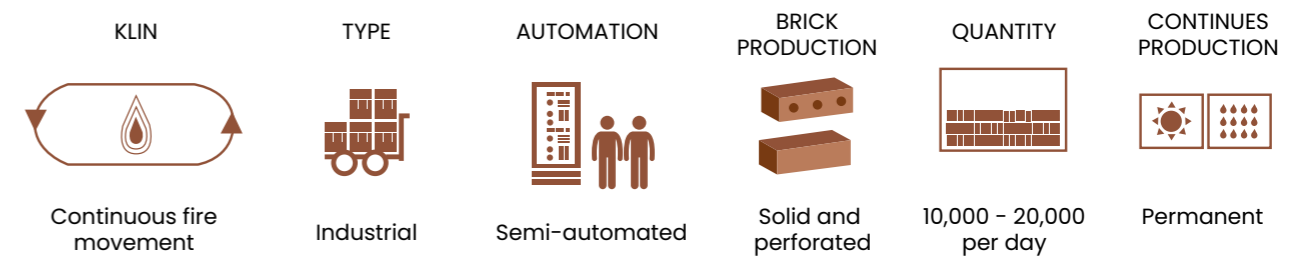


Figure 02
Characteristic of Hoffman kiln
Source: Drawn by the authors, adapted from Maithel, S., Kumar, S., & Lalchandani, D. (2014)

- 1 A Hoffmann oven is composed by three areas:
 - 1.1 Brick firing area where the combustion is produced and the fuel is charged.
 - 1.2 Brick pre-heating area: bricks were placed and pre-heated by the gas expelled by the fuels.
 - 1.3 Brick cooling area: products are cooled down with cold air entering the circuit.
- 2 The fire movement was produced by the rush of air in the chimney of about 30 m tall connected to the central fuel duct underground.
- 3 The bricks are placed and stacked inside the oven with vaulted annular circular, elliptical or rectangular shape, more or less it had a perimeter around 85m.
 - 3.1 Is covered by a roof to protect the structure from rain a snow.

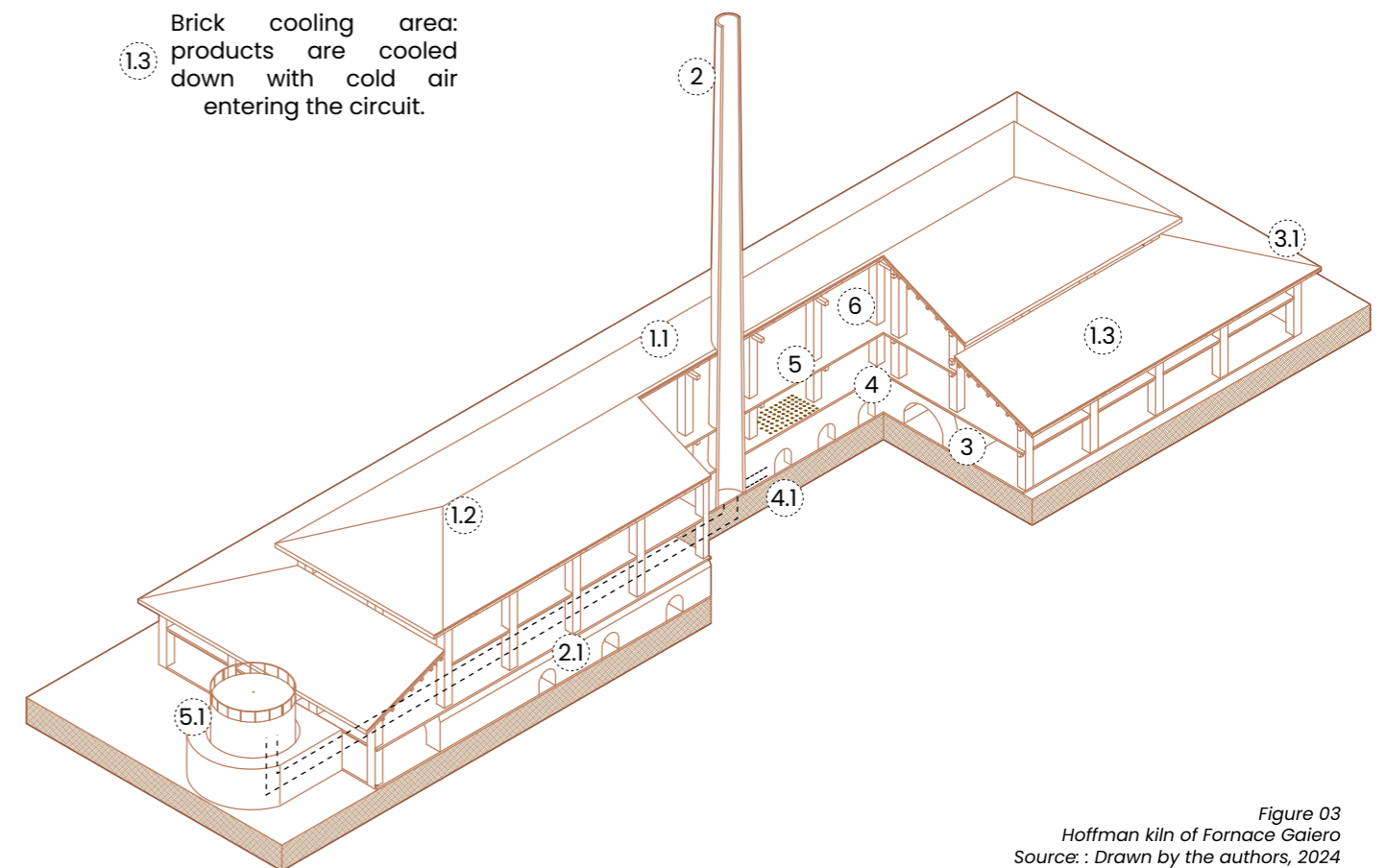


Figure 03
Hoffman kiln of Fornace Gaiero
Source: : Drawn by the authors, 2024

- 4 For the cooling, air enters by openings in the back, at the beginning of the cooling area there was a seal that guided the gas expelled by the fuel to the duct connected to the chimney
 - 4.1
- 5 The kiln was fed from the roof via holes that allowed solid fuels, (normally coal) by a person every 15 or 20 minutes and this process could take between five and ten minutes to be completed. Nowadays gas-oleo is used to feed the fire.
 - 5.1
- 6 In a Hoffmann kiln there can be fired around 10,000 and 20,000 bricks per day, after they are completely fired, they are taken out and placed on top of the oven's cooling zone area.

2.4. Process of brickmaking

Artisanal

Brick production process is divided into seven main steps. To create good quality bricks it is necessary to have good soil.

1. Digging brick clay

The **soil is excavated** from a quarry. "The equipment used to extract (or win) clay varies depending on the type of clay being won. **Hydraulic excavators** are the machines most commonly used and are generally operated in combination with dump trucks" (Brick development association, 2017, pg. 5). Sometimes, it is piled and leveled with different types of soil to improve consistency.

2. Sieving the soil

Then the soil is **sieved and cleaned, removing vegetation**, pebbles and rocks. Then it is exposed outside for a couple of months. "This is called the process of **weathering**." (Suryakanta, et al., 2024). After this step is completed, **water and sand** is mixed with the soil to create "**brick earth**" as an homogeneous mass (Suryakanta, et al., 2024).

3. Brick moulding

Bricks can be **formed by hand and by machine or a specific tool**, this depends on the industrial level of the factory. For **hand moulding**, the clay is placed inside the **mold and pressed to fill every corner** and the "Extra clay is removed either by wooden strike or frame with wire. Mold is then lifted up and raw brick is left on the ground" (Suryakanta, et al., 2024). On the other hand, machine forming is used if the factory produces a great amount of bricks. There are two types, plastic clay and dry clay machines. "In a plastic clay machine the clay in plastic state is forced to rectangular openings of a size equal to the length and breadth of the bricks and are then cut into strips of thickness of the brick with wires in frames.

In dry clay machines, dry clay is reduced to powder, filled dry into mold by the machine and then subjected to high pressure to form hard and well shaped bricks." (Suryakanta, et al., 2024).

4. Drying oven

Bricks are placed in an open space with sheds to guarantee airflow and protect the bricks from rain. This process takes about **24 to 48 hours** and when bricks have only 6% of moisture left. (Suryakanta, et al., 2024)

5. Klin and cooling chambers

The bricks are stacked and inserted in **chambers**, first with moderate temperature from **200° to 980° C**, then through high temperature from **870° to 1300°C**, lastly it goes to a cooling chamber, this process can last about **48 to 72 hours**.

6/7. Packaging and delivery

The burnt bricks are stacked and prepared to be delivered, they "generally range between **300-500 bricks per pack**, and weigh between 1-1.5 tonnes. They are commonly stacked and strapped in a self-supporting manner and designed with forklift holes to enable transportation." (Brick development association, 2017, pg. 17)

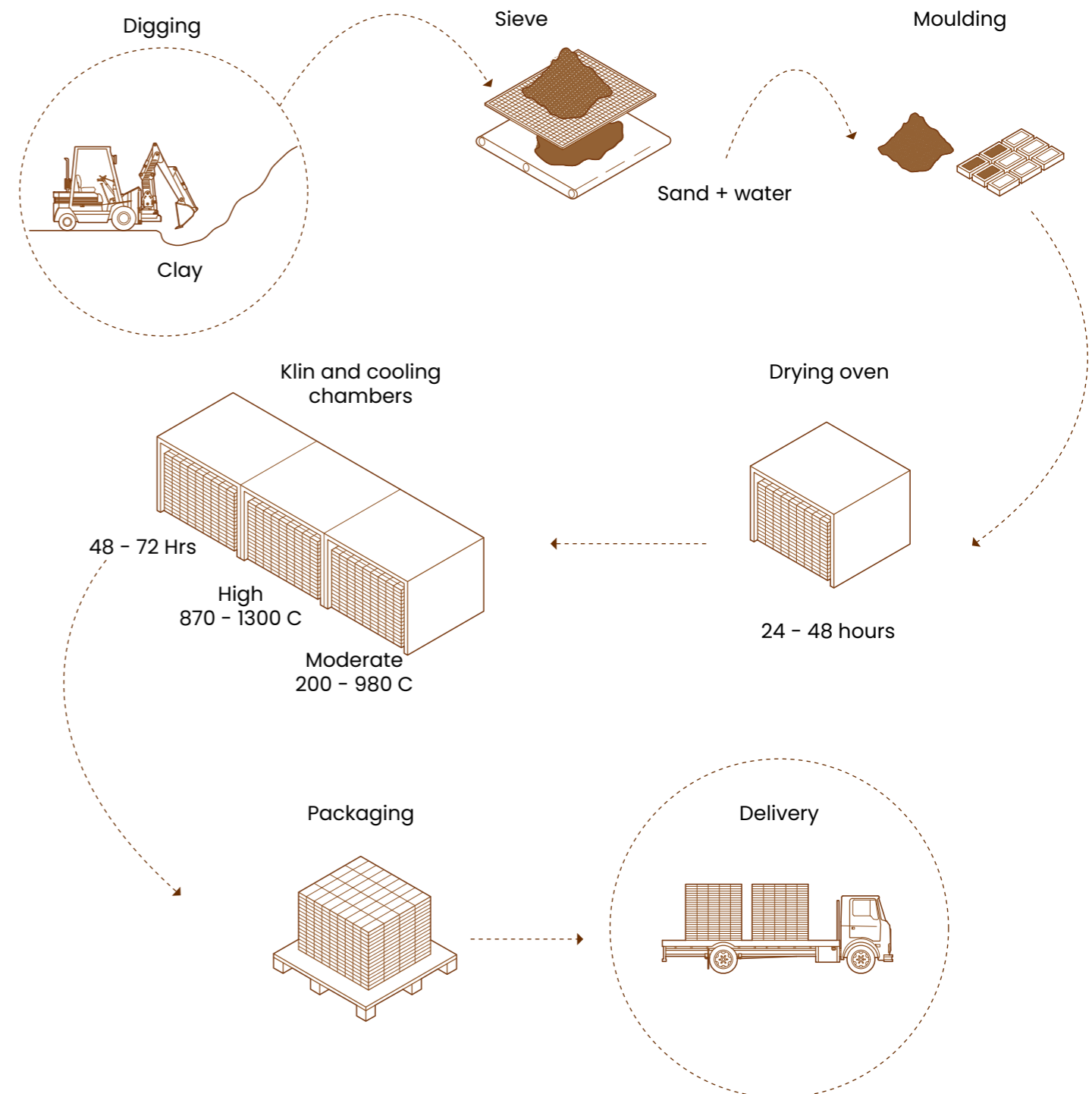


Figure 04
Brick making process icons
Source: : Drawn by the authors, adapted from CivilBlog (2014).

2.5. Wine in Piedmont

Viticulture

Italy is one of the world's leading wine producers, bottling over 50 million hectoliters annually, where 20 million of these are destined for export. Italy is known for its variety of wines, producing **58% white and sparkling wines, and 42% red and rosé** that derives from more than 540 different grape varieties. (Alonzo, n.d.). For maintaining quality and authenticity, the country classifies its wines into:

78 DOCG (Denominazione di Origine Controllata e Garantita)

331 DOC (Denominazione di Origine Controllata)

180 IGT (Indicazione Geografica Tipica)

Exceptional wine, additionally to having these labels, they also may carry the label "superiore," while those from regions with a long winemaking tradition are designated "classico" (Alonzo, n.d.).

Historically, the origins of wine production appears in the 800B.C with wild grapes, but it was the Egyptians around the 3000B.C who started cultivating and domesticating the wine. However the ones in charge for introducing the wine to Italy, were the Greeks, particularly the Mycenaeans, who settled in Sicily and the southern Italy to start a grape cultivation due to the region's perfect climate. The Greeks gave Italy the name of "**Entria**" meaning the "**Land of wine**" (Dante Alighieri de Monterrey, A.C. n.d.). **The Romans**, who inherited the Greek culture of wine making, **perfected this art**, and developed methods that would change and influence the future generations. They discovered that for the wine to taste better, the process of aging was useful, and for this they were the first in using **wooden barrels** and airtight containers to preserve wine. Moreover, the Romans are believed to be **the first who used the cork and glasses of wine**, revolutionizing the storage of wine, establishing the bases for the viticulture and oenology (Dante Alighieri de Monterrey, A.C. n.d.)

Today, Italy's wine culture is recognized worldwide, with regions such as **Tuscany, Veneto and Piemonte**. Tuscany is famous for its Sangiovese-

based wines, including Chianti and Brunello di Montalcino, while Veneto is known for Amarone della Valpolicella and Prosecco (La Piccola Stanza, 2022)

Piemonte on the other hand, located in the northwest of Italy, it's the home of the **Langhe and Monferrato hills**, where vineyards stretch producing some of the country's finest wines.

The popularity of Piedmont in the wine world comes thanks to its **diverse terroir** and unique grape variety. The region is divided by the **Po River into two different viticultural areas between the north and the south**.

In the north of the Po River, the vineyards are located in the **rocky soil of the low Alpine hills**. The challenging terrain and cooler climate creates some limitations but also give the wine of the area an added value. For the conditions of the terroir, the production in this area is way less compared to the **south part of the river which represents about 90% of Piedmont's grape production**.

In this south part of the river, is where **the hills of Langhe and Monferrato are located**, as well as the **city of Alba, that is the heart of Piedmont wine industry**. This area represents about 90% of Piedmont's grape production, and has a high concentration of DOC and DOCG classifications which shows the importances that it has in Italian viticulture. The region is particularly famous for its indigenous grape varieties. The **Nebbiolo grape** for example, is one of the most famous and is known for producing wines such as Barolo and Barbaresco, two very well recognized and appreciated wines that are considered the "kings of Piedmont". (Alonzo, n.d.). There are also other grapes such as **Barbera grape**, that is the most widely planted red variety in the region, and the **Dolcetto grape**, which is often overlooked, but it also plays an important role to the region's wine identity. (Divinus, 2020). Apart from the reds, there are also the white wines such as Moscato that are used to produce the famous "spumante" from Asti, an iconic Italian sparkling wine (Divinus, 2020)

The map provides a more detailed and graphic representation of the various wine-producing areas within the Piedmont region, highlighting the diverse range of DOC (Denominazione di Origine Controllata) and DOCG (Denominazione di Origine Controllata e Garantita) classifications. Each color on the map corresponds to different wine denominations, reflecting the **rich viticultural heritage of the region**.

To the north, areas such as Boca, Ghemme, and Lessona are marked in shades of red, indicating a focus on Nebbiolo-based wines. Moving south, the map shows the heart of Piedmont's wine production, with regions like Barolo and Barbaresco distinguished in brown and green hues, renowned for their powerful Nebbiolo wines. **The map also features the southern areas like Dogliani, noted for Dolcetto wines, represented in lighter shades.**

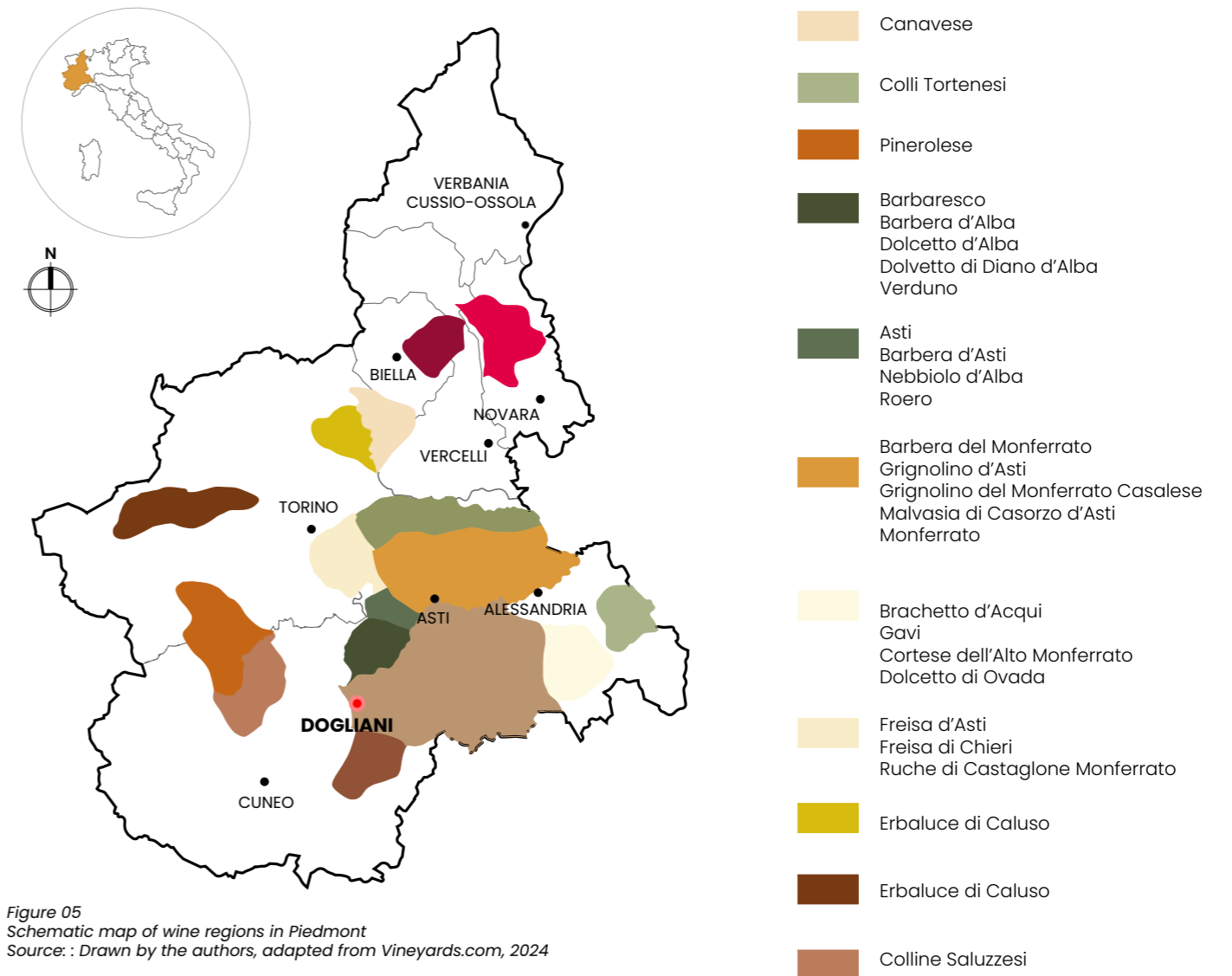


Figure 05
Schematic map of wine regions in Piedmont
Source: : Drawn by the authors, adapted from Vineyards.com, 2024

2.6. The UNESCO site

Langhe-Roero and Monferrato,

The vineyard landscapes of Langhe-Roero and Monferrato hills, located in the Piedmont region of Italy, have been recognized as a UNESCO World Heritage Site since 2014 after their nomination in 2009. (Piemonte Agri, n.d.). **This nomination shows appreciation to the viticultural and cultural heritage of the south of Piedmont, located between the Po River and the Ligurian Apennines.**

The area is composed by **6 main winegrowing regions**: The Langa Baroto, the hills of Barbaresco, Nizza Monferrato and its Barbera vineyards, Canelli and Asti Spumante, and Monferrato degli Infernot, alongside to the historic Castle of Grinzane Cavour. The hills cover more than 10500 hectares across 19 municipalities. (Centre, U. W. H., 2014).

Among the values as cultural landscape that UNESCO recognizes from the Langhe-Roero and Monferrato hills, is an **outstanding example of man's interaction with his natural environment**" (Criterion v) and that it **"provide outstanding living testimony to winegrowing and winemaking traditions"** (Criterion iii) (Centre, U. W. H., 2014)

The region is known also for its traditional farmhouses, wineries, enological industries, and public and private wine shops, all of which

contribute to the area's cultural and economic fabric. **The architectural heritage in the area is characterized by its vernacular structures, which includes the "infernot"** that are small underground chambers carved into the Pietra da Cantoni stone, that have perfect conditions for preserving unique bottles due to their constant temperature and humidity levels. These chambers do not have light or ventilation and have access through a cellar. (Ecomuseo Pietra da Cantoni, n.d.).

To ensure the preservation of these landscapes, they are **safeguarded by the local municipalities, the regional authorities and the Italian Ministry of Cultural Heritage**. The protection of the area is under the Italian Cultural Heritage and Landscape Code, that regulates the land use and the conservation of the natural and cultural heritage, this includes the historic buildings and the traditional farming methods of the region. There are also regional projects such as the First Landscape Plan of Piemonte, established by the **Regional Council with D.G.R n. 53-11975 on August 4, 2009**. This plan recognizes 76 landscapes based on their distinctive characteristics and cultural significance, ensuring that the Langhe-Roero and Monferrato vineyard landscapes continue to thrive as living testimonies of Italy's rich viticultural heritage (Piemonte Agri, n.d.).



Image 12
Langhe - Vineyard landscape
Source: Photo by Valerio Li Vigni, 2015

2.7. The vineyard landscape of Piedmont

Map from UNESCO

The map on the sides shows the “Vineyard Landscape of Piedmont: Langhe–Roero and Monferrato,” and highlights the areas under the Po river that forms part of this landscape. **They are divided into 5 different wine-growing regions, bordered in red: Langa del Barolo, Barbaresco Hills, Nizza Monferrato and Barbera, Canelli and Asti Spumante, and the Monferrato of the Inferno.**

The map also shows the urban areas, roads, and natural boundaries that connect somehow all this landscape. The site's boundaries and buffer zones are delineated to protect the cultural and historical integrity of the viticultural region.

Dogliani, a small town under the region of Langa del Barolo, its also a notable wine production area, but **its not include within the UNESCO sites** designated buffer zones. Nonetheless **it shares many similar characteristics with the recognized regions.** Dogliani, its well known for its production of high quality Dolcetto wines, and it offers a rich viticultural tradition as well as a landscape.










The Vineyard Landscape of Piedmont: Langhe-Roero and Monferrato

P.1e - Map showing all component parts included in the serial property, administrative boundaries and areas covered by vineyards

Components:

1. Langa of Barolo
2. Grinzane Cavour Castle
3. Hills of Barbaresco
4. Nizza Monferrato and Barbera
5. Canelli and Asti Spumante
6. Monferrato of the *Inferno*

Legend

- | | |
|--|---|
|  Core Zone proposal |  Urban areas |
|  Buffer zone proposal |  Highways |
|  Vineyards |  State roads |
|  Provinces |  Railways |
|  Municipalities |  Rivers |

Datum: WGS 1984
Projection: UTM - Zone 32N

0 1 2 4 Km

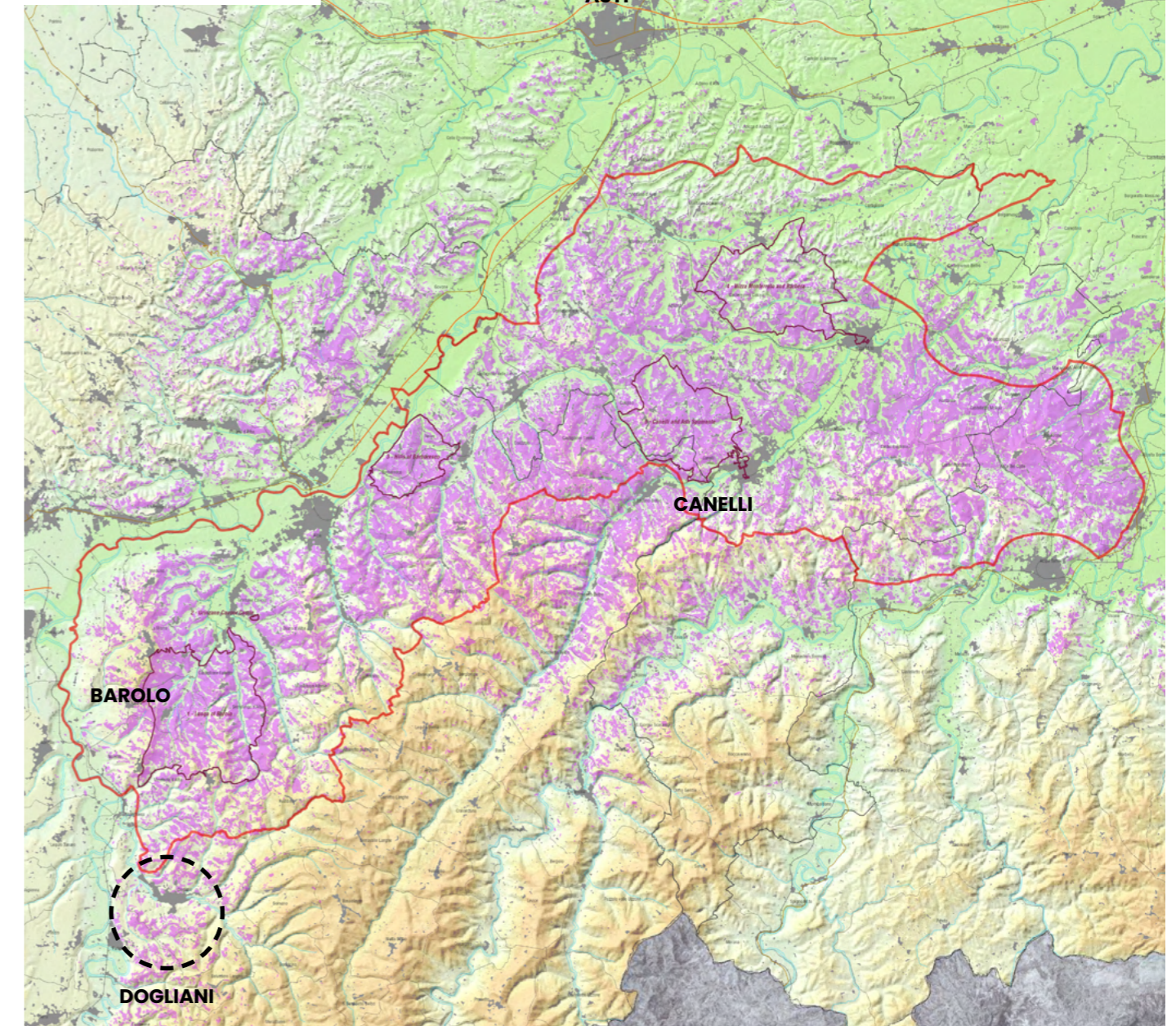


Figure 06
Unesco Map of the “Vineyard landscape of Piedmont”
Source: Map adapted from UNESCO, 2024

2.8. Winemaking process

The process of artisanal wine making focuses on preserving the natural characteristics of the grapes. It doesn't have an established recipe, but it **blends, traditions and personal creativity. It focuses on emphasizing the characteristic and flavor of each grape, and vintage**, resulting in very high quality wines that are the product of the dedication and passion of the winemakers as well as their lands, and traditions. (Guado al Melo, n.d.).

Even though each winemaker brings unique techniques, there are some fundamental steps that need to be followed in order to produce wine. The following process even though it's very generic, it's mainly for red wines, such as **Dolcetto**.

Before each step, it is important to remember that the process of winemaking starts way before the harvesting step, since **the winemakers need to take care of their vine and pay attention to the cultivation** (I Colli Del Sannio, 2019). Once the grape is fully ripe, the process of harvesting starts:

1. Harvesting, "La Vendemmia": This step normally starts in the **middle of August and early September**. The idea is to collect the best grapes, the healthiest bunches in order to proceed the process. (I Colli Del Sannio, 2019)

One interesting fact in this step is that the grapes that are picked too early tend to lack sugar, and sometimes does not taste that much, leading to wines that may taste acidic and that have a "thin body". On the other hand grapes that are collected too late, tend to have too much sugar, and therefore less acidity, resulting in wines that may be too sweet. (Puckette, M., n.d.)

2. Destemming and pressing: Once the bunches of grapes are selected, this next step can be done mechanically or manually. **The goal is to prepare the grape by pressing them for fermentation**, and the winemakers decide whether they want to remove the stems or they want to ferment the grape bunches as a whole. This decision will affect the flavor of the wine. (Puckette, M., n.d.).

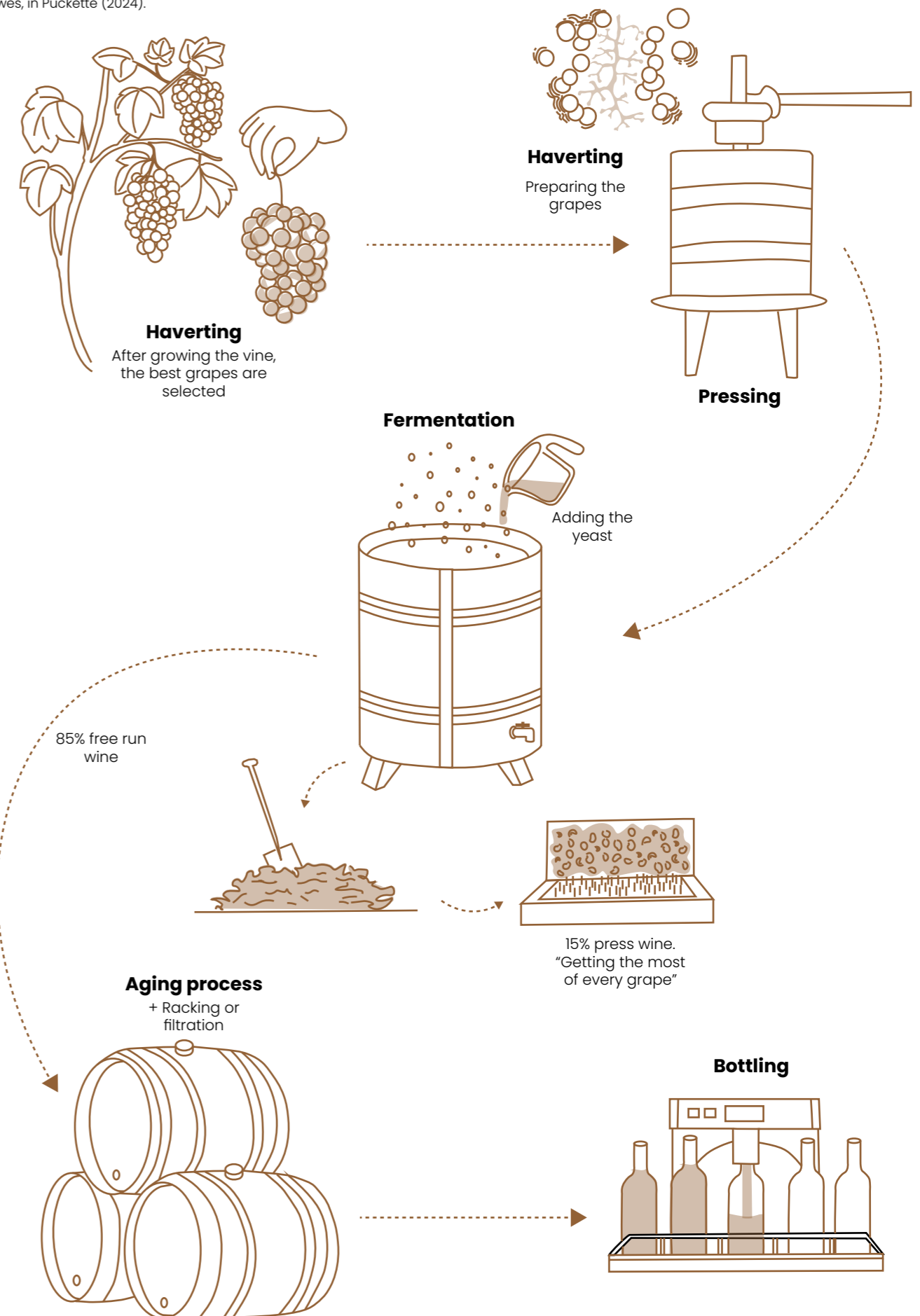
3. Fermentation: In this phase, the must is inside the containers to start the fermentation process. In this step is important **the addition of yeast to the must**, that normally is not added to the whole must but only a small part of it that will be later mixed with the rest. Sometimes, when the cultivation of the vineyard is organic, **the yeast actually comes from a few grapes that were collected way before harvesting and then crushed by hand to create the yeast**. For this step the fermentation temperature is very important, which it's normally **lower than 18°C** in order to form the "cap", or the layer of grape skins and other solids and separate it from the liquid. (I Colli Del Sannio, 2019).

Inside these containers an internal process of Maceration occurs to the wine, which is when the skins are in contact with the juice to extract color, tannins and flavor. In this phase it is also very important **the presence of the winemaker in order to give the right balance and structure to the wine** with techniques that ensure the proper oxygenation and flavor extraction.

4. Aging or maturation: This step happens after the fermentation is complete. **The wine matures in the barrels than can be of wood (small, medium or large) or stainless steel**, and the maturation will be different for each type of wine, the regulations and the choices of the producer. Normally, during autumn, **the process of racking, which is when the wine is separated from the lees, or its sediments from the bottom of the barrel**, occurs. (Boroli, 2024). Like a filtration process to remove any impurities.

5. Bottling: In this final step the wine is filtered and again bottled after the maturation is complete. **For some wines that are meant to be consumed young this is the final step**, however **for others it's just the beginning of the new aging period** inside the bottle. This can be from 6 months to 2 years. (Boroli, 2024)

Figure 07
Wine making process
Source: : *Drawn by the authors*, adapted from an illustration by Jelle Theeuwes, in Puckette (2024).



2.9. Dogliani

location

Dogliani is located in the region of Piemonte, Italy, specifically in Cuneo, and it's considered the capital of southwestern Langhe, strategically position between Barolo and Alta - Langa **wine regions**

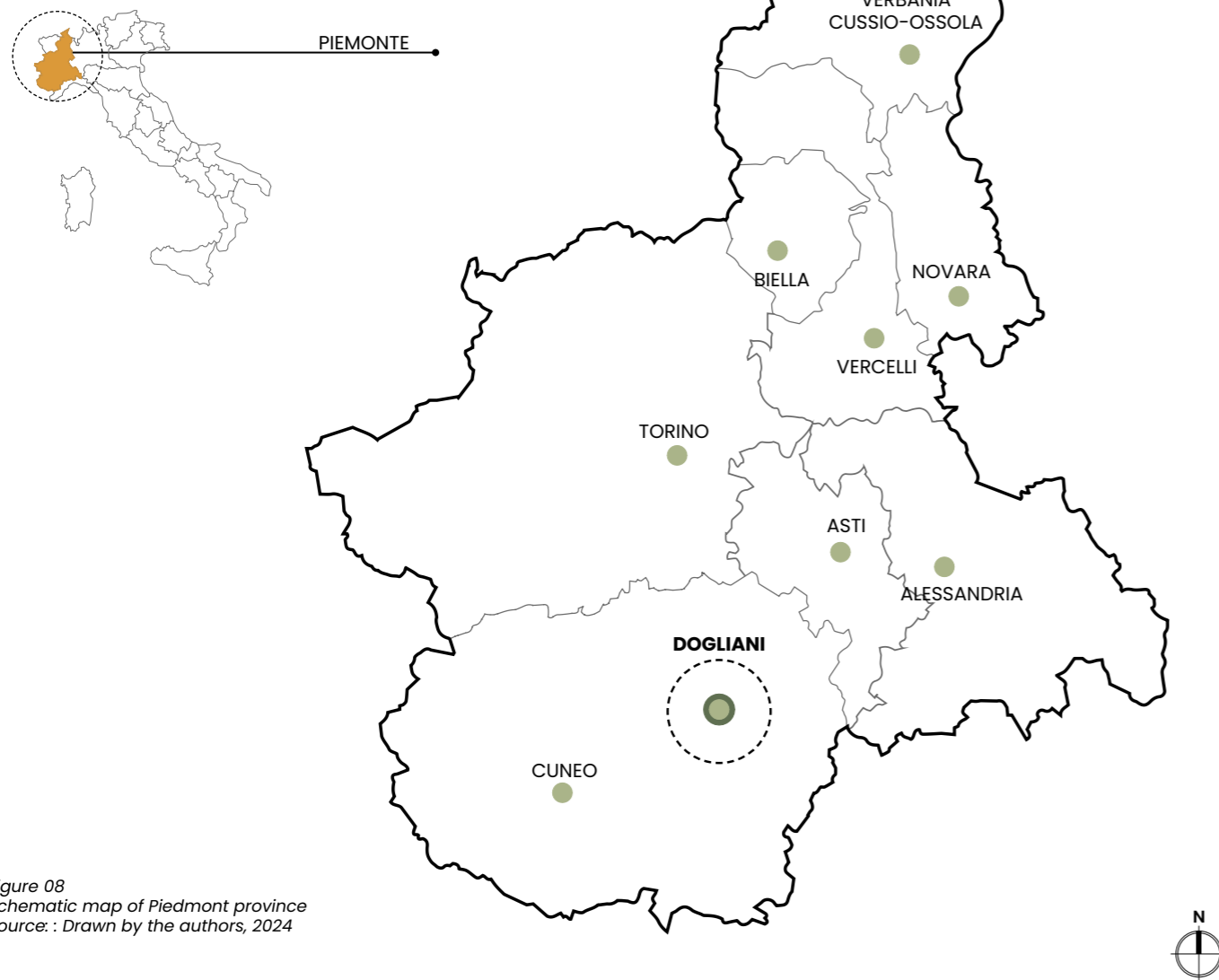


Figure 08
Schematic map of Piedmont province
Source: : Drawn by the authors, 2024

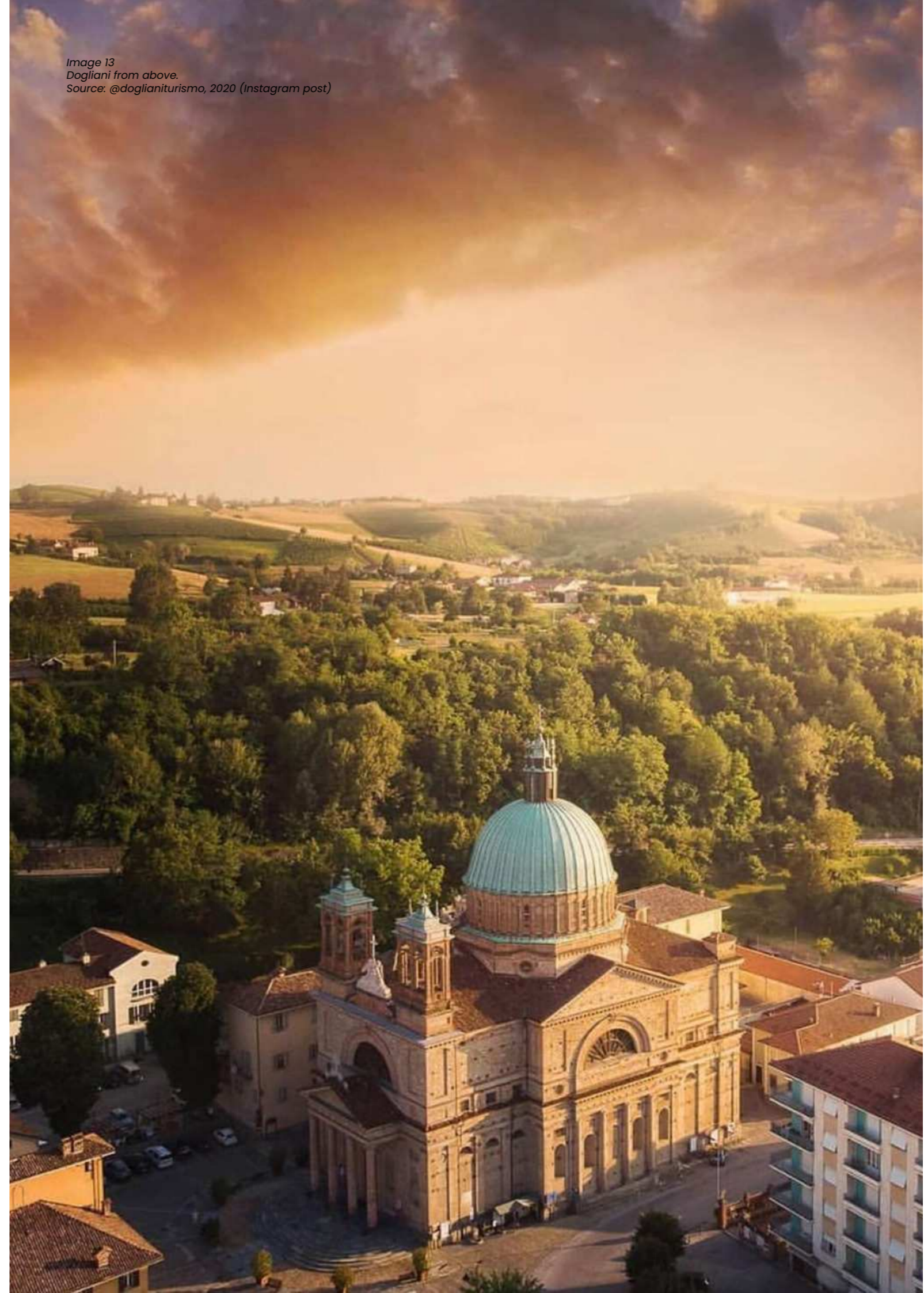
The town is divided into two areas: the Borgo, situated in the valley, with a mix of residential and commercial uses, divided by a River and the Borgo Castello, in the more elevated part of the town (around 300mt.s.l.m) which nowadays shows its historical evolution. (GlocalWeb SRLS., (n.d))

Most of the appearance of the town in terms of architecture is thanks to **Giovanni Battista Schellino**, who shaped the urban landscape. He revitalized Dogliani in the 19th century with several key projects, such as the Parish Church of Saints Peter and Paul, the monumental entrance to the cemetery and the Ritiro Sacra Famiglia. (GlocalWeb SRLS., (n.d))

The development of the town and its **cultural richness** have also been influenced by **Luigi Einaudi**, economist and the first President of the Italian Republic, who played a key role in **promoting the cultivation of Dolcetto wine in the region**. His emphasis on sustainable agricultural practices and economic self-sufficiency has had a lasting impact on Dogliani's wine making culture. (GlocalWeb SRLS., (n.d))

Today, Dogliani not only preserves its historical charm but also serves as a gateway to exploring the Langhe region's wine and culinary heritage. Its historical significance, combined with its wine culture, makes it a worthy destination for both cultural enthusiasts and wine lovers.

Image 13
Dogliani from above.
Source: @doglianiturismo, 2020 (Instagram post)



2.10. History

Dogliani

Dogliani has its origins back to the 1st century B.C., when the Romans established settlements in the area. Prior to this, Ligurian and Celtic populations inhabited the region, but the town really started to develop under Roman rule between the 1st and 2nd centuries A.D.

The first document that mentions Dogliani, with the name of "Doglianus", dates back to **967 A.D.** (Archivio di Stato di Torino, 1996). The town's urban organization demonstrates its medieval past, with castles on top of the hills and the village below surrounded by fortifications, with two ancient gates, **Porta Soprana and Porta Sottana**, that still mark the boundaries of the medieval core. At this period of time, Dogliani shifted control from the **Counts of Alba** to the Aleramici of Vasto, and eventually to the **Marquises of Busca and by 1198**, Dogliani had become a fief of the of this **noble family** (Giorgio, 2005). By the 12th century, Dogliani had gained some municipal autonomy through various treaties.

In **1414**, during the renaissance period, the region came under the control of the **House of Savoy** (Martina, 2010). By **1580**, the construction of several churches and important structures marked Dogliani's architectural development (Rossi, 2003). During this period, the town also experienced a political strife, with factions aligned with the **Monferrato, Saluzzo, Acaia, and Visconti** families. Later in the **16th century**, Dogliani was first occupied by the French, then by the Spanish, as part of the conflict between **Francis I of France** and **Charles V of Spain** over European dominance. Following the **Treaty of Lyon in 1601**, Dogliani passed to the Savoy family, which granted it as a fief to the **Solaro families of Moretta and Borgo**.

In **1796**, **Napoleon's troops** occupied Dogliani during his Italian campaign (Bianchi, 2018). In the **19th century**, the town saw a

resurgence, largely due to the influence of **Camillo Benso, Count of Cavour**, who promoted the cultivation of the **Dolcetto wine, boosting the local economy** (Ferrero, 2015). During this time, **Giovan Battista Schellino (1818-1905)**, an influential architect, **transformed Dogliani with his eclectic style**, leaving a lasting architectural legacy. Schellino's designs gave Dogliani an unmistakable monumental character that still captures attention today.

In the **1920s**, Dogliani's **ceramics industry began to flourish, with the Fornace Gaiero becoming a prominent player** (Mariani, 2020). During World War II, Dogliani played a crucial role in the **resistance against Nazi forces**. A significant event occurred on **July 31, 1944**, when a military aircraft dropped several bombs on the town, killing 28 civilians and destroying numerous buildings (Lombardi, 1994). The next day, Nazi-Fascist troops conducted a round-up in Dogliani, which they viewed as a partisan stronghold.

After the war, Dogliani returned to **its agricultural roots, remaining an important trade hub**. While local crafts grew, the town's economy remained primarily based on farming.

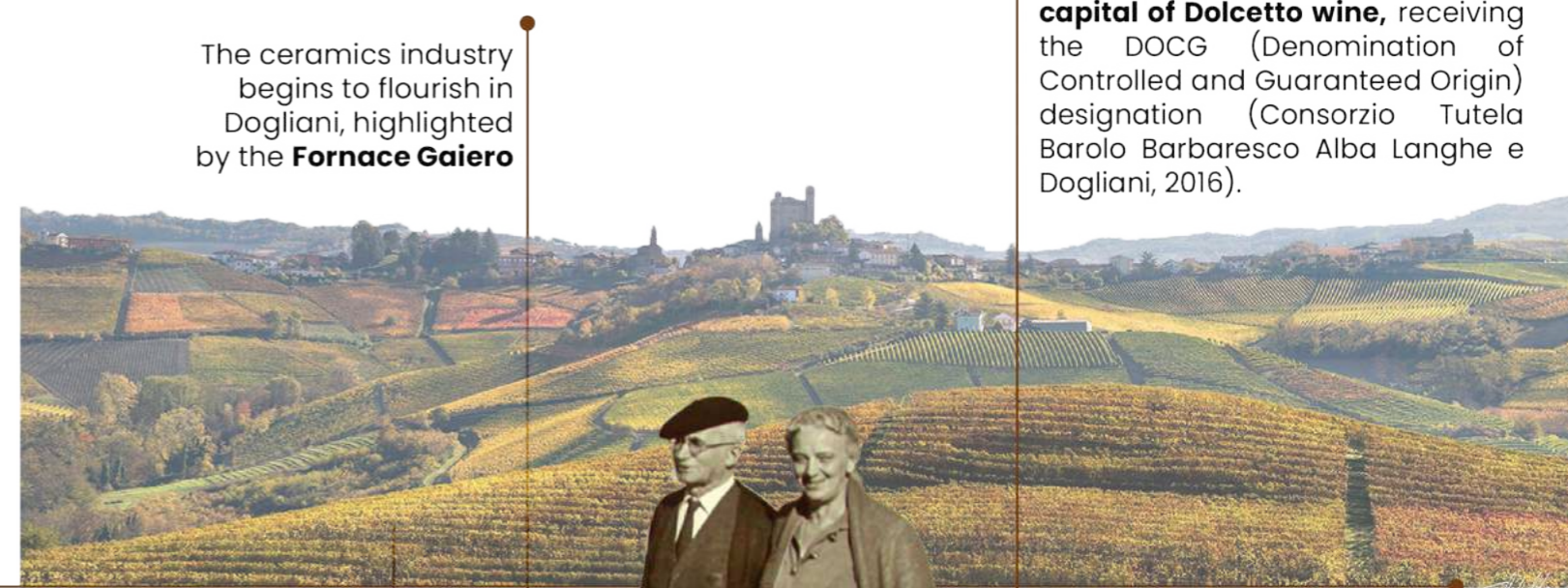
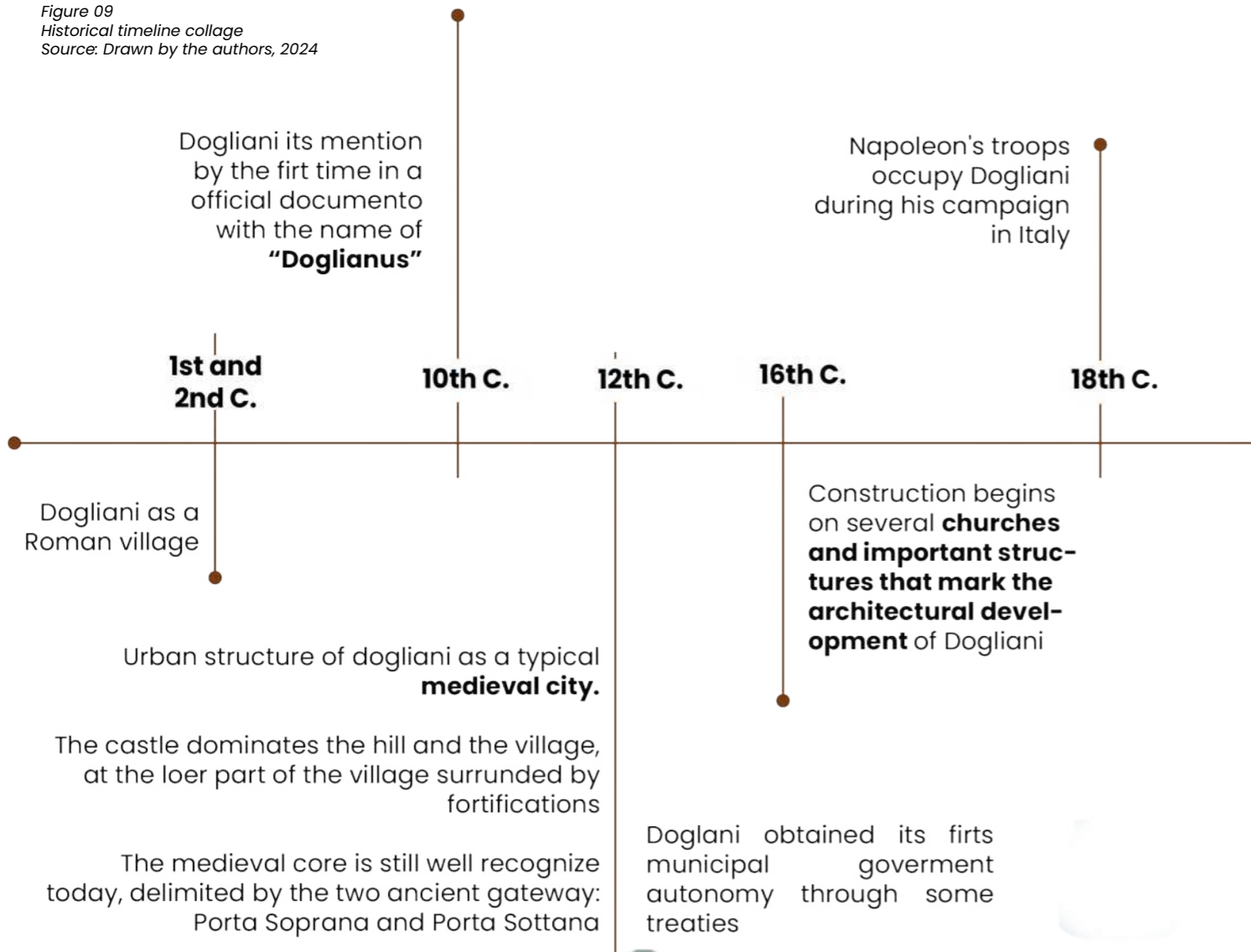
In **2003**, Dogliani was officially **recognized as one of the capitals of Dolcetto wine**, receiving the prestigious **DOCG (Denominazione di Origine Controllata e Garantita)** status (Consorzio Tutela Barolo Barbaresco Alba Langhe e Dogliani, 2016). This achievement reflects the legacy of local winemakers who, inspired by the teachings of **Luigi Einaudi, Italy's first President**, continued to invest in the quality and production of their vineyards and wineries. Einaudi famously emphasized the importance of reinvesting in the land and preserving rural heritage. Today, Dogliani's winemakers honor this tradition by maintaining a strong presence in the world of quality wines.



Image 14
Old image of Dogliani
Source: Levene, D. (n.d.)

2.10.1 Timeline

Figure 09
Historical timeline collage
Source: Drawn by the authors, 2024



The ceramics industry begins to flourish in Dogliani, highlighted by the **Fornace Gaiero**

Dogliani is officially recognized as a **capital of Dolcetto wine**, receiving the DOCG (Denomination of Controlled and Guaranteed Origin) designation (Consorzio Tutela Barolo Barbaresco Alba Langhe e Dogliani, 2016).



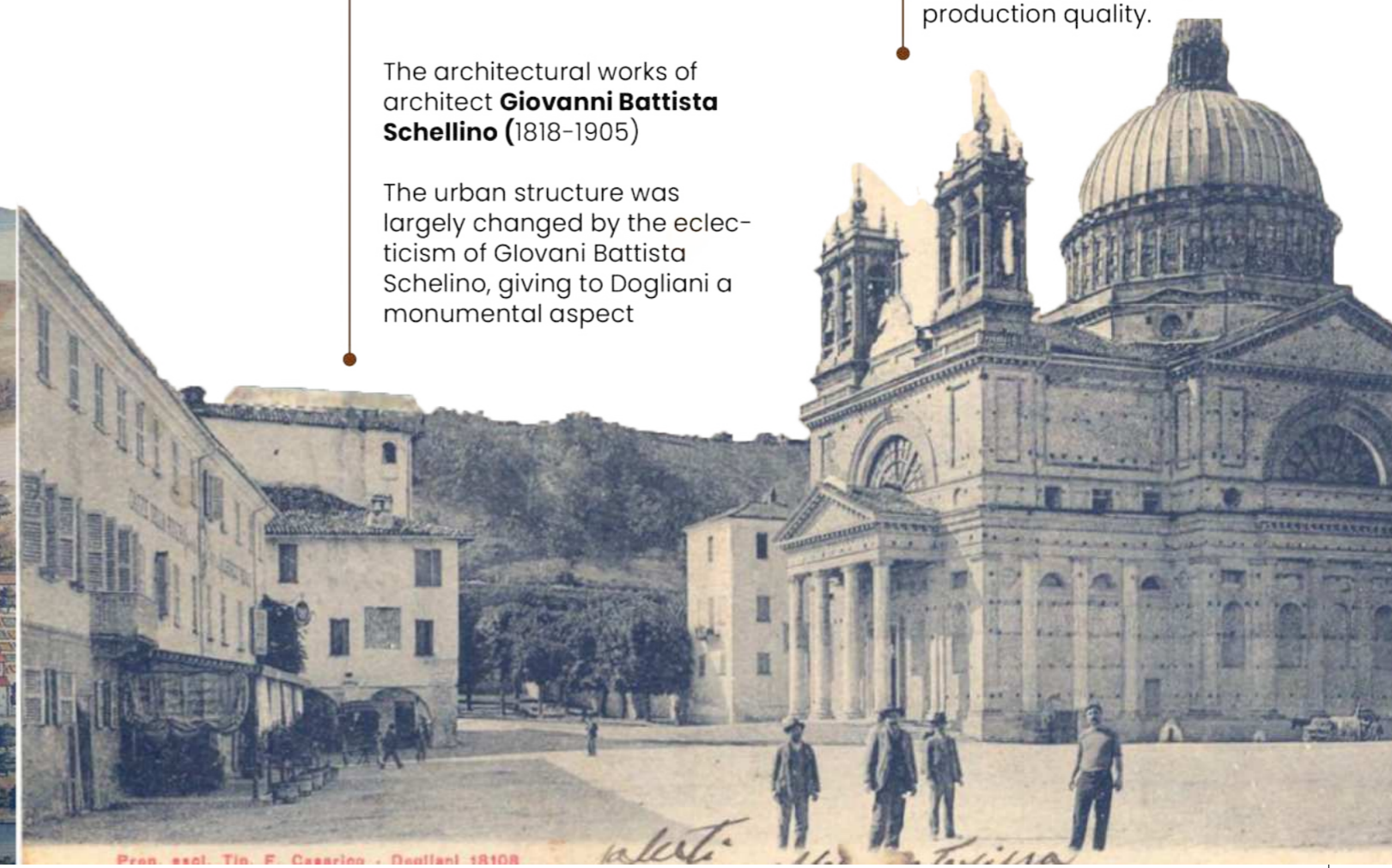
19th C. 20th C.

Camillo Benso, Count of Cavour, promotes the **cultivation of Dolcetto wine** in Dogliani, boosting the **local economy** (Ferrero, 2015).

21st C.
The teachings of **Luigi Einaudi**, ex President of Italy, emphasized investing in and improving **vineyards and rural properties**.
Dogliani's winemakers follow the principles of Einaudi, investing wine cellars to enhance production quality.

The architectural works of architect **Giovanni Battista Schellino (1818-1905)**

The urban structure was largely changed by the eclecticism of Giovanni Battista Schellino, giving to Dogliani a monumental aspect

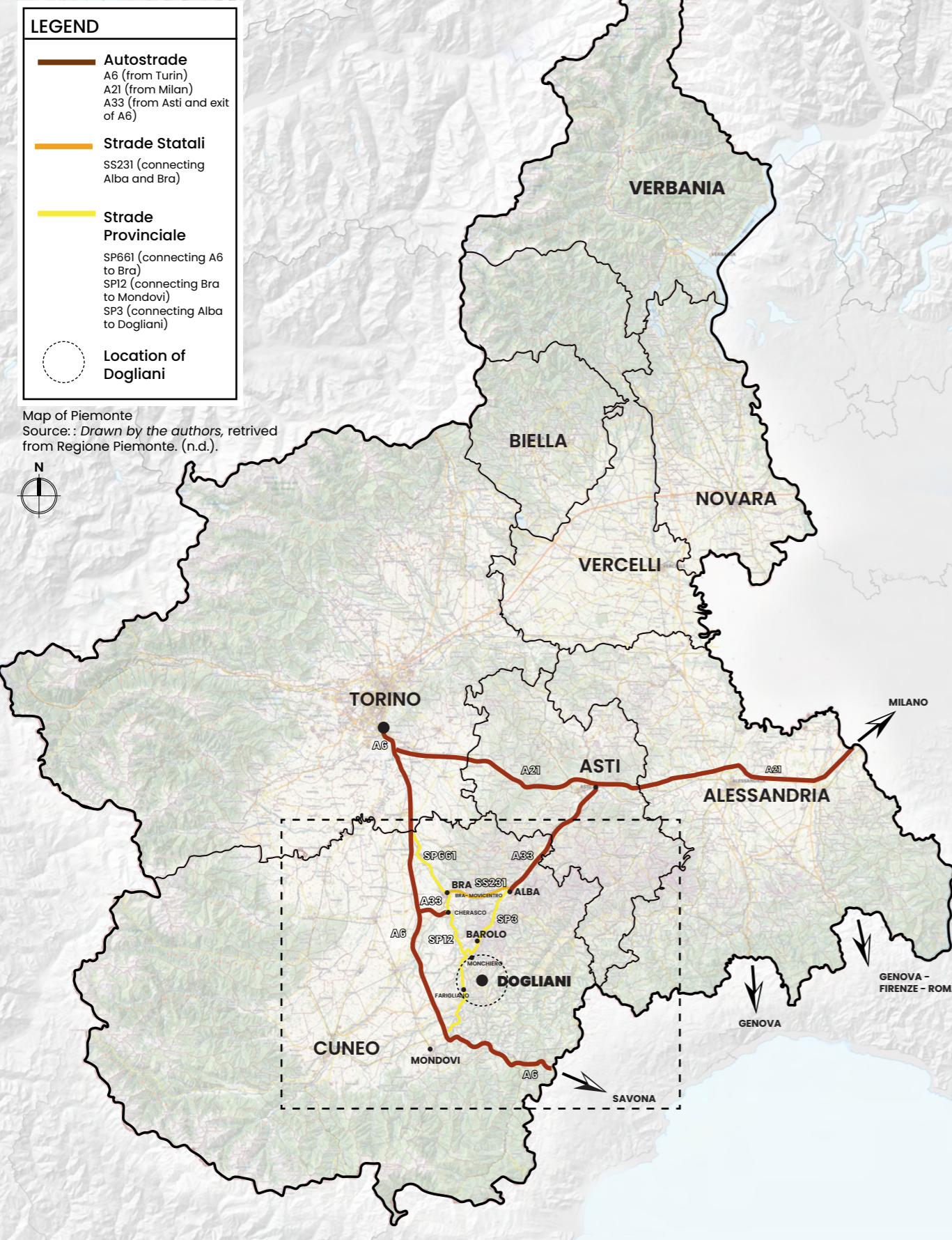


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2.11. Urban analysis

2.11.1 Mobility and accesibility

Map 1 - Regional accesibility



Dogliani, despite being a small town well-connected to nearby areas, is **harder to reach due to the lack of a train station** linking it directly to the rest of the country. This could be a factor affecting tourism in the region

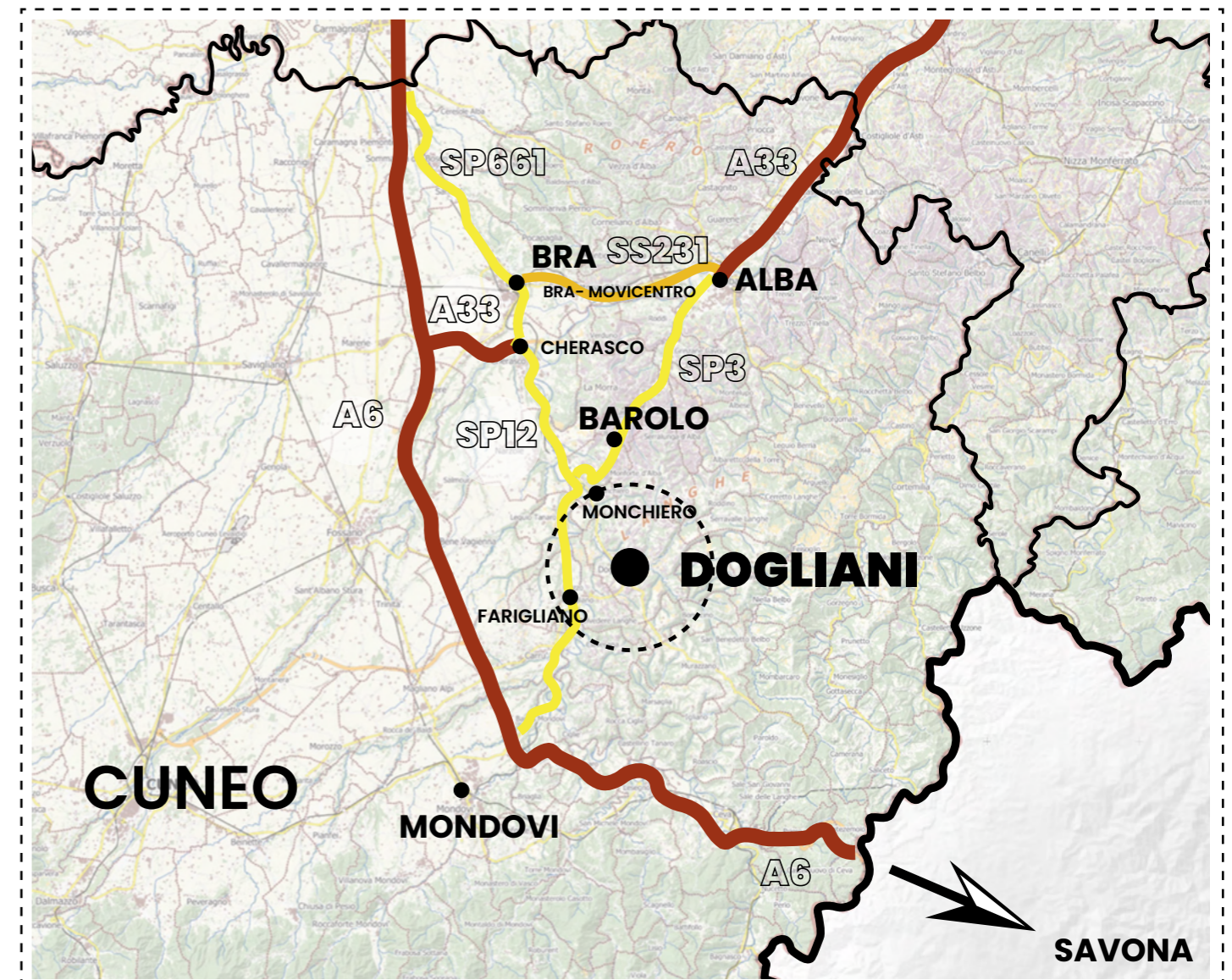
By car, it is possible to reach Dogliani from several major cities in Italy. From Turin, you can take the **A6 highway** (TO-SV) towards Cherasco and **exit at A33**. Then, follow the signs for Dogliani, continuing along **Strada Provinciale 12** and Strada Provinciale 661 for about 15 kilometers.

From Savona, take the **A6 highway** (TO-SV) towards Mondovì, exit the **A6/E717** towards Dogliani, driving 10 kilometers to Farigliano and then another 5 kilometers to reach Dogliani.

From Milan, take the **A21 highway** (TO-PC), exit at Asti East, and follow towards Cuneo-Alba through Statale **SS 231**, passing through Barolo, Novello, and Monchiero, then drive the last 5 kilometers to Dogliani.

Public transport connections are less direct. From Turin, you can take a **train from Porta Susa** station to **Bra Movicentro** (a 50-minute ride), and then a bus to Dogliani city center, which takes about 40 minutes.

From **Savona**, you can take a **train to Ceva or Mondovì** and then connect with two buses to reach Dogliani. Dogliani Turismo, 2024)



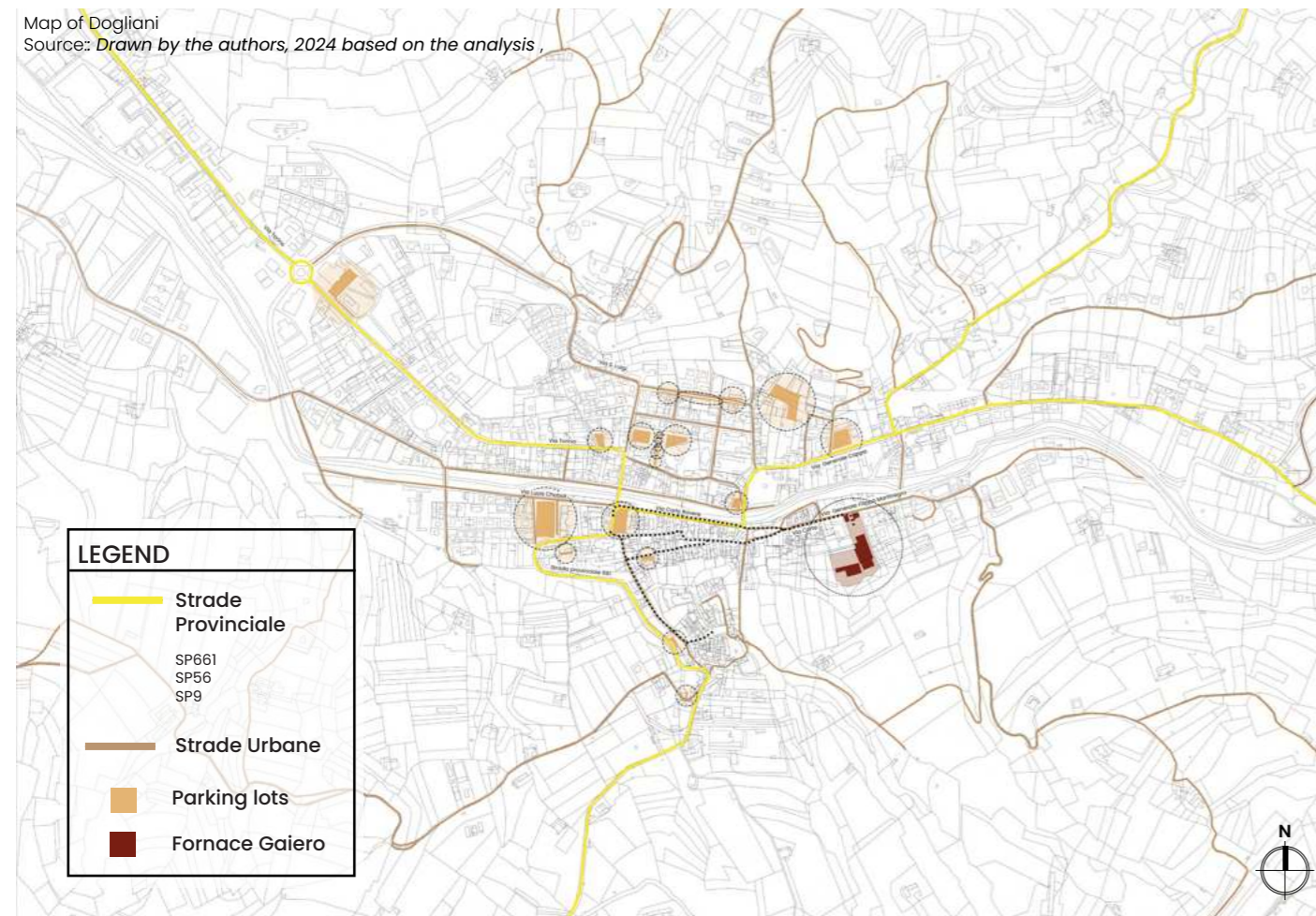
2.11.1 Mobility and accesibility

Dogliani has several main roads, including the **Strada Provinciale 661**. The town center is very compact and mostly pedestrian-friendly, offering a pleasant walk with several points of interest nearby. The Fornace Gaiero, an important landmark, is located close to the historic center, which makes it more accessible from both the town and neighboring villages.

Additionally, there are several parking areas available, but many are concentrated in the outskirts and residential areas of Dogliani. These parking spaces seem to belong mostly to private buildings, such as residences or offices.

The few public parking spots near the center are mostly located near churches or along the streets. Outside of the pedestrianized town center, there is little activity or mobility, especially when accessing the Fornace Gaiero. Visitors would have to walk approximately 10 minutes from the town center or about 20 minutes from Borgo Castello to reach it.

Map 02 – Local road and parking

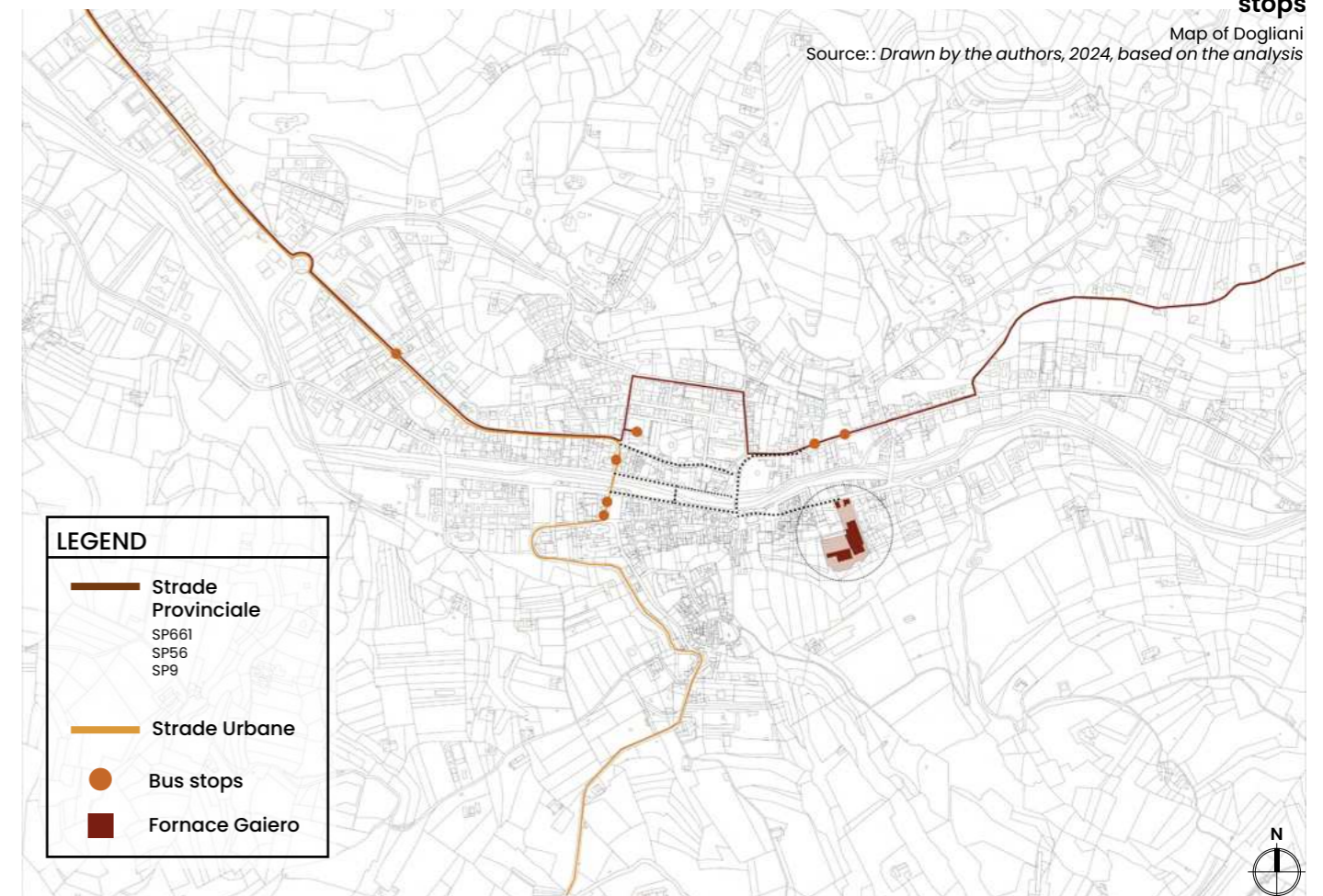


Focusing specifically on the town of Dogliani, there are **seven bus stops** that connect the town with nearby areas such as Alba, Bra, Mondovì, and Cuneo, as well as other surrounding villages. The buses that pass through the town connecting it with the other nearby areas are **Bus 2172** which connects with Barolo and Alba and **Bus 415** which connects with Bra, a good choice after taking the train to Bra. The cost of these buses are of about **5.20 euros**.

However, Dogliani lacks an internal public transportation system, which makes it difficult for both residents and visitors to move around easily within the town. People either use their car, walk, or use their bikes.

To arrive to the Fornace Gaiero from the bus stops, it is necessary to do a **10-15 minutes walk**.

Map 03 – Local transport and bus stops



2.11.2. Demography

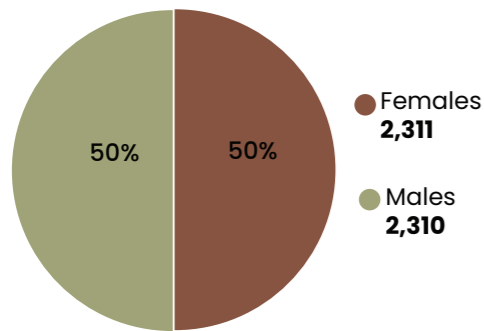
The population of Dogliani, by the 1st of January of 2024, was **4,621 residents**, according to data from the Istituto Nazionale di Statistica (ISTAT). Covering an area of 35.68 square kilometers, the town's population density is approximately 129.5 people per square kilometer. In terms of gender, the population splits almost evenly between males (2,310) and females (2,311), and is relatively older since the most number of residents is over 50 years. (Tutti Italia, n.d.)

The **largest age group is between 50 and 59 years** (742 people). This is followed by the 60-69 age group (654 individuals), and then 40-49 age group (596 people). With this, it can be assumed that Dogliani has an aging population. Children and young people on the other hand (aged 0-17) compared to the aging population are a smaller part of the population, about 6.77%.

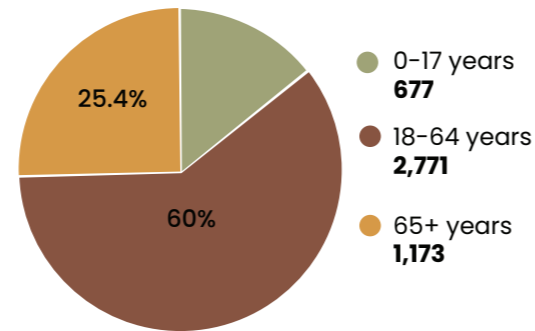
The population between 18-64 years, that can also be considered the working population, is of about 2,771, but it has a higher concentration of older residents, suggesting that this group can reduce the younger labor in the future. The elderly population (65+) is about 1,117 people. (City Population, n.d.)

If we compare the early years in Dogliani from 2001 to 2022, we can see that **the population has declined over the years**. More older people stayed, and few younger people remained in Dogliani. (Tutti Italia, n.d.) This happened mainly because in these rural parts of Italy, there are **limited economic opportunities**, making the younger residents move to bigger cities, in this case to Torino for example with more opportunities to grow.

Graph 01. Gender distribution
Source: Drawn by the authors, 2024 based on Tutti Italia (n.d.)



Graph 02. Age distribution based on City Population (n.d.)



Graph 03. Age pyramid
Drawn by the authors, 2024 based on Tutti Italia (n.d.)

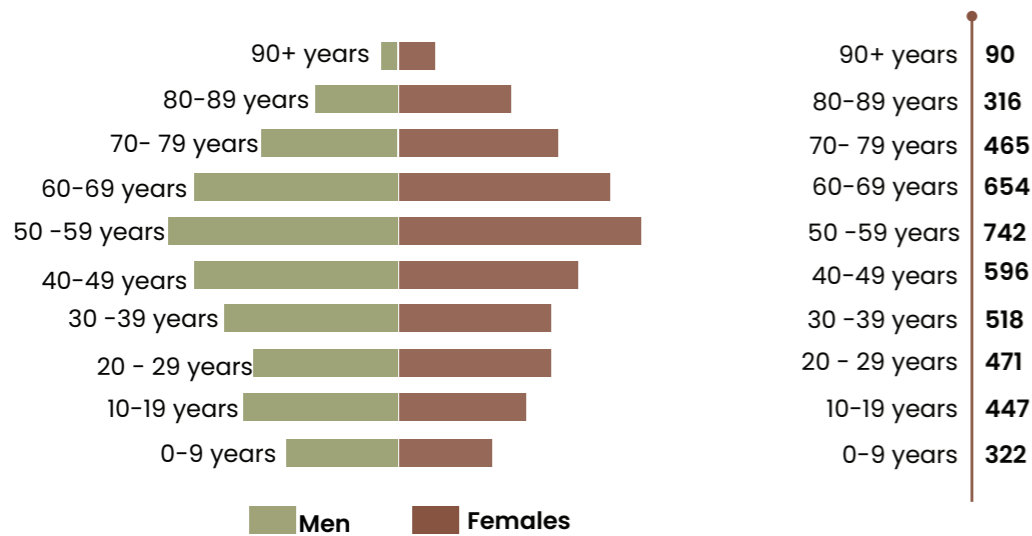


Image 15
Piazza S. Quirico
Source: Photo by the authors, 2024

2.11.3. Tourism: Architecture and Schellino

Dogliani hosts several events throughout the year, such as the Plum Festival, the Festival della TV, and the Cistrà Festival. Additionally, visitors can enjoy a variety of local events and markets. **Dogliani is also renowned for its wine, particularly the Dolcetto, making it an attractive destination for wine enthusiasts.** Visitors can partake in **vineyard tours** and explore the **hazelnut fields**. The town also offers various forms of entertainment, such as a cinema, an ice-skating rink, swimming pools, sports facilities, and a multi-functional auditorium.

Dogliani is home to many **historical and artistic landmarks worth visiting**. One of these is the **Luigi Einaudi Public Library**, founded in 1963 thanks to a donation from Giulio Einaudi, in honor of his father, who had passed away two years earlier. According to Dogliani Turismo, "Promoted by noted intellectuals, today the library is not only a place for borrowing books, but it is also an extremely active cultural center, hosting cultural events and writers throughout the year" (Dogliani Turismo, 2024).

Another notable site is the **Big Bench**, located in Piazza Belvedere in Borgo Castello. This symbol of Alta Langa was created by the Big Bench Community Project (BBCP) as an initiative "to support local enterprise, tourism, and craftsmanship in the towns that host these out-of-scale installations" (Dogliani Turismo, 2024).

The Lover's Bench, also known as the Booklovers' Bench, was designed by Beppe Leardi and is situated in the garden of the Luigi Einaudi Library. It was created for people to sit on the same bench while facing each other, fostering connection through conversation and reading. As Leardi reflected, "I was enthusiastic, satisfied, thinking that my father and my grandfather could have sat on one of them, enjoying each other's company" (Dogliani Turismo, 2024).

Dogliani's **Palazzo Municipale**, located on the site of the former Carmine Convent built in 1480, was restored by Schellino in the 19th century. Today, it houses the town hall, the **Bottega del Vino**, the Luigi Einaudi Museum, and the **G. Gabetti Archaeological Museum** (Dogliani Turismo, 2024).

The **Confraternità dei Battuti** is a Baroque church recognized as a National Monument. It contains two restored paintings, a statue of the "Addolorata" sculpted by Roascio, and a Baroque organ from the 1700s.

Porta Soprana, one of the original four entrances to Dogliani, features an ogival arch adorned with frescoes of the municipal and Savoy family coats of arms. Restored in the early 21st century, it now serves as the gateway to the pedestrian path leading into the city center (Dogliani Turismo, 2024). On the other hand, **Porta Sottana**, a simpler arch, marks the exit from the town and connects Piazza Umberto I, the Confraternità church, and various important streets and squares (Dogliani Turismo, 2024).

Lastly, the **Theater of the Holy Family** in Borgo Castello is located in the basement of the Holy Family complex, in a scenic area with exposed brickwork. With only 70 seats, it is one of the smallest theaters in Italy. In 2017, it hosted important architects and artists during the 200th anniversary of Schellino's birth (Dogliani Turismo, 2024).

Giovanni Battista Schellino

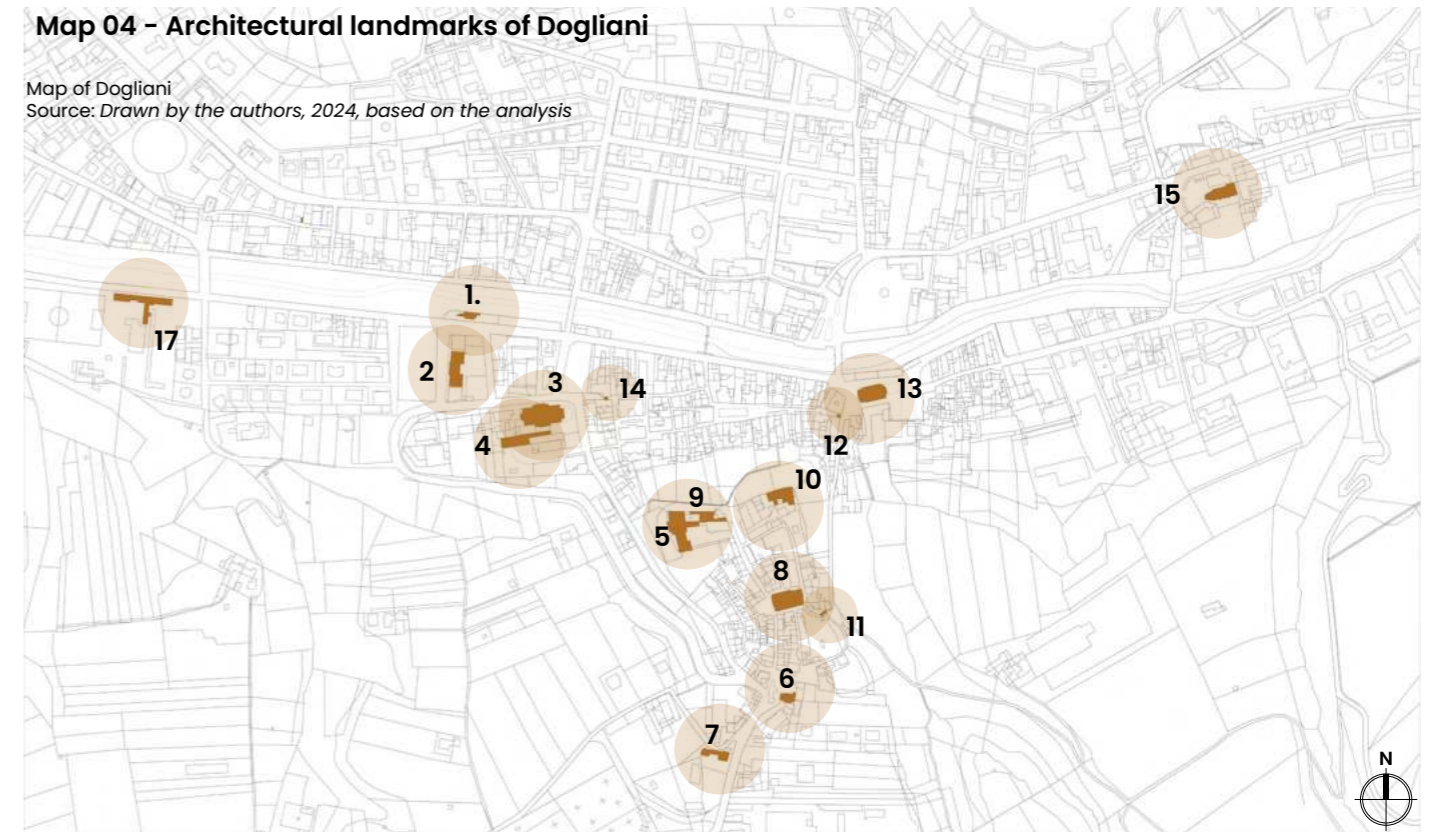
Giovanni Battista Schellino had a **great impact on Dogliani's architecture**, giving the town a particular appearance. "With his works he shaped the face of this town giving it a monumental appearance" (Dogliani Turismo, 2024). Had a unique style that combined elements from different architectural period, **neoclassical domes, neo-gothic spires, and medieval towers**. (Dogliani Turismo, 2024). In his masterpieces he "handcrafted bricks adorned with symbols such as the alpha and omega, wrought iron gates, friezes, and crosses enliven the entire complex, containing the tomb of Luigi Einaudi, first President of the Italian Republic (...) an irresistible call to admire the creativity of the "Gaudi of the Langhe". (Langhe Monferrato Roero, 2024). This type of construction was unusual for the Langa region which has a more traditional design.

Schellino is a self-taught architect that did not follow the architectural rules of that time, "**distinguish Dogliani from all other towns of the Langhe since the eclecticism of this urban planner gave this town unusual corners** so different from the styles and the tastes of the period." (Dogliani Turismo, 2024).

These creations can be appreciated in the public squares and public buildings that were considered uncommon for the 19th century.

Map 04 – Architectural landmarks of Dogliani

Map of Dogliani
Source: Drawn by the authors, 2024, based on the analysis



1. **Biblioteca Civica** L. Einaudi. Centro Cultural

2. **Ospedale Civico (1878/88)**. Work of **G.B. Schellino** dedicated to the mayor Ettore Manzi, who's bust in on the facade

3. **Parrocchia SS. Quirico e Paolo (1959/70)** Biggest work of **G.B. Schellino**, neoclassical greek cross.

4. **Palazzo Municipale (1478)**. Old Carmine convent. Restored by the architect **G.B. Schellino** the building hosts on the first floor the Municipality and the Archeology Museum; and on its cellars the "Bottega del Dolcetto di Dogliani"

5. **Ritiro Sacra Famiglia (1883)** Work of **G. B. Schellino**. one of the most detailed and rich of architectural elements.

6. **Cappella dell'immacolata e di S. Giuseppe (1870/1890)** Work of **G.B. Schellino**. The building has a Greek style with the doric order and a dome on top with a facade that resembles the Pantheon.

7. **Ingresso Monumentale Al cimitero (1867)** Work of **G.B. Schellino**, with a neoclassical style.

8. **Chiesa di S. Lorenzo (fino 800)**. Reconstructed on the perimeter of the ancient Romanesque parish church, of which the apse and the sandstone bas-relief on the entrance portal remain visible. A relic of St. Celsus, patron saint of Dogliani, has been preserved.

9. **Piazza Belvedere**. Panoramic point besides the Civic Tower and the Perno Castle

10. **Torrione e Castello di Perno (Civic Tower and Perno Castle)**. The tower has a medieval origin, and the Castle is more recent from the XVI century.

11. **Porta Gabetti**: From the medieval era, this entrance was part of the defense wall that surrounded a Castle that was destructed in the mid. 500

12. **Porta Soprana**. Ogival arch is surmounted by a fresco reproducing the municipal coat of arms on one side and that of Savoy on the other.

13. **Chiesa della Confraternita o dei Battuti (1721)**. Baroque church design by the architect F. Gallo

14. **Porta Sottana**. From the medieval era.

15. **Chiesa di S. Quirco**. Sanctuary dedicated to the Virgin Mary, designed by **G. B. Schellino** on the perimeter of the old parish church from the XII century

16. **La Pieve (year 1000)** The oldest church of Dogliani. What we see nowadays is the reconstruction of it in the XVIII century.

17. **Circolo Sportivo**.



Image 16
Biblioteca Civica (1)
Source: Dogliani Turismo, 2024



Image 17
Ospedale Civico (2)
Source: Dogliani Turismo, 2024



Image 22
Piazza Belvedere (9)
Source: Photo by the authors, 2024



Image 23
Torrione e casa castellana dei Perno di Caldera (10)
Source: Dogliani Turismo, 2024



Image 18
Parrocchia SS. Quirico e Paolo (3)
Source: Dogliani Turismo, 2024



Image 19
Palazzo Municipale (4)
Source: Dogliani Turismo, 2024



Image 24
Porta Soprana (12)
Source: Photo by the authors, 2024



Image 25
Porta Sottana (14)
Source: Photo by the authors, 2024



Image 20
Retiro/Teatro Sacra Famiglia (5)
Source: Dogliani Turismo, 2024



Image 21
Monumental entrance to the cemetery (7)
Source: Dogliani Turismo, 2024



Image 26
Confraternità church (13)
Source: Dogliani Turismo, 2024



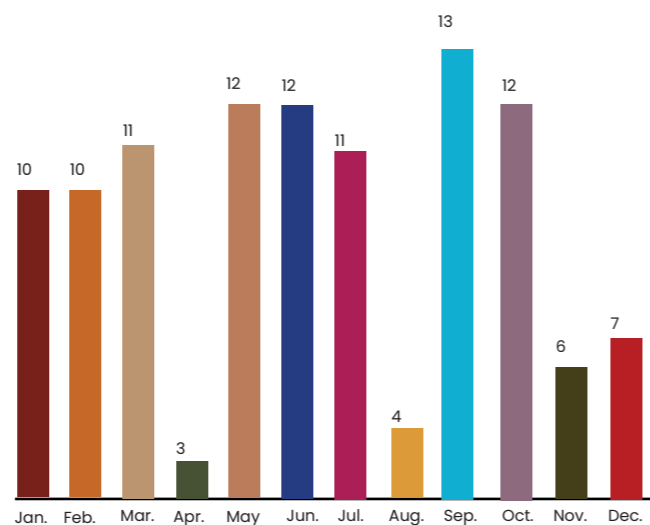
Image 27
Agroturismo La Pieve (16)
Source: Booking.com. (n.d.)

2.11.3. Tourism: Events and activities

Beyond the city's well-known places of interest, numerous events and activities take place **throughout the year**. Understanding the **timing and location** of these events is crucial for analyzing patterns of **human movement and urban agglomeration**.

Event **calendars** provide a month-by-month breakdown of what takes place and where, offering valuable insights into how different areas of the city are activated at various times. Also understanding the **number of activity per month** let us understand which month of Dogliani is more active (September) and which one is more inactive (April). This information, paired with **mapping tools**, allows for a visual representation of event distribution across the urban landscape, highlighting potential points of interest for urban design, public space planning, and the study of pedestrian flows.

In general Dogliani has activities every month and is very active to society, and its distributed mainly along the River towards Borgo Castello



Number of activity per month

Graph 04. Activities per month

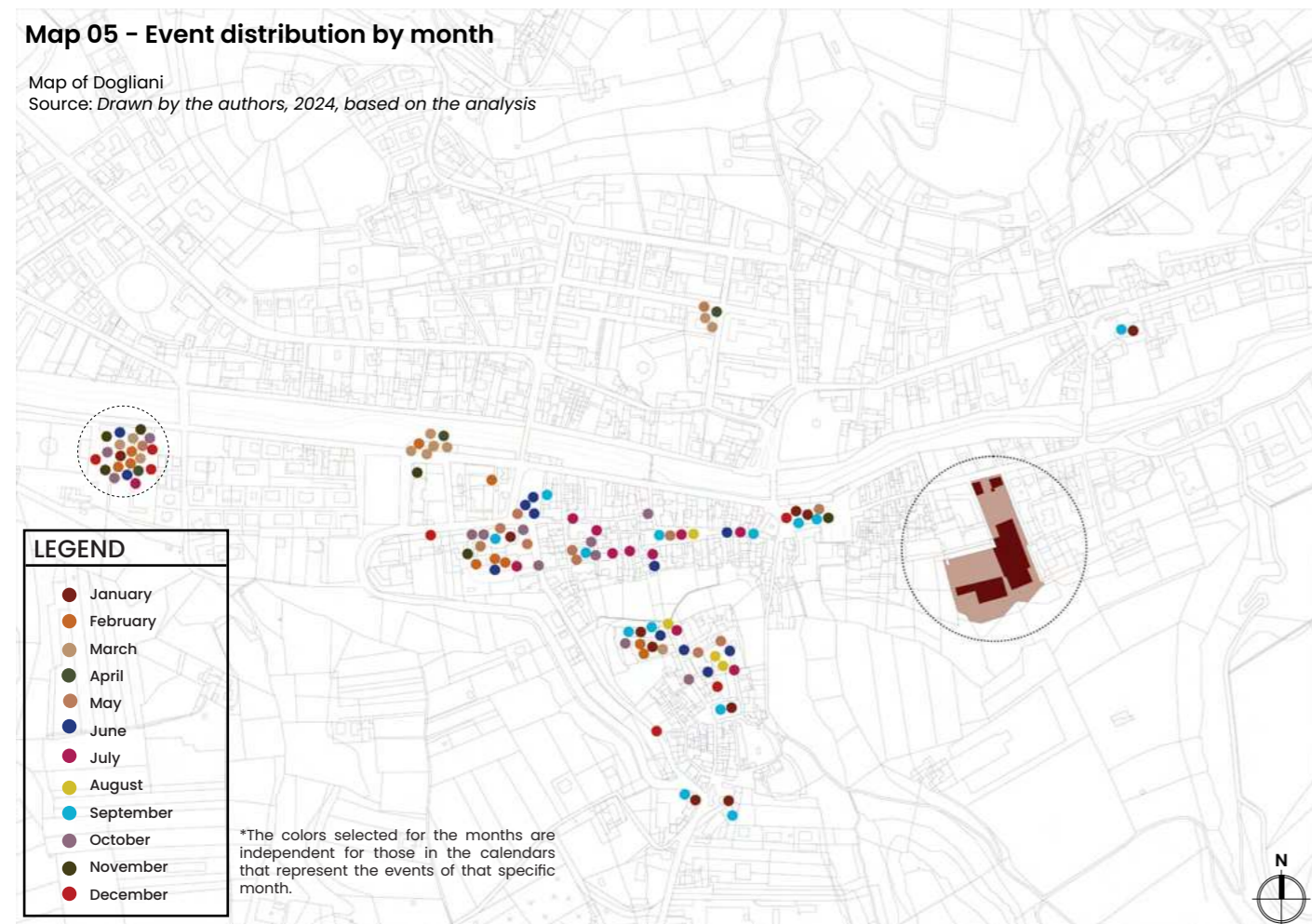


Image 28
Sala Polifunzionale
Source: Google, 2024



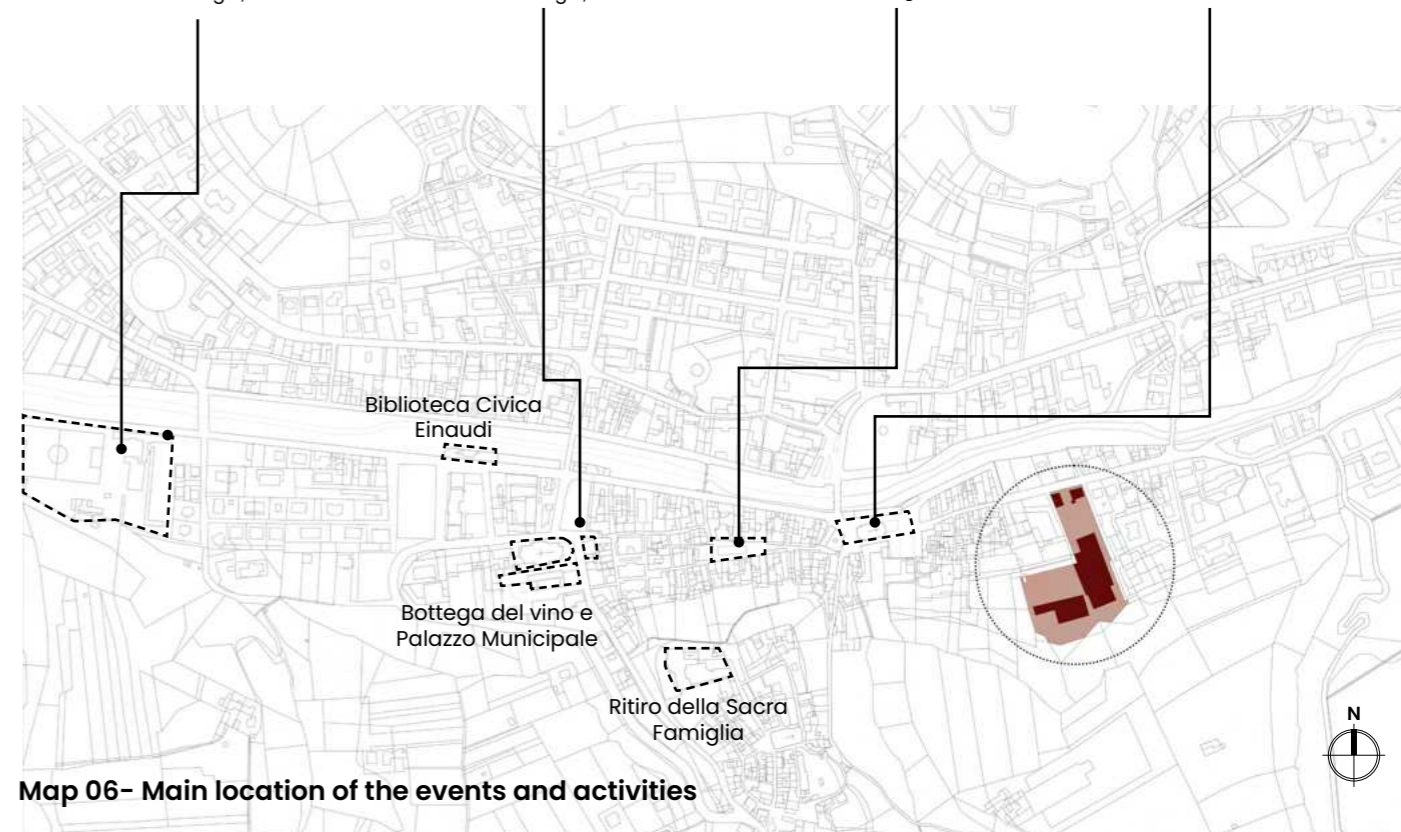
Image 29
Piazza S. Paolo
Source: Google, 2024



Image 30
Piazza Carlo Alberto
Source: Google, 2024



Image 31
Piazza della Confraternita
Source: Photo by the authors, 2024



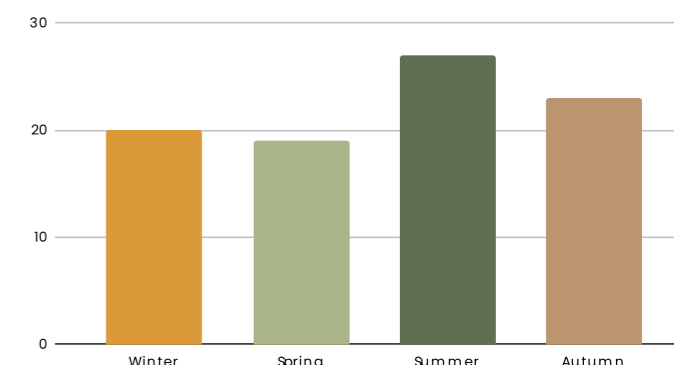
This chart highlights that most events are held indoors, suggesting a preference for enclosed spaces, particularly in colder weather or for specific types of events. On the other hand, outdoor events tend to attract larger crowds and are typically held in streets or public squares.

Graph 05.
OUTDOOR VS. INDOOR EVENTS



In this chart is shown the categorization of the events by seasons, it shows that the highest number of events take place during summer, followed by autumn and winter while the lowest number of events occur in spring.

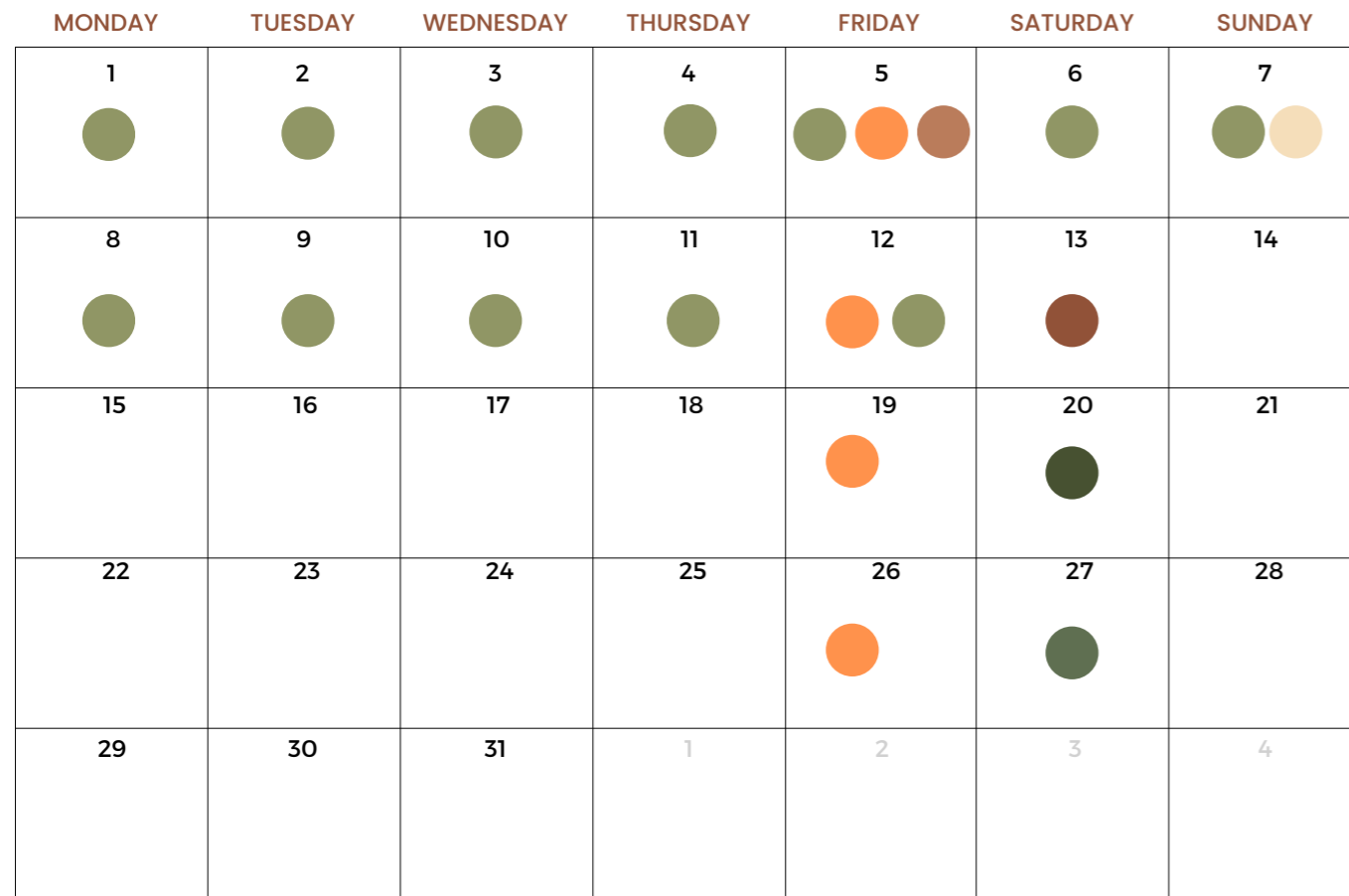
Graph 06.
NO° EVENTS PER SEASON



Events in January

The events that happened in the firsts days of January are mainly the remaining from Christmas. These can be enjoyed in family. Later the events are main conferences of presentations. And every Friday the dances classes can be enjoyed by everyone and also shows the activation of the town socially.

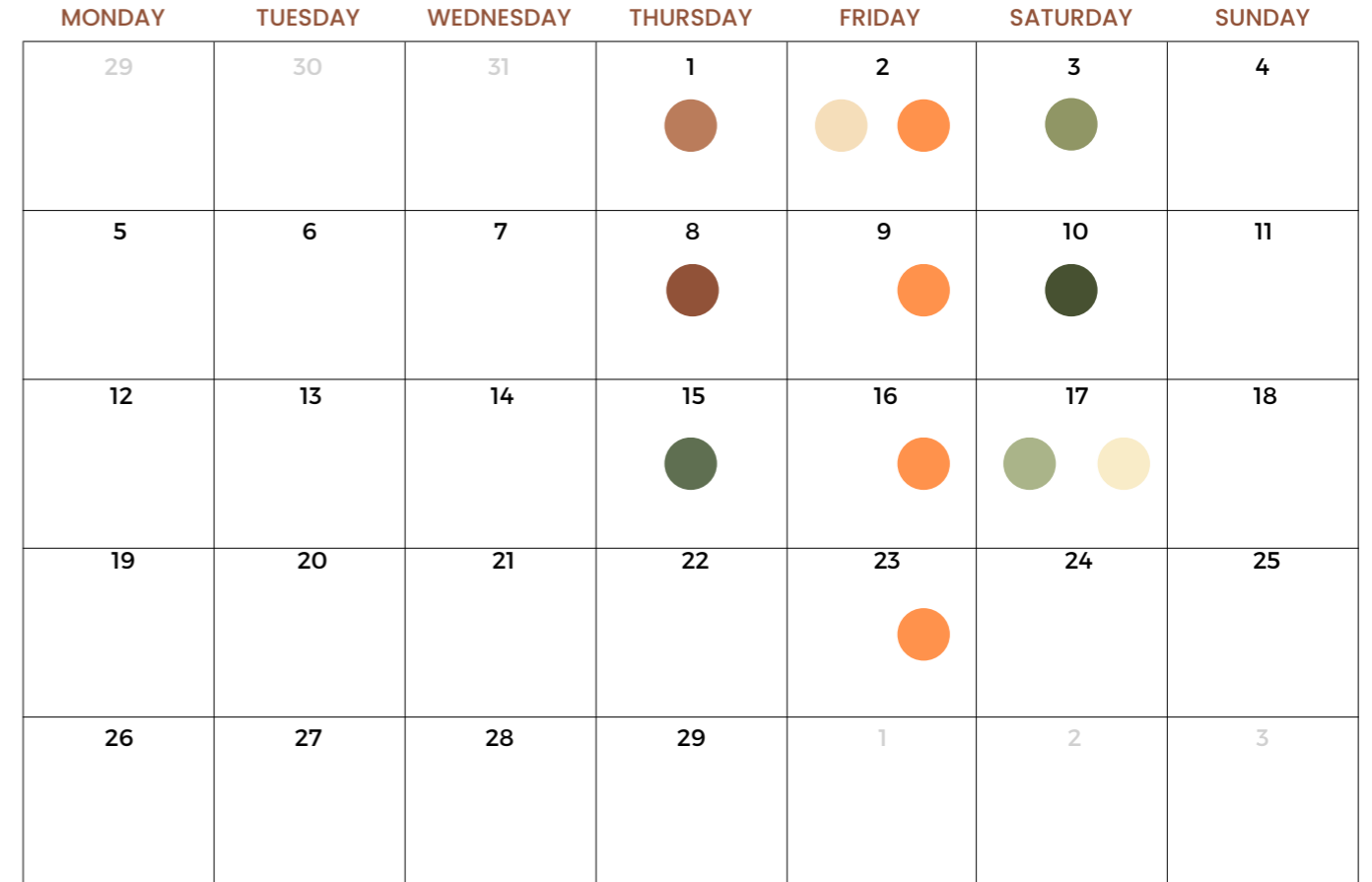
Figure 10
Calendar of events in January
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).



- January 5: Tombola dell'Epifania - Churches
- January 7: *Spettacolo teatrale, se fosse davvero Natale* - Biblioteca Civica Luigi Einaudi
- December 12 - January 12: *Creiamo il presepe: Mostra presepi dei ragazzi* - Confraternità church
- January 13: Conference Sanità SOS - Teatro Sacra Famiglia
- January 20: Book presentation, *Cucinare con il forno a onde mesmeriche* - Biblioteca Nicola Gallino
- January 27: Book presentation, *Baudrà di Lucio Levi* - Biblioteca Civica Luigi Einaudi
- Every friday night: *Balliamo a Dogliani: Dance lessons* - Centro Polifunzionale

Events in Febraury

Figure 11
Calendar of events in February
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).



- February 1: Public meeting with Captain Alessandro Cantarella - Sala Consiliare Palazzo Comunale
- February 2: Book Presentation: *Dream Games* - Teatro Sacra Famiglia
- February 3: Balli Occitani - Centro Polifunzionale
- February 8: Meeting "Alba Capitale della Cultura" - Teatro Sacra Famiglia
- February 10: Festa di Carnevale: maschera parade and food - Centro Polifunzionale
- February 15: AbCibo: scuola alimentare "Il Fruttero familiare" - Bottega del Vino Dogliani
- February 17: Book presentation: *Help and Gioco di ruolo sul disagio giovanile "in cerca di gioia"* - Biblioteca Civica Luigi Einaudi
- February 17: *5ta Vijá Letteraria* - Bottega del Vino Dogliani
- Every friday night: *Balliamo a Dogliani: Dance lessons* - Centro Polifunzionale

Events in March

Figure 12
Calendar of events in March
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
26	27	28	29	1 ● ●	2	3
4 ●	5	6 ● ●	7 ●	8 ● ●	9 ●	10
11	12	13 ●	14	15 ● ●	16 ●	17
18	19	20 ●	21	22 ● ●	23 ●	24
25	26	27 ●	28	29 ●	30	31

- March 1: Biblioteca Contemporanea: Davide Demichelis - Biblioteca Civica Luigi Einaudi
- March 4: Comunità Energetiche: Incontro pubblici per imprenditore - Biblioteca Civica Luigi Einaudi
- March 6: Apertura C'entro Anch'io: Spazio Giovani Dogliani - Cittadella delle Associazioni
- March 7: Book presentation: Michele Ferrero - Biblioteca Civica Luigi Einaudi
- March 8: Guided exhibition: Fotografia é Donna - La Castiglia di Saluzzo starting point in Dogliani
- March 9: Balli Occitani: Sonadors - Centro Polifunzionale
- March 15: Biblioteca Contemporanea: La Revue Dessinée Italia - Biblioteca Civica Luigi Einaudi
- March 16: All'Uomo la scelta: spettacolo di Pino Petruzzelli - Teatro Sacra Famiglia
- March 22: Biblioteca Contemporanea: Radio Beckwith RBE - Biblioteca Civica Luigi Einaudi
- March 23: Easter concert: Filarmonica "Il Risveglio" - Centro Polifunzionale
- Every wednesday C'entro Anch'io - Cittadella delle Associazioni
- Every friday night: Balliamo a Dogliani: Dance lessons - Centro Polifunzionale

Events in April

April can be the least active month of the year in Dogliani, but the dance classes are always present. One important event happening this month is honoring Luigi Einaudi for his date of anniversary.

Figure 13
Calendar of events in April
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

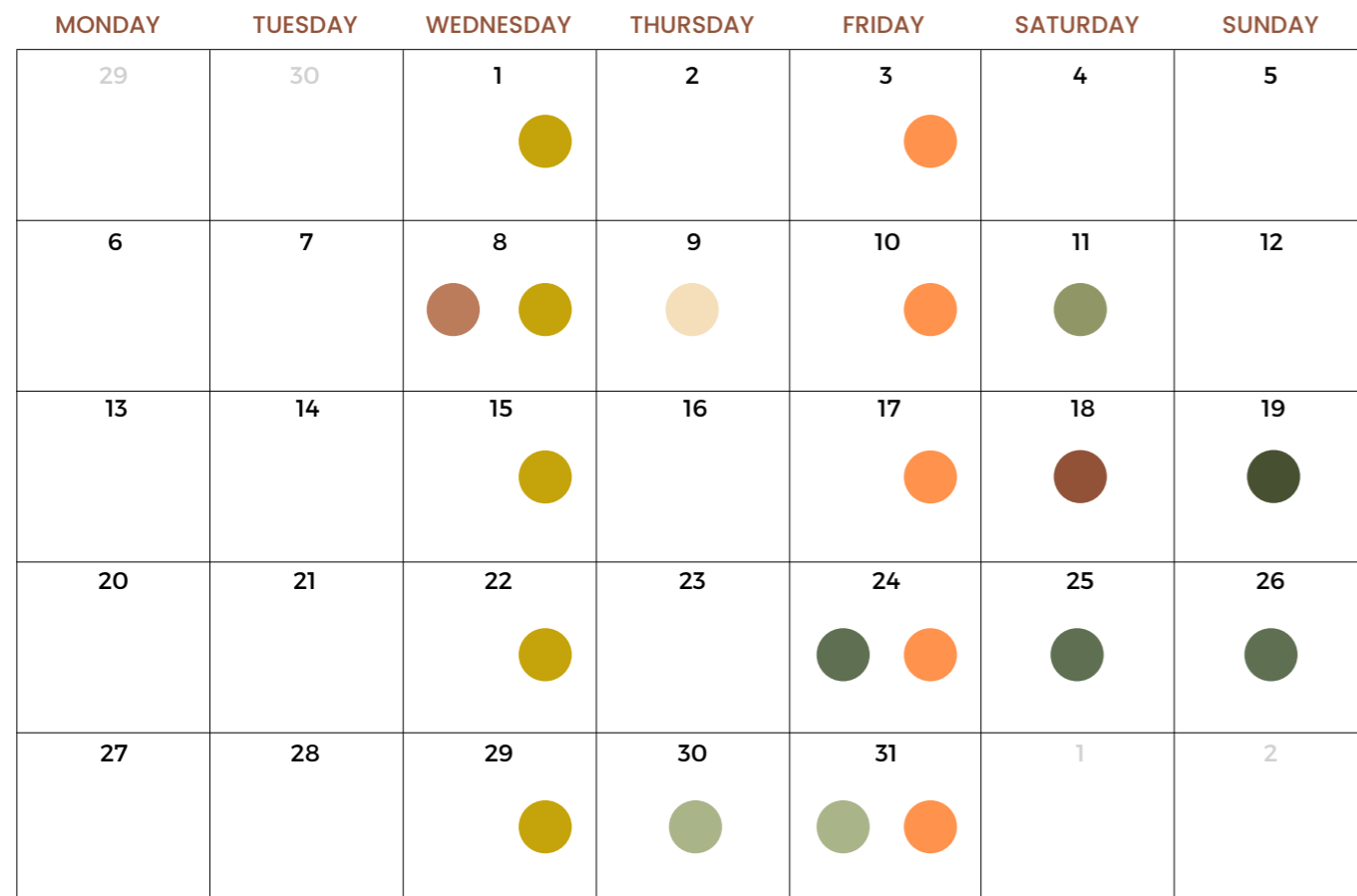
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
1	2	3 ●	4	5 ●	6	7
8	9	10 ●	11	12 ●	13	14
15	16	17 ●	18	19 ●	20 ●	21
22	23	24 ●	25	26 ●	27	28
29	30	1	2	3	4	5

- April 20: Passeggiata Einaudiana: 150th anniversary of Luigi Einaudi - Biblioteca Civica Luigi Einaudi, Museo Luigi Einaudi, gravesite
- Every wednesday C'entro Anch'io - Cittadella delle Associazioni
- Every friday night: Balliamo a Dogliani: Dance lessons - Centro Polifunzionale

Events in May

The begging of the "Festival della TV". One of the biggest events in the town, where there is a lot of regional presence from important firms, and people. Several events happens in this month activated other parts of the city in other buildings.

Figure 14
Calendar of events in May
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

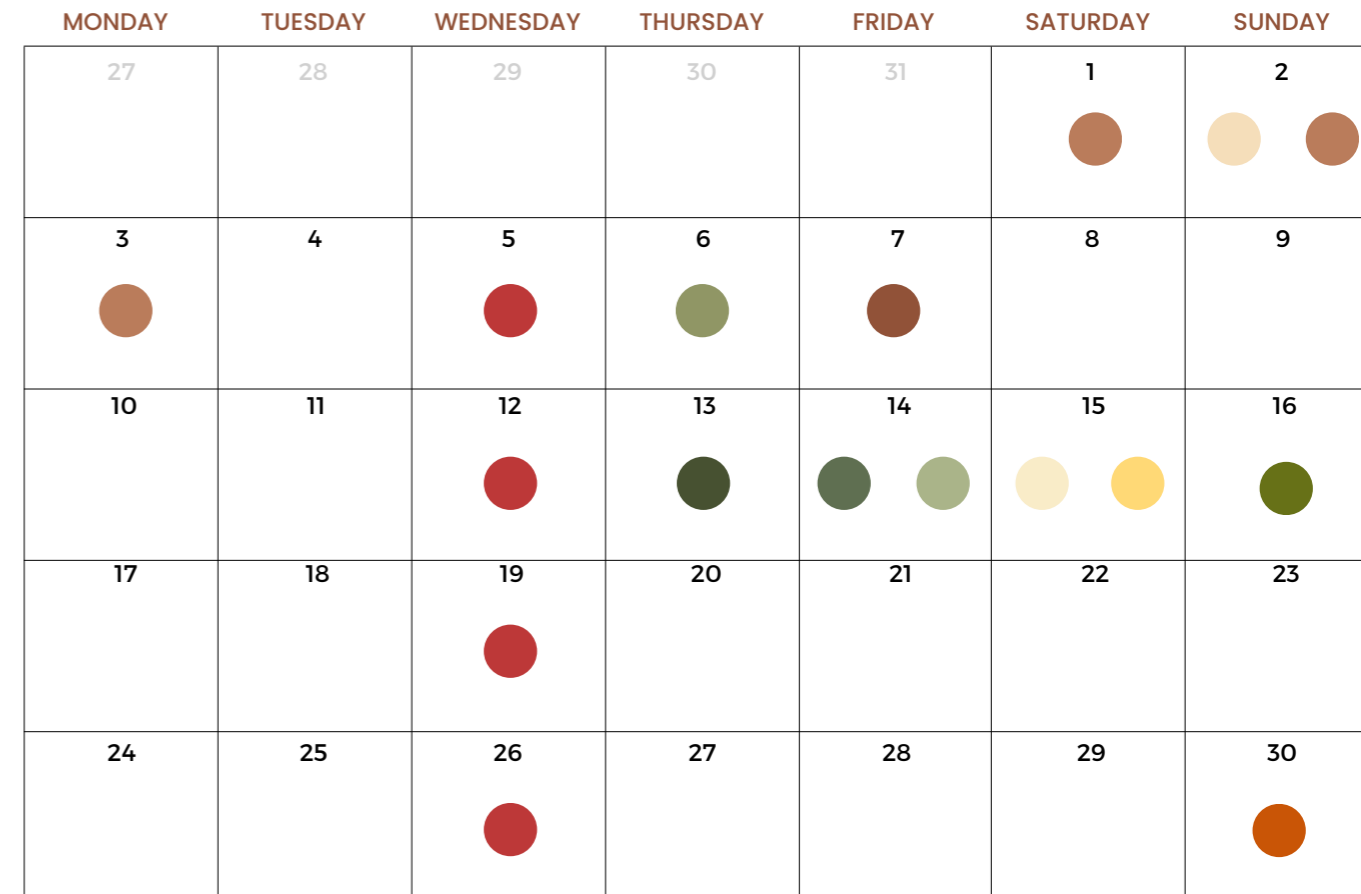


- May 8: Doppo Mezzanotte: Proiezione e incontro con il regista Davide Ferrario - Cinema Multilanghe
- May 9: Dentro una storia, dentro un mistero: il presepe Vivente di Dogliani Castello, documentario di Remo Schellino - Cinema Multilanghe
- May 11: Inaugrazione nuovi mezzi: Volontari del Soccorso e Protezione Civile - Chiesa parrocchiale S. Quirico e Paolo
- May 18: Inaugurazione di Cesare Giaccone "Cuoco Pittore" - Museo Civico G. Gabetti
- May 19: Inaugurazione mostra fotografica di Valter Costa - Museo Ex Voto
- May 24 - May 26: Festival della TV: #tempiesponenziali - Dogliani Borgo e Dogliani Castello
- May 30 - May 31: Conclusione del progetto: A sirene spiegate - Piazza Umberto I
- Every wednesday C'entro Anch'io - Cittadella delle Associazioni
- Every friday night: Balliamo a Dogliani: Dance lessons - Centro Polifunzionale

Events in June

During this month the dance classes on Friday stops, but other cultural events take place. This time of the years, since its summer, many events stars happening in open spaces.

Figure 15
Calendar of events in June
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

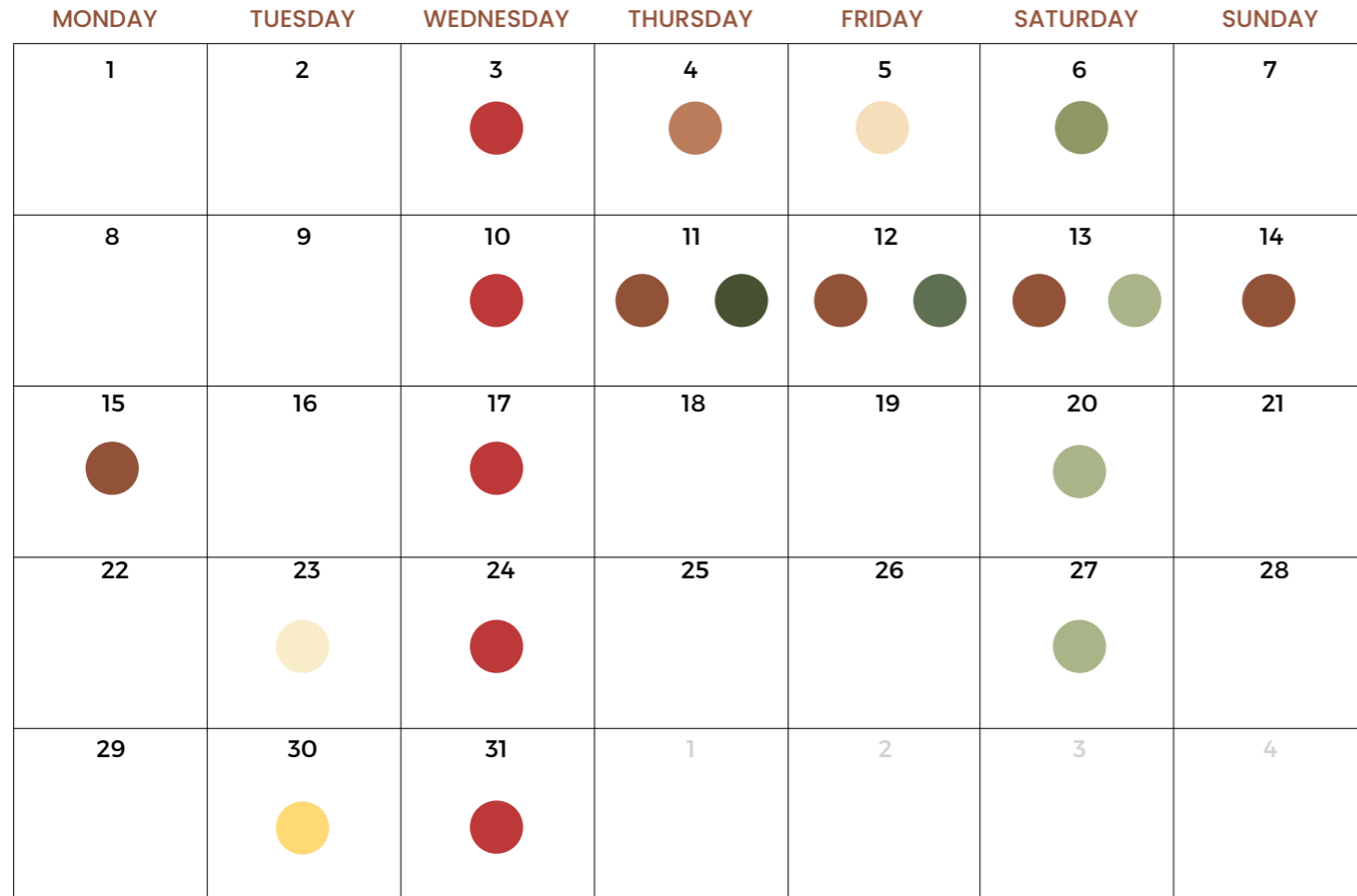


- June 1 - June 3: Terroir Dogliani: Alla scoperta di un territorio e dei suoi vini - Bottega del vino - Dogliani, Montaldo di Mondovì
- June 2: La Sartoria REM presenta: L'Estate REM: Sfilata di moda - Dogliani
- June 6: Ballo di fine anno (C'entro Anch'io): per ragazze e ragazzi delle classi medie - Dogliani
- June 7: Serata danzante: note d'autore - Centro polifunzionale
- June 13: Favole: Saggio del corso di teatro - Teatro Sacra Famiglia
- June 14: Cena a corte - Via Corte
- June 14: Serata danzante: Romeo e i Cooperfisa - Centro Polifunzionale
- June 15: Artigiani del Gusto: street food d'eccellenza - Dogliani Castello
- June 15: Guided tour: e-bike e degustazione con artigiani del gusto
- June 16: Antica Fiera della Ciliegia - Dogliani Borgo e Dogliani Castello (Trenino gratuito)
- June 30: San Paolo concert - Piazza Don Delpodio
- Every wednesday I Caffè di Castello C'è - "Paramulo" di Dogliani Castello

Events in July

As summer time continues most of the events take place in piazzas throughout the town, taking advantage of the public spaces. Many of the events happening in this month are related to music and gastronomy

Figure 16
Calendar of events in July
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

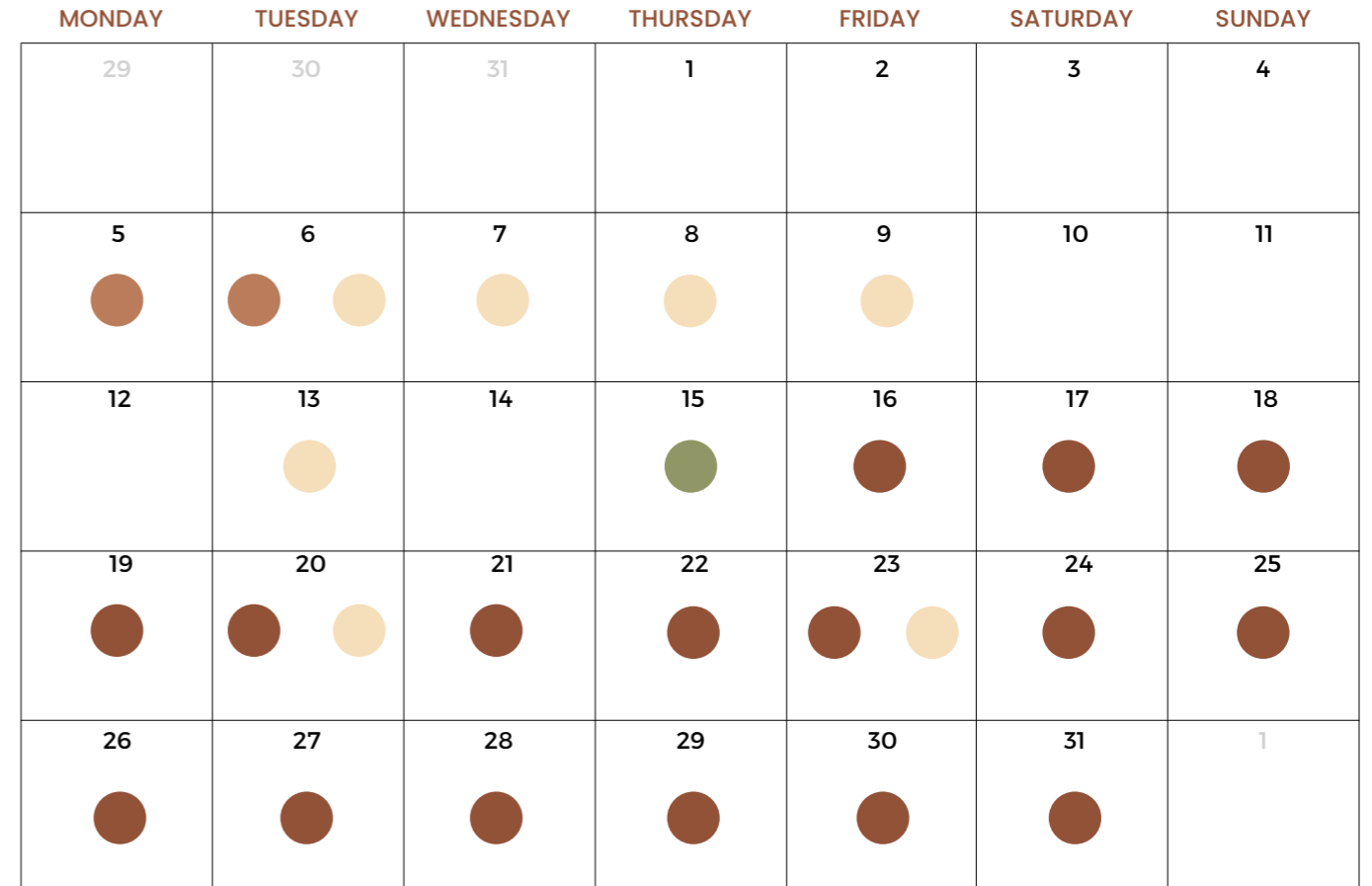


- July 4: Dogliani Open Sounds: Vincenzo Zitello Harpe Mundi - Dogliani Castello, Parco Castello Perno di Caldera
- July 5: Dogliani Open Sounds: Olivia Trummer e Nicola Angelucci, Jazz e non solo - Dogliani Castello, Parco Castello Perno di Caldera
- July 6: Dogliani Open Sounds: Francesca Elena Monte, Italia Brasile andata e ritorno - Dogliani Castello, Parco Castello Perno di Caldera
- July 11 - July 15: 19° Festa di Mezza Estate - Piazza Martiri della Libertà
- July 11: Slurp! con i Gelati di Cascina Lia - Via Corte e Piazza Carlo Alberto
- July 12: Evento Latino: Manos arriba e Gae DJ - Bar Centro Polifunzionale
- July 13, July 20, July 27: Vibrazioni: Dogliani a ritmo di aperitivi - Via e Locali di Dogliani Borgo
- July 23: Tastaben: Evento Enogastronomico - Piazza Don Conterno, Bottega del Vino Dogliani DOCG
- July 30: Rhapsody in Blue: Concerto Suoni dalle Colline di Langhe e Roero - Piazza Don Delpodio, Alba Music Festival
- Every wednesday I Caffè di Castello C'è - "Paramulo" di Dogliani Castello

Events in August

In August, even though it is supposedly the least active month in Italy, in Dogliani there are many activities regarding music, and outdoor activities, such as the outdoor cinema.

Figure 17
Calendar of events in August
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).



- August 5 - August 9: Festa di San Lorenzo: Festa dei bambini, mass, concerts in honor to Nomandi and night parties - Dogliani Castello
- August 6, August 13, August 20, August 23: Vàlanga Sound: Jazz, rock and acoustic music - Dogliani Castello
- August 15: Mercato dei Contadini delle Langhe: Local products - Piazza Carlo Alberto
- August 16 - September 1: Outdoor cinema - Piazza Belvedere

Events in September

September, even though is not that active, is the most varied month in terms of activities. There gastronomy events, catholic events, music events, and other cultural events .

Figure 18
Calendar of events in September
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

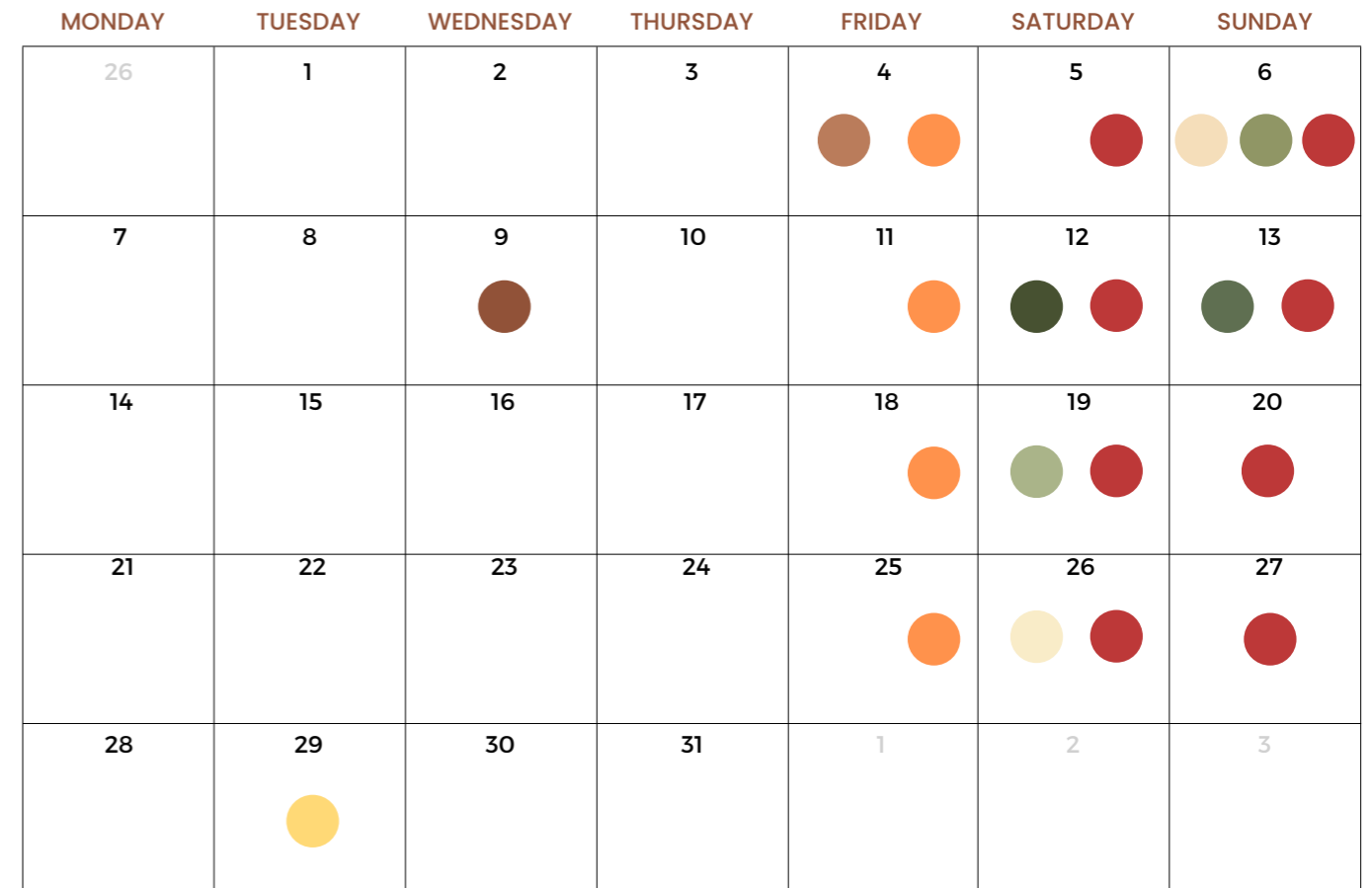


- August 16 - September 1: August 16 - September 1: Outdoor cinema - Piazza Belvedere
- September 5: Ultimo appuntamento: Slurp! con i gelati di Cascina Lia - Via Corte e Piazza Carlo Alberto
- September 6: Dogliani Beats & Bites: Vino street food e musica - Cantina del Dolcetto di Dogliani
- September 14: Inaugurazione mostra di Ismael Nones: Chiara Confusione nell'ambito di Buona Fortuna Ribelli a cura di Lunetta11 e della galleria Niccoli di Parma - Capella del Ritiro Sacra Famiglia, Dogliani Castello
- September 15: Consegna del premio "Schina Cinà 2024" - Teatro Sacra Famiglia, Dogliani Castello
- September 20: Concerto di Musica Antica: con gli strumenti di Valerio Gabutti - Chiesa Confraternità dei Battuti
- September 21: Festa della Vendemmia: La cura dell'uva: Proiezione, mostra, reivoazione della pigiatura, merenda sinoira e musica - Caffè Riviera, cinema Multilanghe
- September 27: Luigi Einaudi a Torino: visita guidata con partenza da Dogliani - Torino
- September 28: Camminata storico artistica - Dogliani Chapels

Events in October

After summer time, the dances classes came back to Dogliani, every Friday night, as well as other events regarding art and outdoor activities. One of the events happening this month that honors the ex president is the "Passeggiata Einaudiana", going through a tour throughout the city and taking a look back to history

Figure 19
Calendar of events in October
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

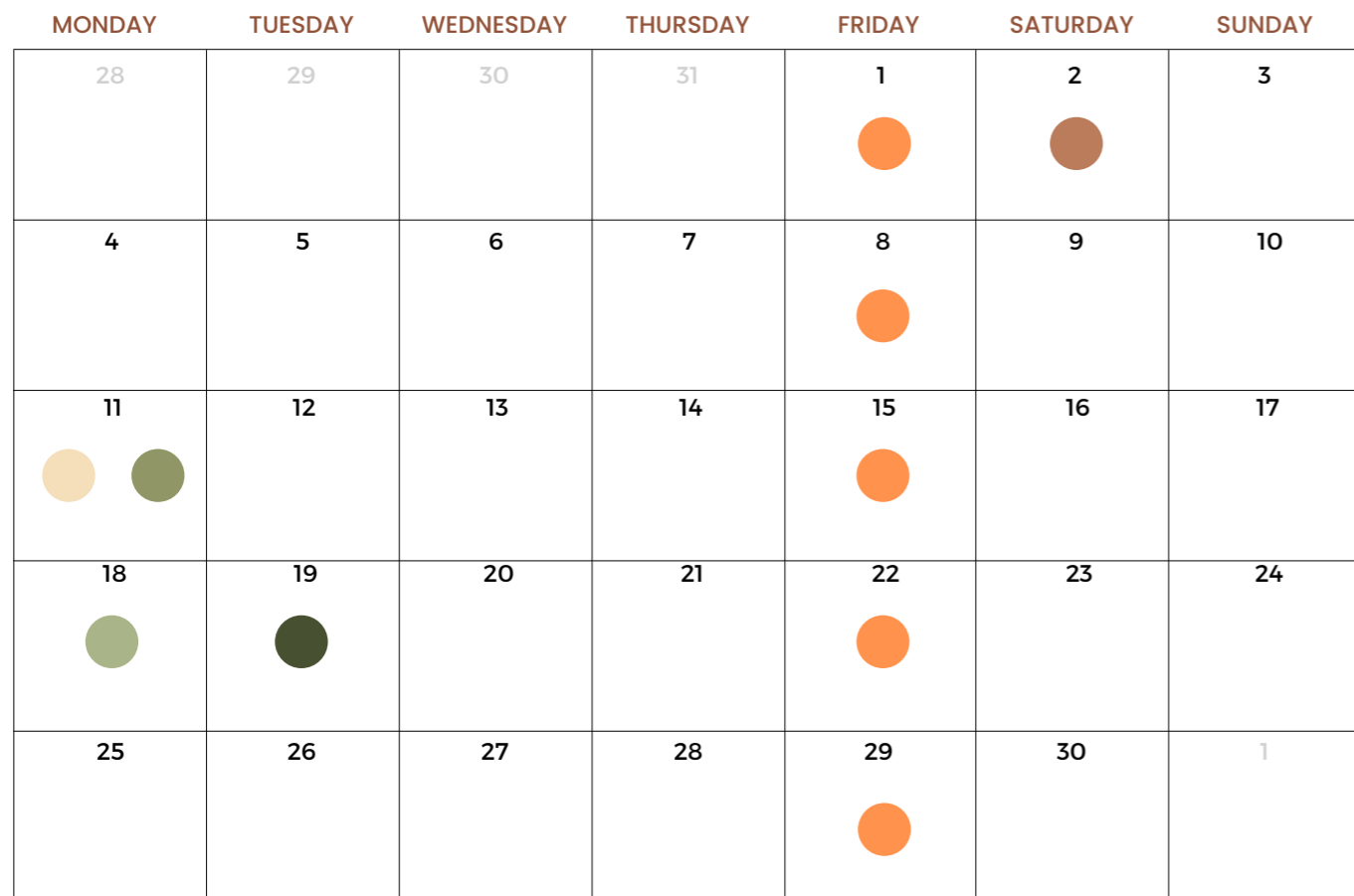


- October 4: Nonu en Festa: Serata danzante con Meo Tomatis - Centro Polifunzionale
- October 6: Nonu en Festa: Santa Messa e pranzo - Leon d'Oro, Chiesa Parrocchiale SS. Quirico e Paolo
- October 6: Outdoor in Valle Dogliani, trekking, MTB e EMTB - Incontro in Piazza S. Paolo
- October 9 - October 16: Esperienza di Sociodrama - Cinema Multilanghe
- October 12: Passeggiata Einaudiana: Luigi Einaudi 150 - Dogliani generale
- October 13: Castagnata - Oratorio Don Conterno
- October 19: Rassegna Bandistica - Centro Polifunzionale
- October 26: In crescendo Spettacolo del Coro dei Giovani - Cinema Multilanghe
- October 29: Apertura mostra "Colori e passioni": Mostra collettiva di pittura - Museo Ex Voto e Devozione Popolare
- Every friday night: *Balliamo a Dogliani*: Dance lessons - Centro Polifunzionale
- Saturdays and Sundays: *Apertura mostra di Ismaele Nones, Chiara Confusione* - Cappella Del Ritiro Sacra Famiglia, Dogliani Castello

Events in November

In November one of the most important events regarding the culture and identity of Dogliani, happens: "Fiera della Cistrà" atypical food from the territory.

Figure 20
Calendar of events in November
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).

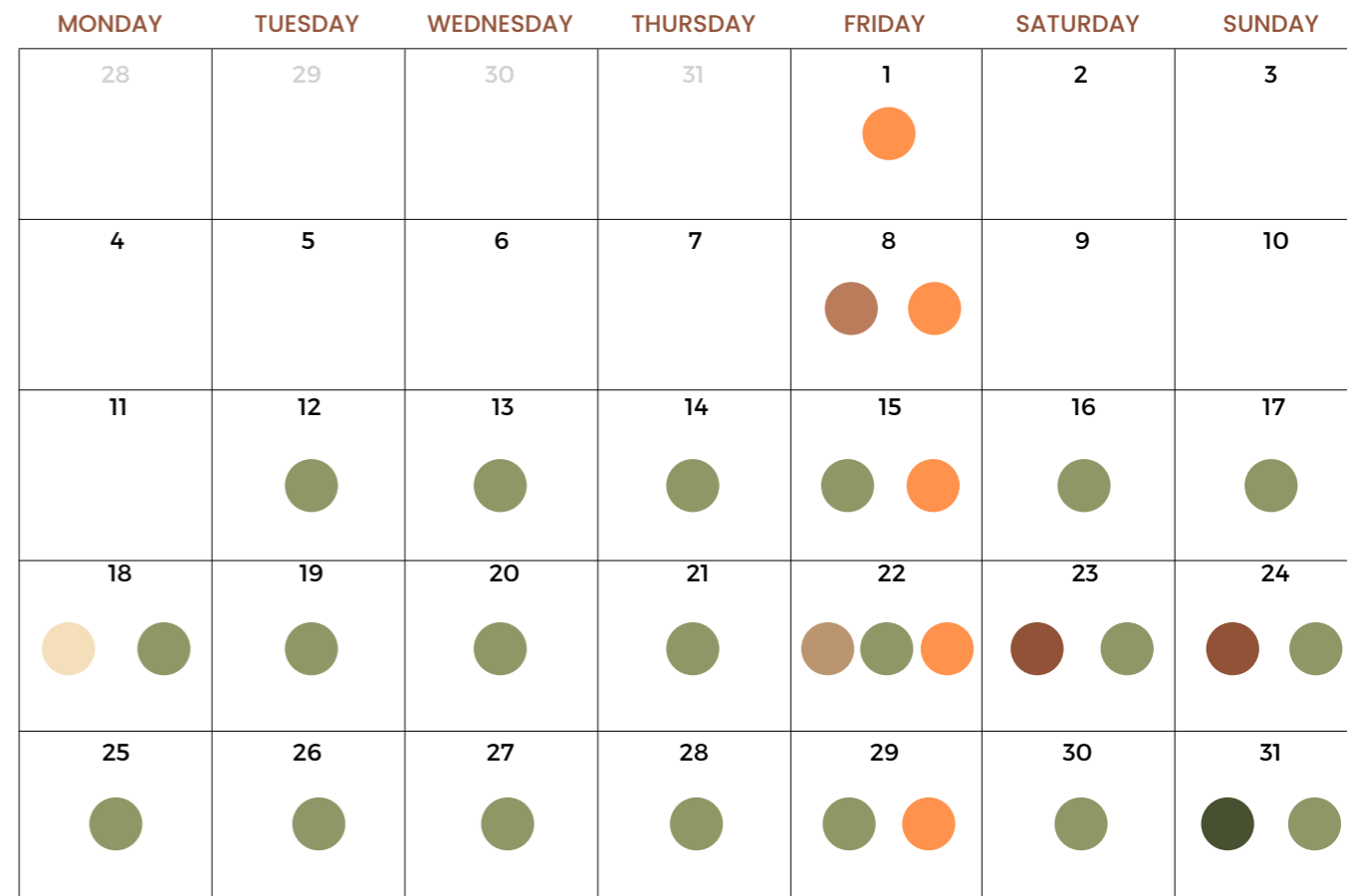


- November 2: Fiera della Cistrà - Confraternità dei Battuti e centro storico
- November 11: Open Day Anpas: Volontari del Soccorso Dogliani - Dogliani Borgo and sede Volontari del Soccorso
- November 11: Lou Tapage: Musica Occitana - Centro Polifunzionale
- November 18: "Oca: L'arte che allena il pensiero": Spettacolo-gioco interattivo per ragazzi e famiglie - Centro Polifunzionale
- November 19: Clausura mostra "Colori e Passioni": Mostra collettiva di Pittura - Museo Ex Voto e Devozione Popolare
- Every friday night: Balliamo a Dogliani: Dance lessons - Centro Polifunzionale

Events in December

Finally Christmas arrives, and with it comes several events that celebrates this festivity. Several activities for children mainly, and many night events.

Figure 21
Calendar of events in December
Source: Drawn by the authors, based on information obtained from Turismo Dogliani (@doglianiturismo) and the official Dogliani Tourism website (2024).



- December 8: Se fosse davvero Natale: Mercatini natale - Dogliani Castello
- December 12 - January 12: Creiamo il presepe: Mostra presepi dei ragazzi - Confraternità church
- December 18 - December 22: 20 anni di già?: centro diurno "Nucci Banfi"
- December 22: Christmas concert - Centro Polifunzionale
- December 23 - December 24: Presepe vivente 49° edition - Via Dogliani Castello
- December 31: New Year's Eve - Centro Polifunzionale
- Every friday night: Balliamo a Dogliani: Dance lessons - Centro Polifunzionale



Image 32
Festival della TV
Source: Gazzetta d'Alba, 2024



Image 33
Presepe Vivente
Source: Dogliani Turismo



Image 34
Outside Cinema
Source: Dogliani Turismo, 2024



Image 35
Fiera della Cisirà
Source: Casa Fusina, 2019



Image 36
Cena Via Corte
Source: Dogliani Turismo, 2024



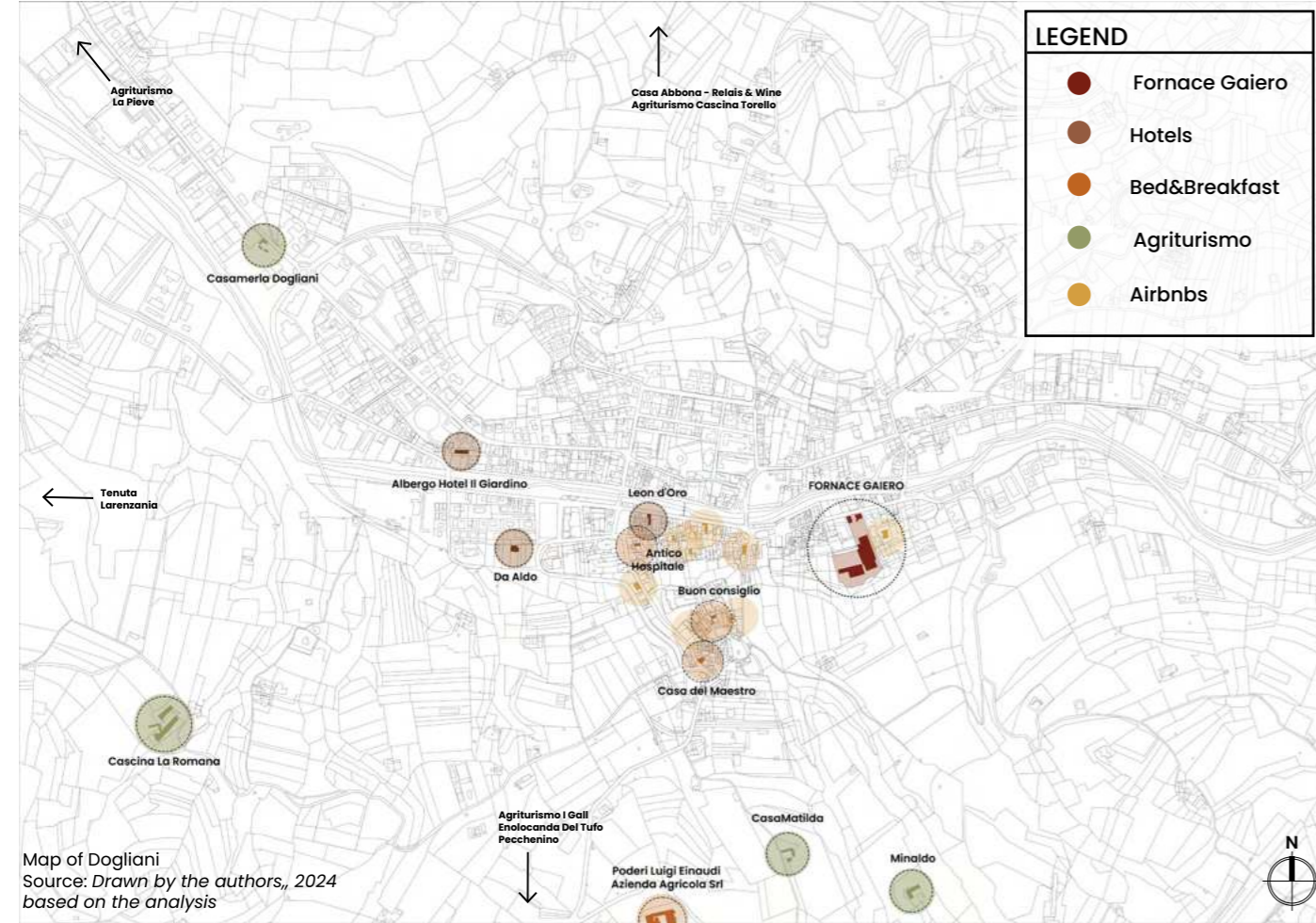
Image 37
Fiera della Ciliegia
Source: Eventi e Sagre, 2022



Image 38
Terroir event Dogliani, Bottega del vino
Source: Langhe.net, 2024

2.11.4. Accomodation

Map 07- Accomodation in Dogliani



In Dogliani, there is a **mix of offers** of accommodation between hotels, bed and breakfast, agroturism and airbnb listings. Most of the Airbnbs are concentrated in the city center, compared to the other accommodations, making it an easy access for those tourists who travel to Dogliani without car, and want to enjoy what the town offers.

Hotels, on the other hand, are very few in the town, with only three traditional hotels in the city center (Da Aldo, Albergo Hotel III Giardino and Leon d'Oro) and one located more in the periphery (Tenuta Larenzania). These hotels offer a wider amount of rooms and more availability compared to the Airbnbs. But one thing they have in common is the proximity to Fornace Gairo. These three hotels located in the city center as well as the Airbnbs, are about 1-5 minutes walking to the city center (piazza, S. Paolo, the heart of the city). And from here to Fornace Gaiero it's only a 10 minutes walk.

More options of accommodation can be found if we evaluate Bed and Breakfast listings ,however this tends to be smaller compared to the hotels, and therefore less rooms, and harder to find

availability. This type of accommodation is more widespread in Dogliani, and therefore it can be found in the city center, in Borgo Castello or in the peripheries.

Finally the most common accommodation in Dogliani is the Agroturism, located in the peripheries, to be able to offer the whole experience of the countryside. Many of these **Agroturism are host by families who wants to share their traditions and culture** to those who visit Dogliani, giving them the full experience to get involved with the landscape of the hills of Dogliani, the wine production with those who have vineyards, Hazelnut production, with those who have it, animals, and many more outside activities.

These types of accommodations, more than giving people a place to sleep, are offering them a whole experience where they can enjoy both the environment, but also are a few minutes away from the town of Dogliani by car. After a 5-10 minutes drive to the city center, it's only a 10 minutes walk to the Fornace Gaiero. However for thoses who dont come by car, these type of accomodations cannot be enjoyed fully.

Description of the hotels offer in Dogliani.

Table 1. Hotels in Dogliani
Source: Drawn by the author , 2024, based on the investigation.

HOTELS				
NAME	DESCRIPTION	ADDRESS	ACCESIBILITY	CONTACT OR WEBSITE
1 Da Aldo	This hotel offer different kin of rooms: double, triple, matrimonial (queen-size), matrimonial for single use Private parking, free Wi-Fi, green area for small pets, traditional cuisine	Via XXV Aprile, 23	CITY CENTER 3 min bike 5min walking	Tel. 0173.70588
2 Albergo Hotel II Giardino	The hotel offers a garden with barbecue, furnished terrace, free Wi-Fi, pets allowed, minibar. The rooms (single, double, and triple) are equipped with private bathrooms, external phone line, Wi-Fi, color TV, air conditioning, and minibar.	Viale Gabetti, 10a	CITY CENTER 3 min bike 8 min walking	https://www.ilgia rdinohotel.it/hote l/
3 Leon d'Oro - Ristorante Dogliani Hotel Bar	This hotel offers 9 rooms for a total of 18 beds: 2 double rooms, 1 single room, 1 twin room with single beds. Terrace, bar, room service, in-house restaurant. All rooms are equipped with a private bathroom with shower.	Via V. Emanuele II, 23	CITY CENTER 1 min bike 3 min walking	Own website https://leonodoro dogliani.it/
4 Tenuta Larenzania	This hotel offers 36 rooms, an outdoor pool, free parking, pets allowed, free Wi-Fi, complimentary breakfast, balcony, room service	Borgata Pianteltroglio, 16	OUTSIDE 6 mins car 23 min bike 50mins walking	https://tenutalar enzania.it

Description of the Bed and Breakfast offer in Dogliani.

Table 2. Bed and Breakfast in Dogliani
Source: Drawn by the author , 2024, based on the investigation.

BED AND BREAKFAST				
NAME	DESCRIPTION	ADDRESS	ACCESIBILITY	CONTACT OR WEBSITE
3 Casa Abbona - Relais & Wine	Offers 10 rooms, an outdoor pool, wine cellar, free Wi-Fi, minibar	Borgata San Luigi, 41	OUTSIDE 6min car 23min bike 50 min walking	https://www.cas abbona.it/
4 Relais dei Poderi Luigi Einaudi	it offers 8 double rooms, 2 suites an outdoor pool, wine cellar	Borgata Gombe, 31/32, 12063 Dogliani CN	OUTSIDE 4min car 19min bike 36min walking	https://www.relai seinaudi.com
5 Casa del Maestro	it offers 3 art apartments: Cézanne, Degas, Monet, an Outdoor pool, wine bar	Via Vasca, 7	BORGO CASTELLO 2min car 14 min walking 6 min bike	https://www.cas adelmaestro.it/
6 Antico Hospitale B&B	Breakfast room, free Wi-Fi, storage for bicycles and motorcycles, terrace, reading nook. Located in a historic building in the heart of Dogliani. The nearest airport is Cuneo International Airport, 23 miles from the bed and breakfast.	Via Tenente Costa, 8	CITY CENTER 1 min bike 1 min walking	Booking and other websites of reservations https://www.anti cohospitaledogli ani.it
7 Cascina Corte	3 two-room apartments (1 with kitchen) Breakfast with local products included	B.ta Valdiberti, 33	OUTSIDE 5 min car 42min walking 19min bike	http://www.casci nacorte.it
8 Agriturismo Cascina Torello	1 twin room with shared bathroom, 1 double room with shared bathroom, 2 double rooms with private bathroom Outdoor pool, terrace/balcony, free Wi-Fi, bicycle rentals, pets allowed.	B.ta San Luigi, 48	OUTSIDE 10 min car 1H19 min walking 30 min bike	http://www.casci natorello.com
9 Casa di accoglienza Buon Consiglio	It only offers avilability during the Living Nativity Scene (December 23-24) 2 quadruple rooms, 6 double rooms, 4 single rooms	Via Congregazion e, 1	BORGO CASTELLO 2min car 12min walking 6min bike	Tel. 0173. 70138

Description of the **Agroturism** offer in Dogliani.

Table 3. Agroturism in Dogliani
Source: Drawn by the author , 2024, based on the investigation.

AGRITURISMI				
NAME	DESCRIPTION	ADDRESS	ACCESIBILITY	CONTACT OR WEBSITE
10 Agroturismo Barbarossa	Offers rooms (1 with disabled access), 1 studio apartment with kitchenette, living area, and bathroom Furnished garden of 7,000 m², barbecue, bicycle rental, free Wi-Fi, traditional breakfast with homemade products, pets allowed	B.ta Gombe, 60	OUTSIDE 🚗 6min car 🚲 25min bike 🚶 55 walking	Home Agroturismo Barbarossa (agriturbarbarossa.wixsite.com)
11 CasaMatilda	Casa Matilda, a family who wanted to open their doors to society and share with them a more , family-centered lifestyle. Guests are welcome as friends. It offers apartments that are equipped with a kitchen for guests to enjoy breakfast in privacy. The property have green spaces for relaxation,a saltwater pool with a panoramic view, walking paths through the surrounding park and woods, educational activities, babysitting services,	B.ta Pamparato, 1	OUTSIDE 🚗 5min car 🚲 21 min bike 🚶 42 min walking	https://casamatilda.it/it
12 Cascina La Romana	Located in a quiet, private rural area, far from noise, surrounded by vineyards that produce excellent Dogliani wine and hazelnut groves owned by the farm, this agriturismo is dedicated to hazelnut cultivation, wine production from a small vineyard, and raising free-range chickens for egg production. The agriturismo offers stays in independent apartments within a renovated old farmhouse Accommodations include 3 two-room apartments and 1 three-room apartment, all equipped with a kitchen, TV, and washing machine. Amenities include disabled access, parking, barbecue area, solarium, playground, free Wi-Fi, and pets are allowed, including large animals, with horse stables available.	B.ta Biarella, 47	OUTSIDE 🚗 4min car 🚲 12min bike 🚶 37walking	Own website https://www.cascalalaromana.it/
13 Agroturismo I Galli	It offers, 6 apartments (2 to 5 beds) Parking, pets allowed, garden, terrace, barbecue, free Wi-Fi.	B.ta Pamparato, 41	OUTSIDE 🚗 6min car 🚌 11 min bus (SP661) 🚲 32 bike 🚶 1h 4 walking	http://www.agriturismoigalli.it
14 Agroturismo La Pieve	It offers a 1 two-room apartment with 3 beds, 4 double rooms, 1 triple room, 1 quadruple room, 1 single room with disabled access In-house restaurant with homemade cuisine, farm, and the option to rent electric bikes	Via Torino, 353 - Loc. Pieve	OUTSIDE 🚗 4min car 🚲 7min bike 🚶 29min walking	http://www.agriturismolapieve.eu
15 Agroturismo Minaldo	It offers 1 double room (+1 with disabled access), 2 twin rooms with shared bathroom Meeting room, wellness area with Finnish sauna, children's pool, free breakfast, free parking, free Wi-Fi, pets allowed	B.ta Pamparato, 5	OUTSIDE 🚗 5min car 🚲 23min bike 🚶 50min walking.	Tel. 0173.70340
16 Enolocanda Del Tufo	It offers 2 apartments (2-4 beds) with kitchen and private bathroom, 2 suites (2-3 beds) with living room, bathroom, and separate bedroom, 7 double rooms with private bathroom, 2 double rooms with disabled access Spacious terrace, upon request guided tour of the wine cellar and tasting of local products, in-house restaurant, private parking, ping pong table, and foosball table	B.ta Gombe, 33	OUTSIDE 🚗 5min car 🚲 23min bike 🚶 59min walking	http://www.deltufo.it
17 Pecchenino	Mini accommodation with kitchen and 4 double rooms Bicycle rentals, outdoor trekking and nature observation, relaxation room, garden, TV, free Wi-Fi, free parking	B.ta Valdiberti, 59	OUTSIDE 🚗 7 min car 🚌 29 min bus (SP9) 🚲 29 min bike 🚶 1h12min walking	http://www.peccenino.it/agriturismo.php
18 Casamerla Dogliani	It offers, rooms equipped with air conditioning, and free Wi-Fi is available. Also outdoor furniture, beach chairs, luggage storage. pool and breakfast available on-site. Guests travelling by car will have access to free parking.	Casa Merla Dogliani, Via Torino, 239, 12063 Dogliani CN	CITY CENTER 🚗 2min car 🚲 4 min car 🚶 18min walking	Booking and other websites of reservations



Image 39
Casa Merla
Source: Trip Advisor, 2024



Image 40
Agroturismo La Pieve
Source: Trip Advisor, 2024



Image 41
Bed & Breakfast: Antico Hospitale
Source: Trivago 2024

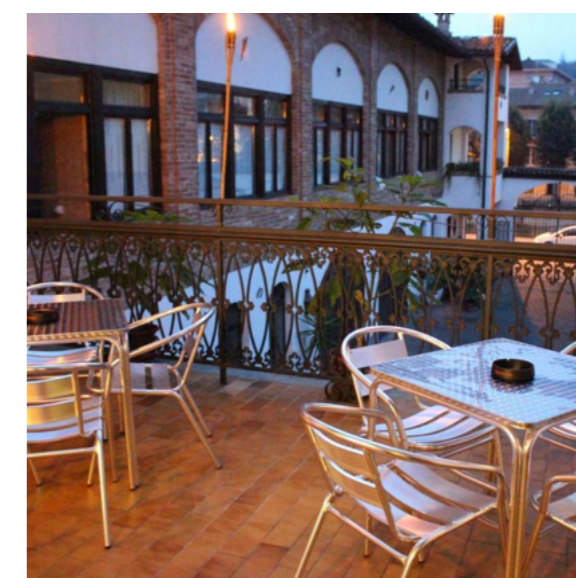


Image 42
Leon D'Oro
Source: HotelMix, 2024



Image 43
Casina Corte
Source: Bed and Breakfast, 2024



Image 44
Casa Matilda
Source: Agriturismo, 2024

2.11.5. Production: Wine culture and other kind of production

Production

Dogliani, due to its location in the Langhe region, it benefits from ideal soil conditions for cultivating **grapes, hazelnuts, and other high-quality crops**. It became famous for its **“Dolcetto di Dogliani”, which carries the prestigious Dogliani DOCG designation (Denominazione di Origine Controllata e Garantita)**, the highest distinction in Italian wine regulation. It also produces other famous wines such as Barbera and Nebbiolo, since those grapes are commonly cultivated in the area

Among the most famous vineyard and wineries in Dogliani, there is:

- 1. Azienda Agricola Cà Neeva:** A family winery that focuses on sustainable agriculture, always being conscious about the environment.
- 2. Poderi Luigi Einaudi:** one of the most historic winery of the region, founded by the ex president of Italy Luigi Einaudi
- 3. Cascina Corte:** Famous for having biodynamic agriculture methods.
- 4. Chionetti:** A family winery that focuses on producing Dolcetto of high quality, while maintaining the tradition of the family.
- 5. Cantina Carlo Romana:** Family Winery famous for its artisanal Dolcetti.
- 6. Azienda Vitivinicola San Fereolo:** One of the most recent vineyards, founded in the early 1990's by Nicoletta Bocca

All these vineyards are located on the peripheries of Dogliani, and not only offer the best qualities of Dolcetto but they are also connected with a lot of history and tradition and wine culture of Dogliani.

Additionally to the wine, In Dogliani it can be found a famous type of Hazelnut called Tonda Gentile delle Langhe, one of the most valuables in the production of chocolate and other gastronomic products. Even though the cultivations around Dogliani are very small, there is one famous farm, called La Pieve, dedicated to cultivating Nocciolo Piemonte IGP (Indicazione Geografica Protetta), some fruits such as peaches, apricots, plums and centantly wine, producing Dolcetto Nebbiolo and Chardonnay.

Denominazione di origine Controllata e Garantita (DOCG)

The “Disciplinare di Produzione dei Vini a Denominazione di Origine Controllata e Garantita ‘Dogliani’”, is a document that refers to the production regulations for wines with the Denominazione di Origine Controllata e Garantita (DOCG) “Dogliani” designation. It meant to **ensure that the wines that are produced in Dogliani, meet the high quality standards**, respecting the region’s wine heritage, and producing the authenticity of the product.

This document was approved in **1974**, first making reference to DOC wines, and later on in 2005 making reference to DOCG wines. The last modified in 2018 with the “D.M. 26.10.2018 Pubblicato sul sito web del Mipaaf Sezione Qualità – Vini DOP e IGP e nella G.U. n. del” (Regione Piemonte, 1974.)

Image 45
The San Fereolo Vineyards in Dogliani
Source: Photo by Hoanie Bonfiglio, 2017



Among the several articles, it states that in order **to gain this denomination**, the wine needs to be produced only with **Dolcetto grapes** (Art. 3), and it also specifies that the cultivation of this variety of grapes needs to be specifically in the **territory of Dogliani** (Art. 4). (Regione Piemonte, 1974.)

The document also identifies the specific requirements of the vineyard (Art. 5), having a limit on vine density and yield per hectare, specifications for the vinification (art. 6), describing the practices for fermentation and correct aging to preserve its quality and finally its quality standards in art 7, defining the right criterias for the color, aroma, taste and minimum alcohol content. (Regione Piemonte, 1974.)

Dolcetto and its crisis

Dolcetto is a Piedmontese grape that has been cultivated for centuries in the areas of Dogliani, Ovada, Asti, Alba and Acqui. (OriginalItalia, 2023). The grape has an **early vegetative cycle**, meaning that it starts to grow in the early season and can be advantageous in the Langhe region in the peak of the mountain due to the cold conditions later on; this grape does not need to be ripen later as Nebbiolo and Barbera. (OriginalItalia, 2023). This is a grape that has a **high concentration of polyphenols**, (the compound that gives color to the wine), and therefore it has a deep ruby color. (OriginalItalia, 2023). Compared to the Barolo, Dolcetto is a **lighter-bodied, softer and fruity wine** (Hookie, 2011), and people may think that the wine of Dolcetto it’s sweet, because its name suggest so, however, the only thing sweet it’s the grape itself, since the taste of the wine can not be consider totally sweet, but rather a **robust flavored** (but not as much as a Barolo).

Among the Piedmontese red grapes, **Dolcetto is the least known**. This variety of grape, it is said that was born by the **fusion of other two varieties, that have now disappeared**: Moissan and Dolcetto Bianco. (Montaldo, 2023). Also, according to Paola Abrigo, a wine producer from Dogliani, **“Dolcetto is a difficult grape to grow and to make into wine,”** it can only be grown in specific soil, like the one in Dogliani, Paola continued, **“It needs the right soil, exposure and altitude.** It’s a fussy vine. The wine also turns reductive easily. It doesn’t like its lees (sediment that settles at the bottom of a wine barrel or tank after fermentation). You have to be alert, so at the first sign of reduction (hydrogen sulfide) it has to be racked (when a wine is drained off its lees into other tanks, receiving some aeration)” (Hookie, 2011). For these reasons, the wine is so hard to produce nowadays, highlighting **the value of this vine as a factor of biodiversity** among the grapes, and the unique connection to the specific soil where it grows.

Even though the Dolcetto is so unique because of its characteristics, **the wine, which has a DOCG denomination, is often criticized and not as popular as other wines in Piedmont** such as the Barolo, Barbaresco, Barbera. According to an article by Giancarlo Gariglio, a Curator of the Daily Wine Guide by Slow Food Editore, this grape is an endangered species, because **it has not been appreciated as it should**.

The fact that the grape is so hard to grow, and **it requires a significant commitment in both the vineyard and the cellar management (Montaldo, 2023) many producers prefer to grow Nebbiolo instead.** (Gariglio, 2014). Giancarlo, also suggests that the **lack of popularity must be because of its name**, since people believe its a sweet wine, and their preference inclines more to bold ones.

This article wrote by Giancarlo, was responded by a group of producers in Dogliani (Anna Maria Abbona, Nicoletta Bocca, Paolo Boschis, Nicola Chionetti, Orlando Pecchenino, Matteo Sardagna) in an inspiring letter, suggesting that **the Dolcetto can and should have a different narrative. The producers highlight the potential of the grape and the wine itself.** Dolcetto among the wines of Piemonte is a very cheap wine, but the producers suggest that it deserves more recognition as a great wine, and not just a low cost, fresh and fruity option. To produce a high-quality **Dolcetto takes patience and time, and nowadays, many producers don’t want this in such a demanding economy and because of the quick results expected in the market.**

“...it takes time and determination to get out of a sclerotic and reassuring production and consumption model. Above all, it takes an economy that allows for investments, waiting, risks, and Dolcetto producers with their very low margins have never had this economy. A cat chasing its tail. It takes patience and patience is not the lesson of the present time, which constantly pushes us to burn stages and want results in the space of a few years when it took Dom Pérignon over forty years to perfect champagne and another hundred for Moët & Chandon to found a winery. With our 20 years of work, we are only halfway there and without even the quiet of the cloister.” (Abbona et al., 2014)

The producers also mentioned that there is a big problem with communication, since often Dolcetto gets lost in the talk when mentioning the wines of Piedmont, since Barolo, Barbaresco and Nebbiolo resonate more. Because of this, they are afraid about the market trends that push the region into a **“nebbiolization”, overshadowing the Dolcetto** variety instead of focusing on distinguishing the identity and potential of Dolcetto. If this were

to happen, Dogliani would end up being only a supplier of Nebbiolo (and Dolcetto grapes) to the Alba wineries, and risk losing its unique identity and value of the Dogliani wines. (Abbona et al., 2014)

Another article by Sophia Menin, an author and journalist who has contributed to the New York times, and it's a wine spectator, explores the uniqueness, complexity and potential of Dolcetto from Dogliani, and focus her article on Nicoletta Bocca, owner of San Fereolo and a passionate winemaker who fell in love with the region of Dogliani, and with the life in the vineyard. Sophia starts the articles highlighting the fact that **Dolcetto has the benefit that it can be consumed young while having an amazing "soft, round, and fruity" taste, while Nebbiolo is still in the cellar maturing.**

This takes us to **reflect on the characteristics which make a wine valuable and good.** Some wine enthusiasts normally think that the longer a wine is in a cellar maturing, the more valuable it is. **Then there is Dolcetto, a wine that is good without the time factor and has this added value that can take advantage of.**

Another thing special about Dolcetto, is **the passion and appreciation that the producers like Nicoletta have for it**, which takes her to invest a lot of time and patience on growing the grape and producing the wine. **This is not an industrialized process, but rather a very unique and dedicated process that should be appreciated**, but as Nicolla elaborates "Nobody is making the effort to show people that the wine can be really interesting. It's like being in love with a woman you fear, doesn't know you exist and giving up instead of fighting to get her attention." She also emphasizes by saying that "Most consumers will pay more for a mediocre bottle of Nebbiolo fermented in stainless steel than the wine she dotes on, and will question why they should purchase her Dolcetto when examples from Alba can be had at a third of the price." (Menin, 2017)

Dolcetto is in fact a hidden treasure from Piemonte, and legacy and heritage of Dogliani, that with the help of the right people, who are willing to invest their passion and love to this wine, it has the opportunity to become one of the most popular of Italy.

Image 46
"Vendemmia Di Dolcetto"
Source: Montaldo G., 2023



Spots for trasting wine

In Dogliani there are few options to have a proper wine tasting in the town, but there are more than 5 to enjoy a good glass of wine.

There is the famous **"La Bottega Del Vino Dogliani DOCG"**, an association created in 1984 by several producers of the Dogliani DOCG denomination with the objective of protecting and promoting the wine (Il Dogliani. (n.d.)). The headquarters of these associations are in the underground cantine of the former Carmelite convent beneath the Town Hall and next to the Church of Saint Quirico and Paolo. (Il Dogliani. (n.d.)) For having a wine tasting experience, there is also "Il Vinioso", located near Piazza Umberto, where you can also enjoy an aperitivo and buy several local products. Other restaurants that offer also "aperitivo": "400 Dogliani Trading Post", "Neh!", "Locanda del Maestro", "Retro", the nearest o Forace Gaiero, and also offers brunch on sundays, "Casarico Connubio" and finally "Và Lnaga Bistrot", that offers also a panoramic view of the Belvedere di Castello. (Dogliani Turismo. (n.d.))

Map 08- Places for drinking wine in Dogliani

Map of Dogliani
Source: Drawn by the author based on the analysis



2.12. Synthesis *Dogliani*

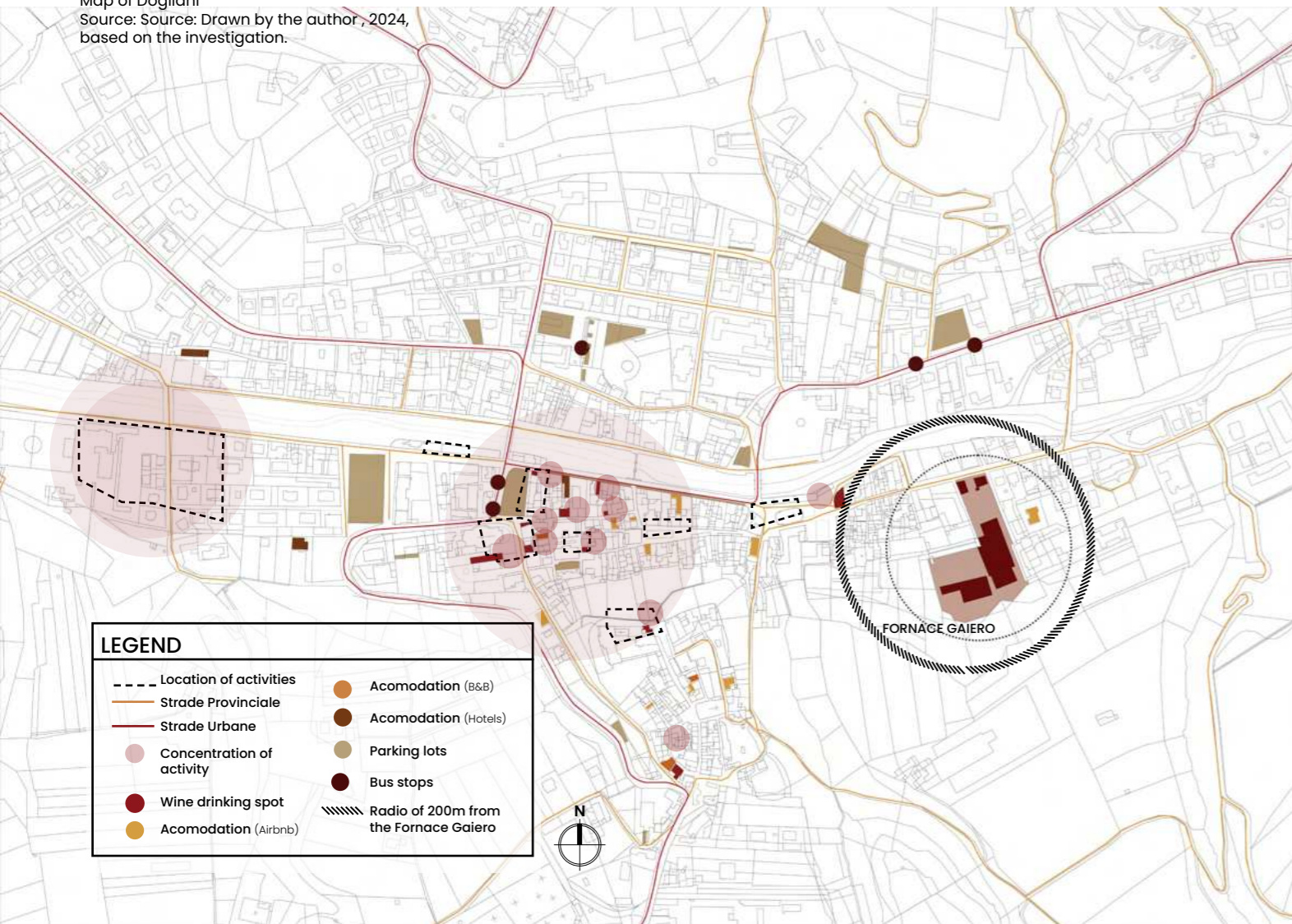
This map of Dogliani provides a synthesis of the analysis and an overview of the town's main activity areas. It shows and highlights the accommodation options, parking, transportation, and social hubs.

The map identifies key locations for wine-drinking spots and different types of accommodations such as B&Bs, hotels, and Airbnbs, specifically located in the **historic center**. However, Dogliani faces some **challenges regarding infrastructure and services for tourism**: Limited accommodation options, and the Agrotourism are very far away are not shown in the map) and its necessary the use of car. Limited parking facilities that could affect when there is a high number of visitors, especially during peak events and poor connectivity of public transportation.

The Fornace Gaiero, located on the perimeter of the city center, but still within a walking distance of it, presents an opportunity to address some of these issues. With a 200-meter radius highlighted, it shows potential as a central space that could consolidate **various functions** and mitigate the uses or create more new spaces for the community appropriation. The adaptive reuse of Fornace Gaiero could not only support the town's infrastructure needs but also integrate its cultural and economic landscape.

Map 09- Analysis synthesis

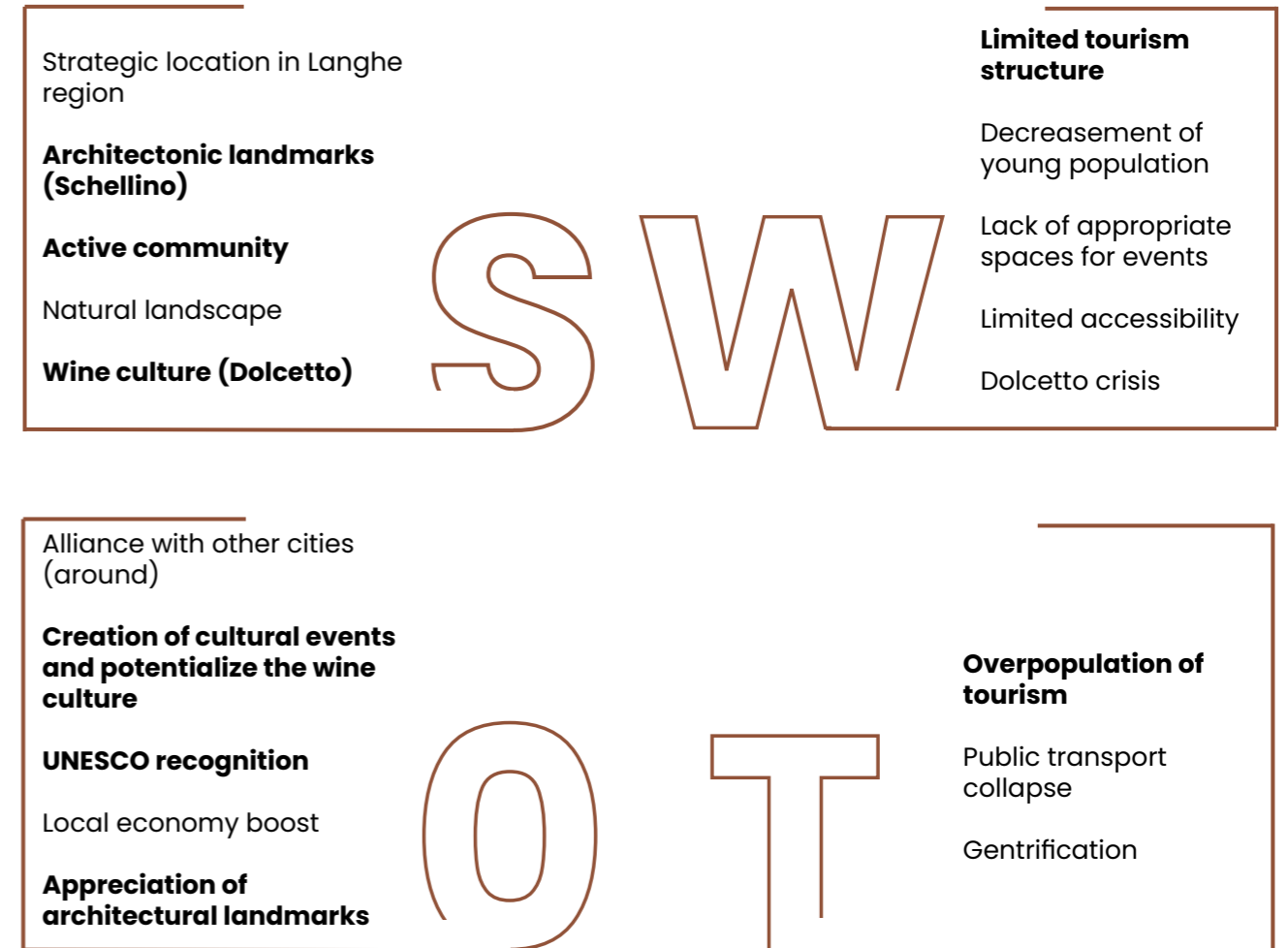
Map of Dogliani
Source: Source: Drawn by the author, 2024, based on the investigation.



2.13. SWOT analysis

Dogliani, located in the culturally rich Langhe region, have a **strengths** such as its historic significance, Schellino's architectural landmarks, a strong wine culture, an active community, and a picturesque natural landscape. However, the town faces **challenges**, including limited tourism infrastructure, a decreasing young population, lack of promotion, limited accessibility, and a crisis in Dolcetto wine production. **Opportunities** exist for growth through alliances with neighboring cities, cultural events that enhance the wine culture, UNESCO recognition, and the appreciation of its architectural heritage. Nonetheless, **threats** like over-tourism, potential public transport strain, and risks of gentrification could impact Dogliani's character.

Figure 22
SWOT analysis diagram
Source: Source: Drawn by the author, 2024, based on the investigation.



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03

FORNACE GAIERO

- 3.1 History, site and production
- 3.2. Brick production
 - 3.2.1 Brick catalogue
- 3.3 Current preservation state
 - 3.3.1 Decays representation: North facade
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- 3.6 References

FORNACE S. QUIRICO DI GAIERO ARRIGO E C. - S.A.S.

Industrial Heritage

DOGLIANI, CUNEO

Via Martinengo, 36 - 12063

Image 47

Fornace Gaiero

Source: FAI 2022



3.1 History, site and production

The Fornace S. Quirico di Gaiero Arrigo' is an **industrial heritage** with a significant historical and cultural site, **from the 19th century located in Dogliani**. Is considered by the Commune of Dogliani as a **place of interest** and has been recognized by **FAI (Fondo per l'ambiente Italiano)** – an organization that was created to protect the beauty of Italy, and to give value to lesser-known sites that are often overlooked – as one of the **"Luoghi del Cuore."** (**Fondo Ambiente Italiano, n.d.**)

The site itself features a **large outdoor area** where historical artifacts are still exposed. The main building, known as the **'cathedral'** due to both its size and organization, contains a **central nave** where **two kilns are located**. Besides this central space are **two secondary naves**, which were historically used for the **transportation of bricks and as areas for drying them**. Additionally, the building is distinguished by a **54-meter-high main chimney**, the defining feature of the Hoffmann kiln. Surrounding the main factory, several **complementary structures** were added, including a **cistern, a supplementary metal framework, storage buildings, and workshop or office spaces**.

The Antica Fornace Gaiero is known for its **circular Hoffmann kiln** used for the **continuous production of clay products**, mainly bricks but also other decorative elements. It stands out for maintaining traditional and artisan production methods, exclusively using natural elements—earth, water, air, and fire—without any additives. This ensures that the materials are both healthy and environmentally friendly.

Figure 23
Site axonometry of Fornace Gaiero
Source: Drawn by the author , 2024

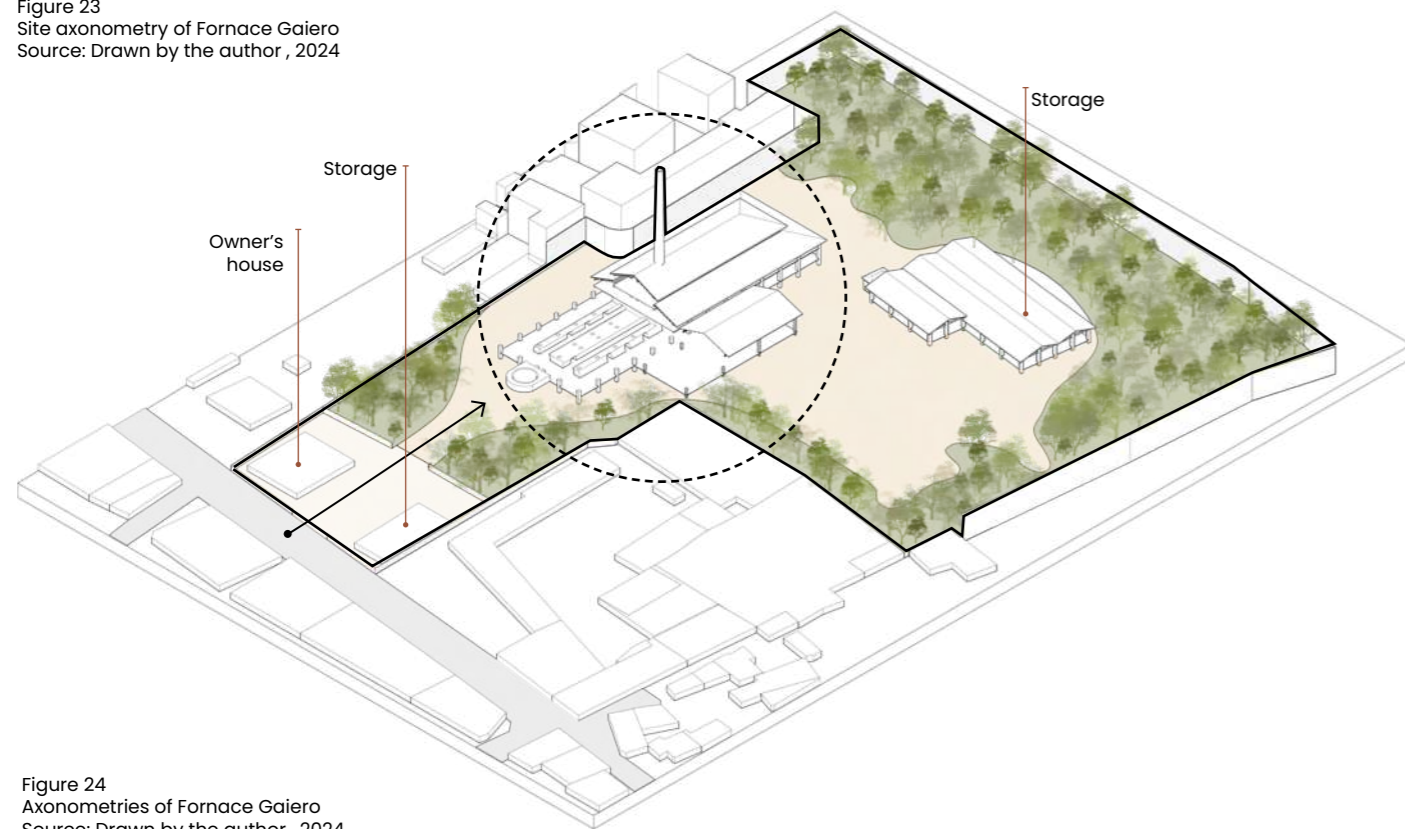
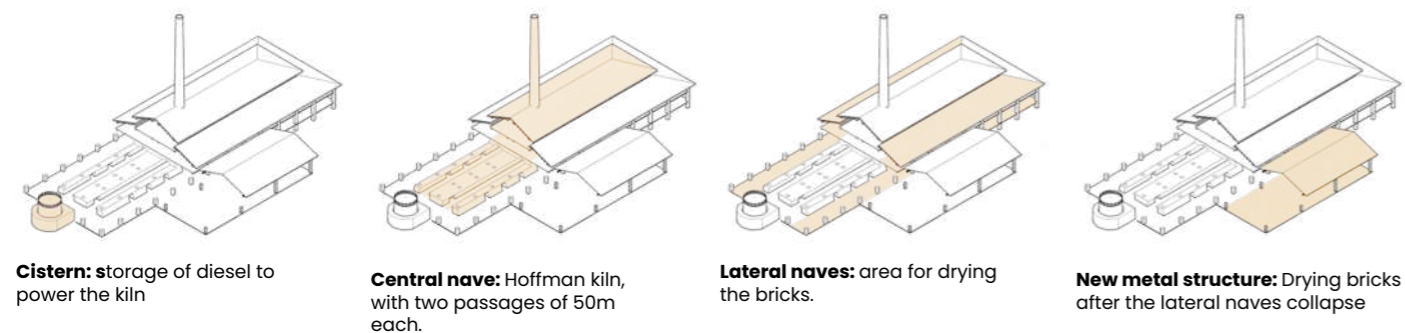


Figure 24
Axonometries of Fornace Gaiero
Source: Drawn by the author , 2024



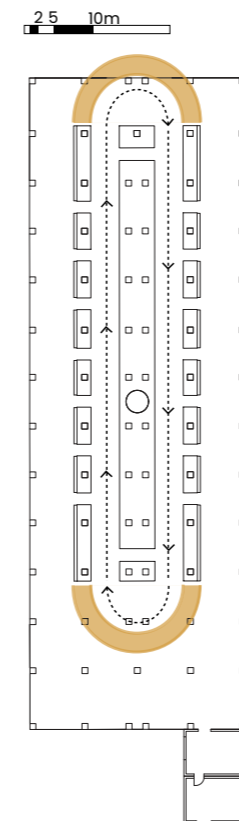
Cistern: storage of diesel to power the kiln

Central nave: Hoffman kiln, with two passages of 50m each.

Lateral naves: area for drying the bricks.

New metal structure: Drying bricks after the lateral naves collapse

Figure 25
Source: Drawn by the author , 2024



Demolition

Circular flow of fire

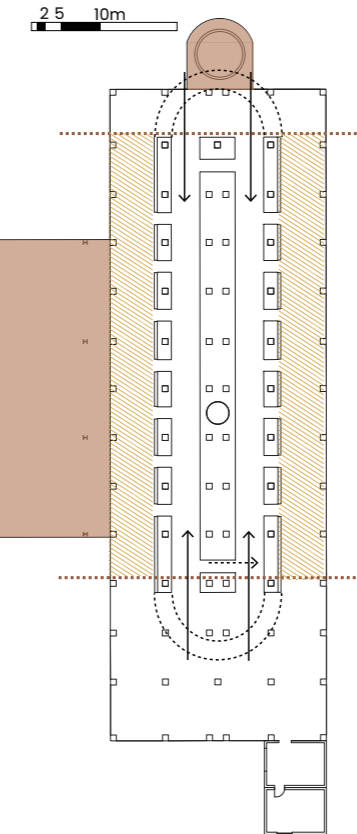
New construction

Unused area

Used area

Entrance to kiln

Figure 26
Source: Drawn by the author , 2024



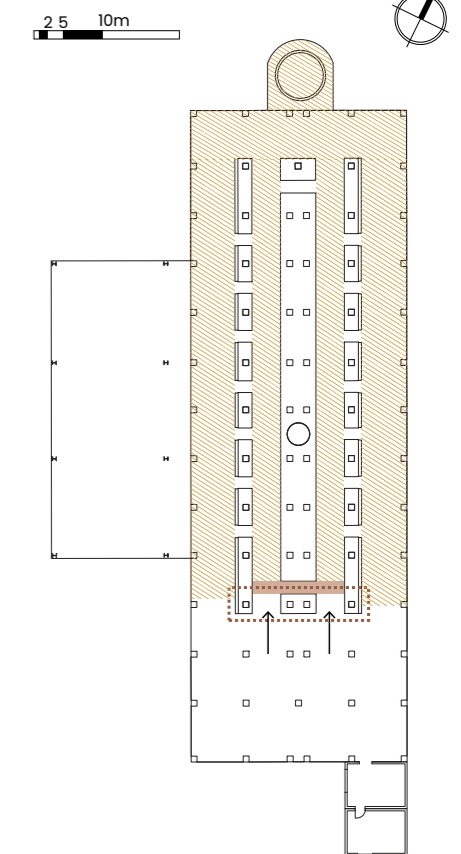
New construction

Unused area

Used area

Entrance to kiln

Figure 27
Source: Drawn by the author , 2024



Used area

Entrance to kiln

This continuous production was made possible to the shape of the building, with a circular layout as shown in Fig. 25. According to Arrigo, the owner of Fornace Gaiero, his grandfather originally designed this building as a traditional Hoffmann kiln. This allowed it to function without needing to be turned off, and therefore ensuring a non-stop production.

Over the years, with the arrival of new machinery that replaced manual labor as this method became less efficient, since to collect a small amount of bricks workers needed to enter the kiln from the sides and risk their life entering inside these high temperatures. **Around the 1960s, four larger entrances were created for entering with kiln carts and being able to extract more quantity of bricks at once.** For this, the building was sectioned at its ends, altering the traditional form of a circular Hoffmann kiln (Fig. 26). **Additionally, new extensions to the building were made to the main structure during this period** according to Arrigo. Among these were the cistern, a circular element located at the top of the building, that was used to store diesel fuel that powered the kiln. and a metal structure that provided extra space for drying the bricks.

As the years passed, production gradually declined, and there were fewer and fewer workers in the factory until only the owner remained. For this reason, **he decided to build a brick wall and section off the kilns (Fig. 27, Image 48), using only a small portion of the furnace for a reduced production**, as it was no longer necessary to fire up the entire kiln. This was the last modification he made.



Image 48
Hoffmann vault and area of production remaining
Source: Photo by the authors, 2024



Image 49
Hoffmann kiln doors
Source: Photo by the authors, 2024

These modifications came also, with a **change in the uses of the Fornace**, reflecting the **overall decline of the space**. In the following floor plans (figure 28 and 29), it can be observed a comparison of the site's uses, showing how today **only a small portion of it is operational**. Another factor that contributed to these changes and that altered the use of the spaces was the **structural decay**, which happened mainly due to a lack of maintenance and neglect.

According to the owner, a significant **snowstorm** in February 2009 completely **destroyed** parts of the factory, such as the **roof of the west wing** and the **first floors on both sides**, leaving the area where he used to dry the bricks unusable. As a result, he began drying the bricks under the metal structure he had built in the 1960.

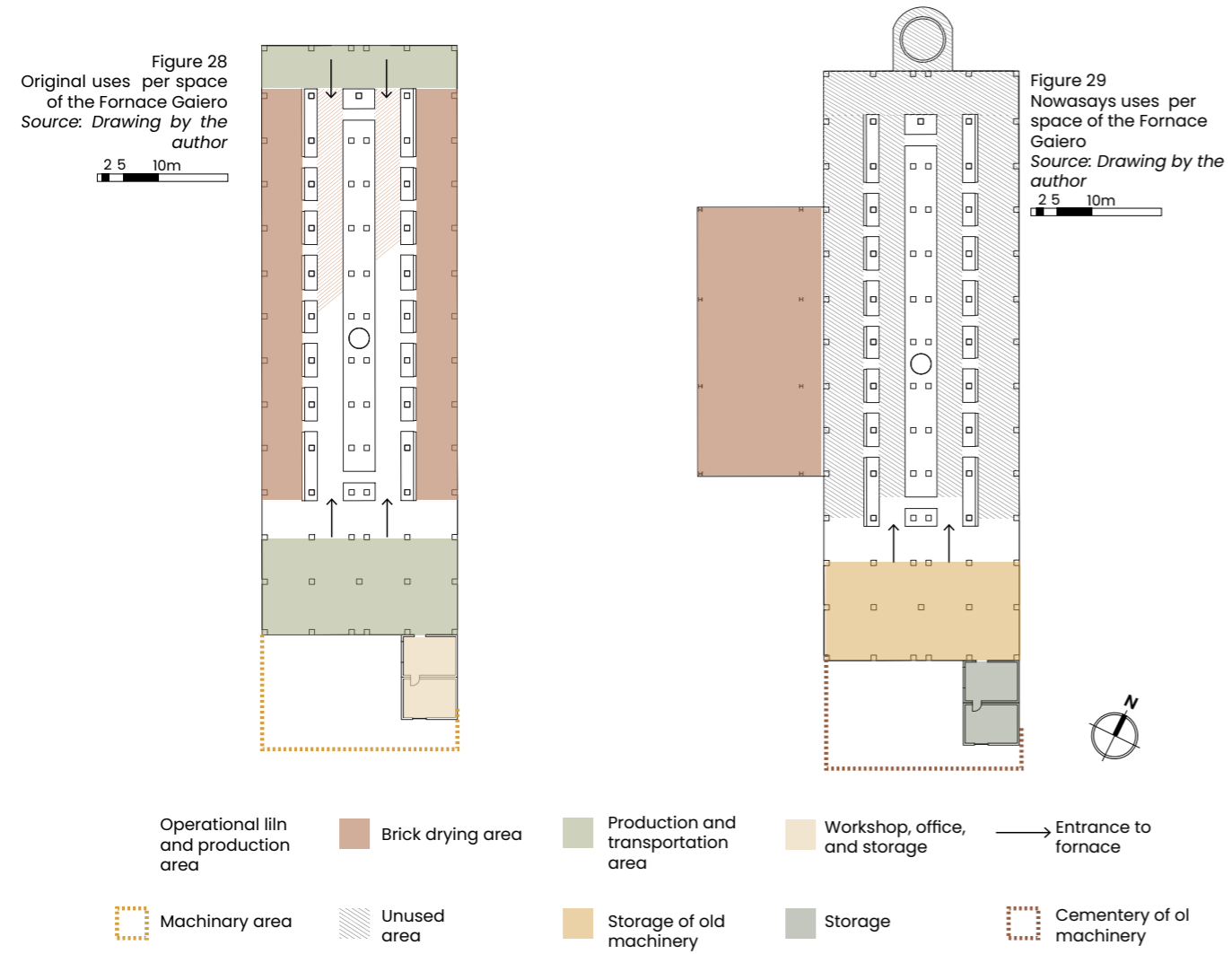


Image 50
Collapsed floor from the lateral naves
Source: Photo by the authors, 2024



Image 51
Cemetery of old machinery
Source: Photo by the authors, 2024



Image 52
Cemetery of old machinery
Source: Photo by the authors, 2024



Image 53
Auxiliar metallic structure
Source: Photo by the authors, 2024



Image 54
Exterior patio with pile of bricks and debris
Source: Photo by the authors, 2024

3.2 Brick production

The soil and clay used for brick production were collected in the past from the mountain adjacent to the factory. The Gaiero family operated a **cable car system that transported raw materials directly from the mountain to the factory**. Inside, a small freight elevator, or **'montacarico,' was used to lower the collected clay to the first floor**. The factory's machinery was powered entirely by a single motor, allowing the entire facility to run efficiently, resulting in a more continuous and automated production process. After the clay went through various refining stages, it was molded into bricks of different sizes and shapes using wooden or iron molds, which were then fired in the Hoffmann kiln to produce the final product.

Over the years, however, the factory underwent a period of degradation and neglect, that followed numerous modifications. The once busy **site became a scene of disrepair, with piles of bricks** it had once produced scattered in heaps, and the overall area left dirty and uncared for.



Image 55
Stockpile of bricks in patio
Source: Photo by the authors, 2024



Image 56
Stockpile of bricks and elements in patio
Source: Photo by the authors, 2024



Image 57
Pile of bricks in patio
Source: Photo by the authors, 2024



Image 58
Back side of the Fornace
Source: Photo by the authors, 2024



Image 59
Old ornamental bricks
Source: Photo by the authors, 2024

Until nowadays, **the owners preserves the wide range of production, including bricks of various formats, paving stones, special pieces for columns, wells, steps, fireplaces, flower boxes, and garden materials**, as well as the **extensive collection of iron machinery and original wooden molds from the 18th and 19th centuries**. Among these, the collection of **molds used by architect Giovanni Battista Schellino from the late 1800s** for his eclectic and neo-Gothic works and those from the award-winning Fornaci Sordi from 1896 are particularly noteworthy.

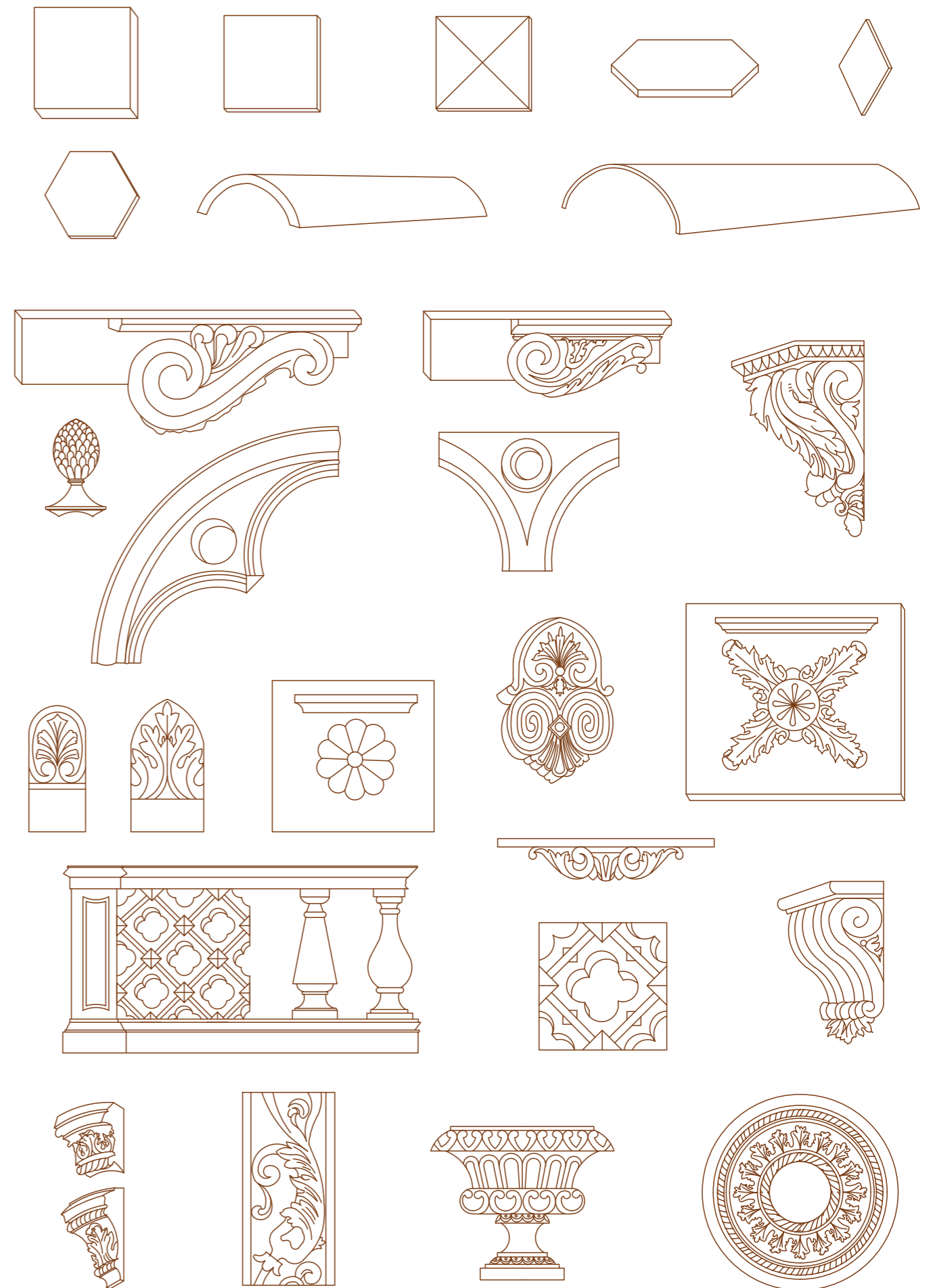
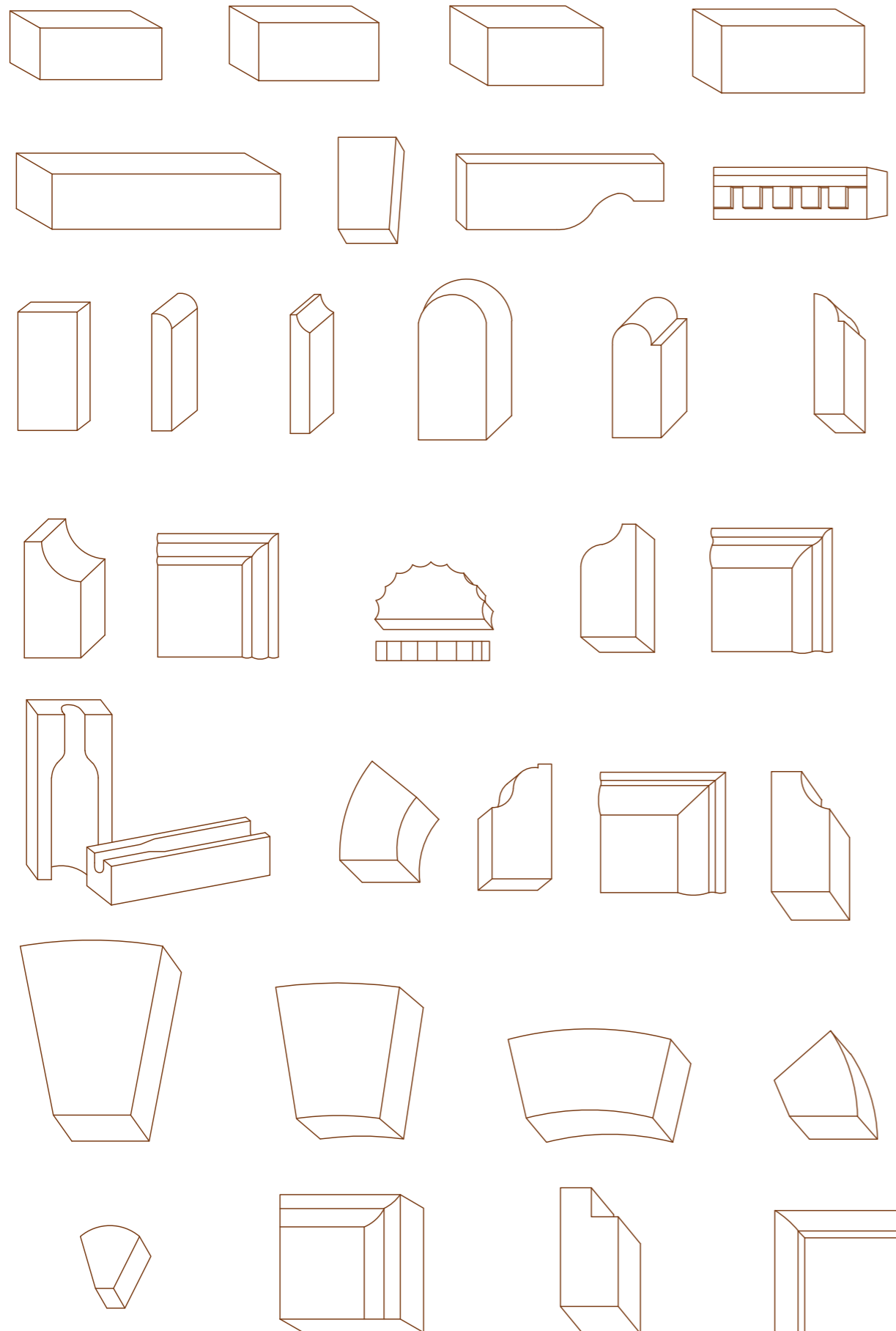
The production methods and tools continue to allow the furnace to meet specific client demands, either by creating new models or modifying existing ones. This diversity highlights Fornace Gaiero's capacity to meet various architectural needs, and was a key player in regional construction during its time. According to Carlo Gaiero & S.A.S., **"The methodology of work and the means used to make the products make it possible to meet the most particular needs, either through the creation of 'new' models according to the customer's specifications, or through the modification of existing ones in many of their measurements."**

This adaptability in production shows the significance of brick as a **highly customizable and versatile** building material, which played a crucial role in **local heritage**, especially in areas with a rich architectural history like Dogliani. As historic brick factories like Fornace Gaiero generate architects to realize **distinctive designs, they contributed to defining the architectural identity of the region**.

A notable recent project involved the restoration of the access steps to the Sanctuary of San Quirico, originally designed by Schellino. The steps, which had fallen into severe disrepair, were restored using handmade bricks from Gaiero's furnace. (Galleano, L. 2013). The restoration successfully returned the steps to perfect condition, highlighting the enduring relevance and application of traditional brick-making methods in preserving and enhancing architectural heritage.

3.2.1. Brick catalogue

Figure 30
Brick catalogue
Source: Drawing by the author referred from Gaiero Carlo S.A.S. (n.d.).



3.3 Current state of preservation

Fornace Gaiero has nearly two centuries of history, and represents a significant example of **industrial heritage in Dogliani**. This brick kiln complex showcases traditional masonry techniques of the era, characterized by the use of durable materials and meticulous craftsmanship such as bricks and wood. Despite its historical and architectural value, **Fornace Gaiero has not undergone substantial restoration or conservation throughout the years.**

As a result, the building contains a variety of forms of **deterioration, representing the aging of the structures**. Even Though bricks are a commonly used material, they show advanced signs of weathering and material degradation. This includes **extensive cracking, mortar joint erosion, and brick spalling, all exacerbated by prolonged exposure to environmental factors**. The roof structure has also deteriorated, with wooden beams affected by rot and biological alterations, and roof tiles have moved or broken, leading to water infiltration and its interior has been also compromised, although the building is an open air structure meaning no windows or closure walls.

This section provides a detailed analysis of a part of the building's current condition, focusing on the **specific decays affecting the structural and non-structural components**. By analyzing these decays, this study aims to identify **appropriate conservation and intervention strategies**. The final goal is to preserve the integrity of this industrial heritage site while thinking about a possible adaptive reuse project that leads to a new life for the building integrating its actual partial use and generating more activities to incentivize its program. Fornace Gaiero can be revitalized, ensuring its continued relevance and sustainability for future generations.

Structural system

The structural system of the Fornace Gaiero combines **brick, wood, and metal elements**. The building's walls are primarily made of fired-dried bricks, which provide strength and durability. During restoration intention, **sun-dried bricks** were introduced in some areas, replacing or complementing the original materials, however this intervention can be less durable. The upper floors are made of **wood and have metal beams** that were added to reinforce the structure and support the building's weight. This combination of materials reflects both the original construction methods and the necessary interventions to restore and preserve the building's historical integrity.



Ref. Image 70
Wood floor, metal beams
and brick column



Ref. Image 85
Fired-brick and sun
dried bricks



Ref. Image 87
Fired-brick and sun
dried bricks

Image 60
Chimney of Hoffmann Kiln
Source: Photo by the authors, 2024



3.3.1 Decays representation: North facade

Scale 1:150



Figure 31
North Facade
Source: Drawn by the authors based on the site visit.

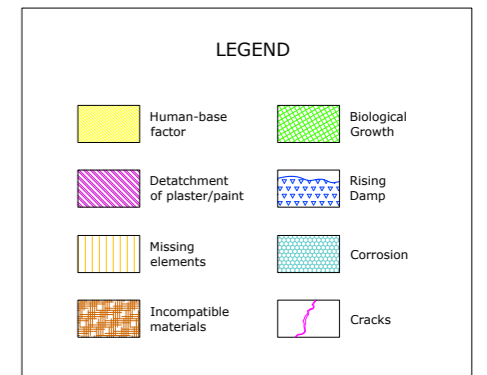
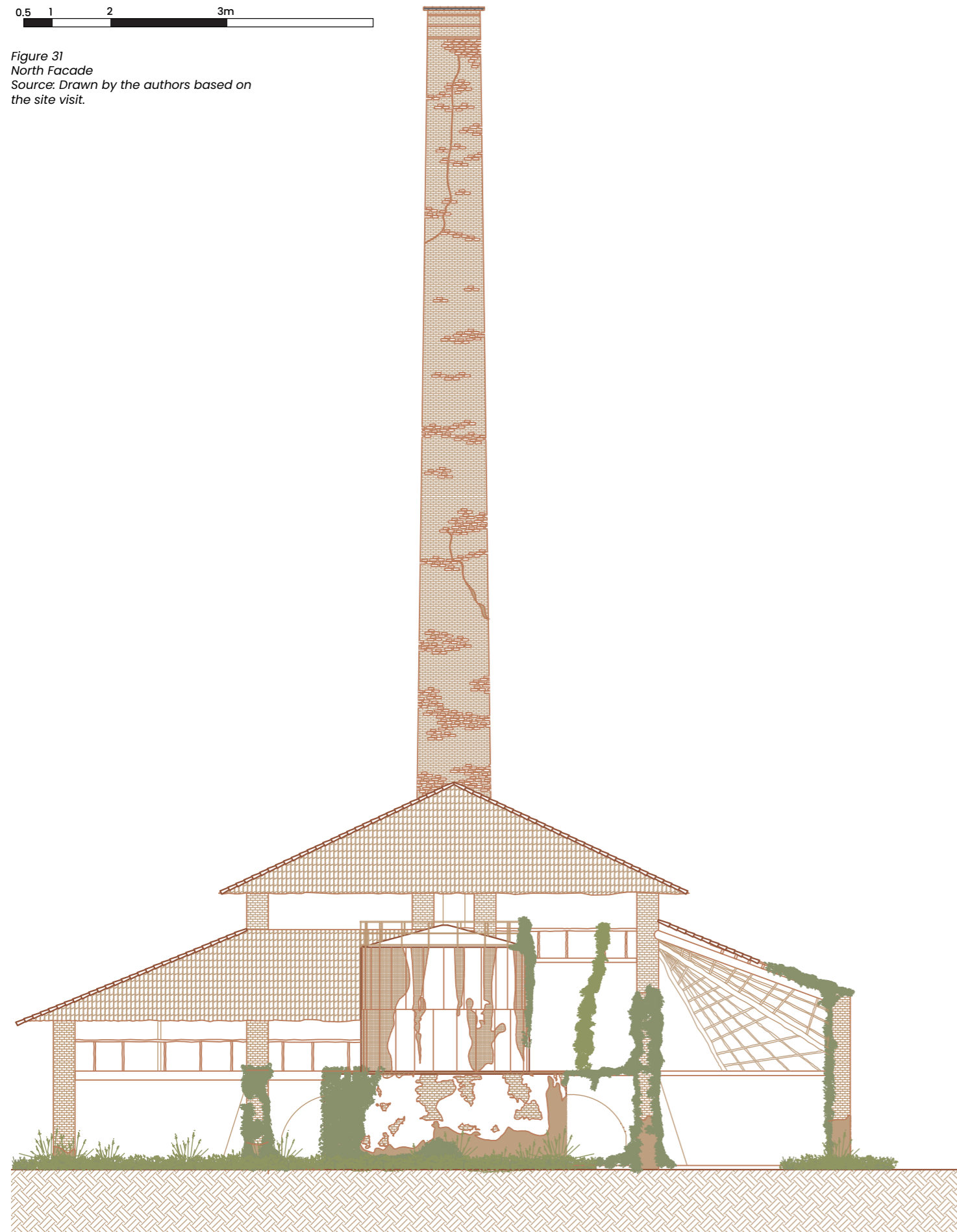
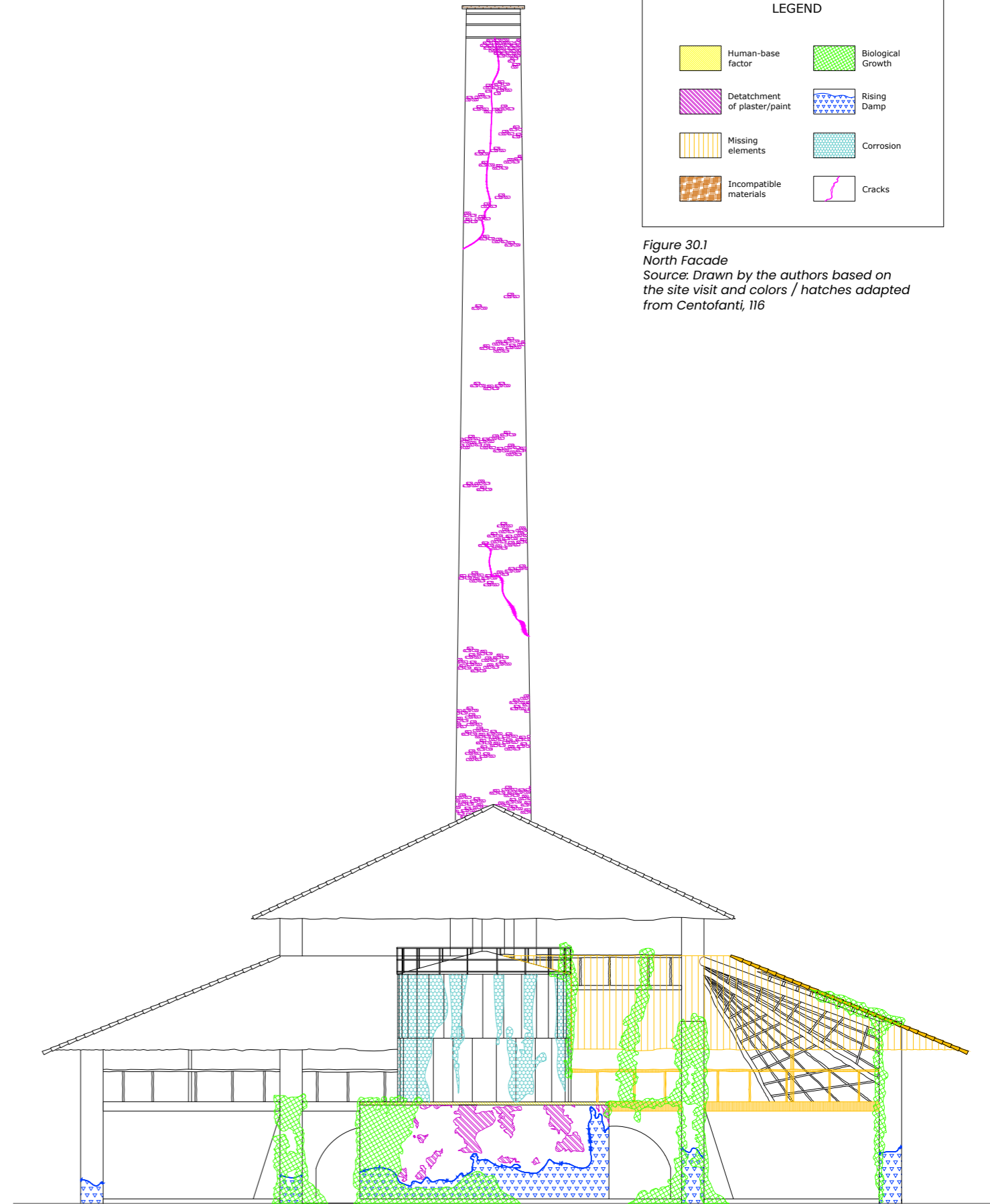


Figure 30.1
North Facade
Source: Drawn by the authors based on the site visit and colors / hatches adapted from Centofanti, 116



3.3.2 Decays representation: East facade

Scale 1:250

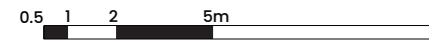
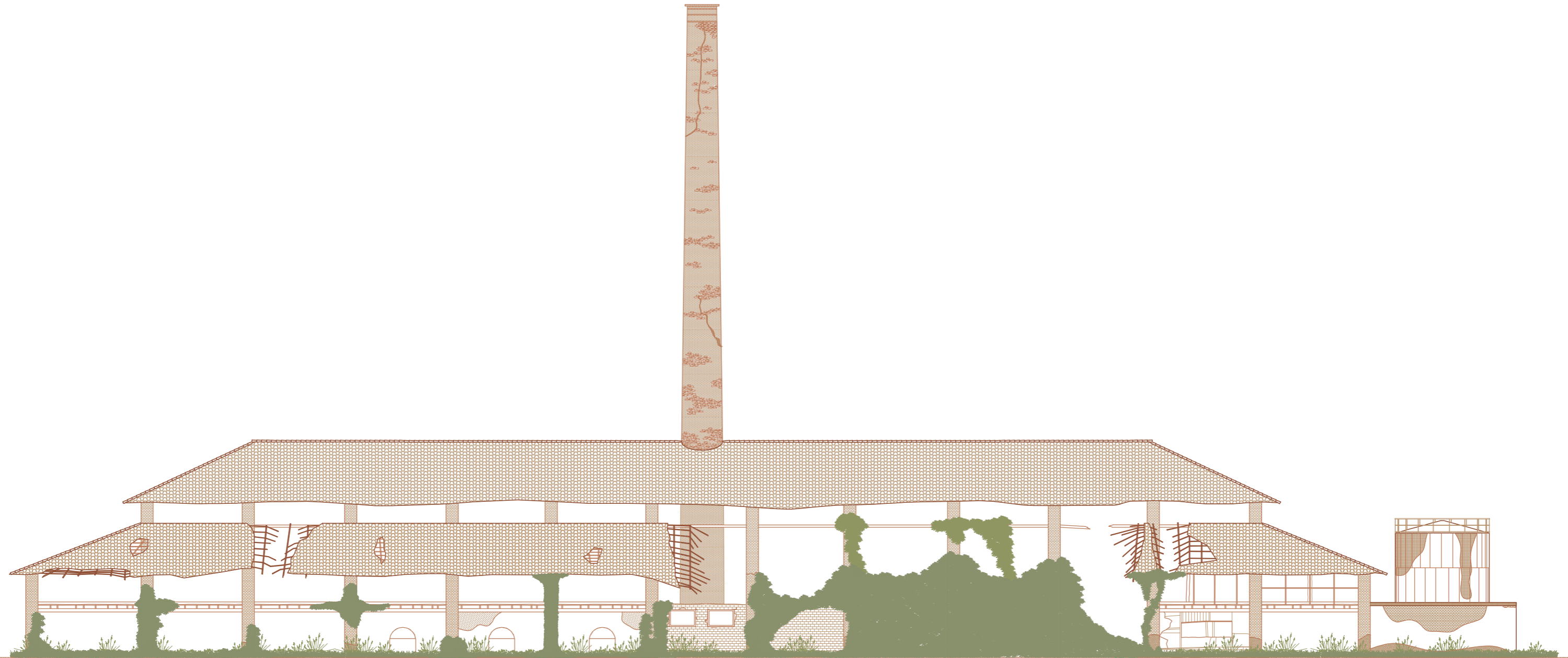


Figure 32
East Facade
Source: Drawn by the authors based on
the site visit.



3.3.2 Decays representation: East facade

Scale 1:250

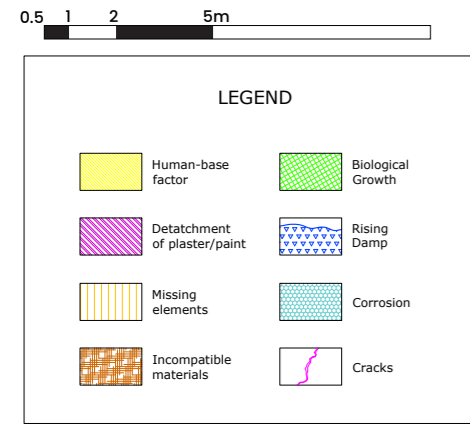


Figure 32.1
East Facade
Source: Drawn by the authors based on the site visit and colors / hatches adapted from Centofanti, 116



3.3.3 Decays representation: West facade

Scale 1:250



Figure 33
West facade
Source: Drawn by the authors based on the site visit.



3.3.3 Decays representation: West facade

Scale 1:250

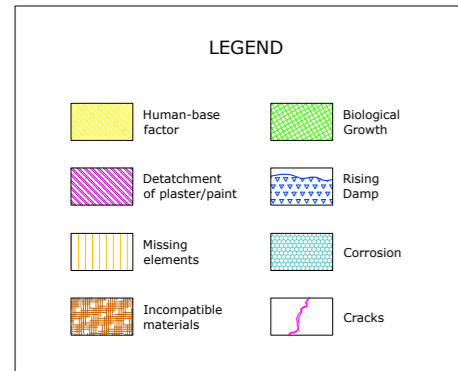
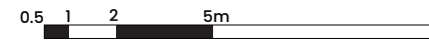
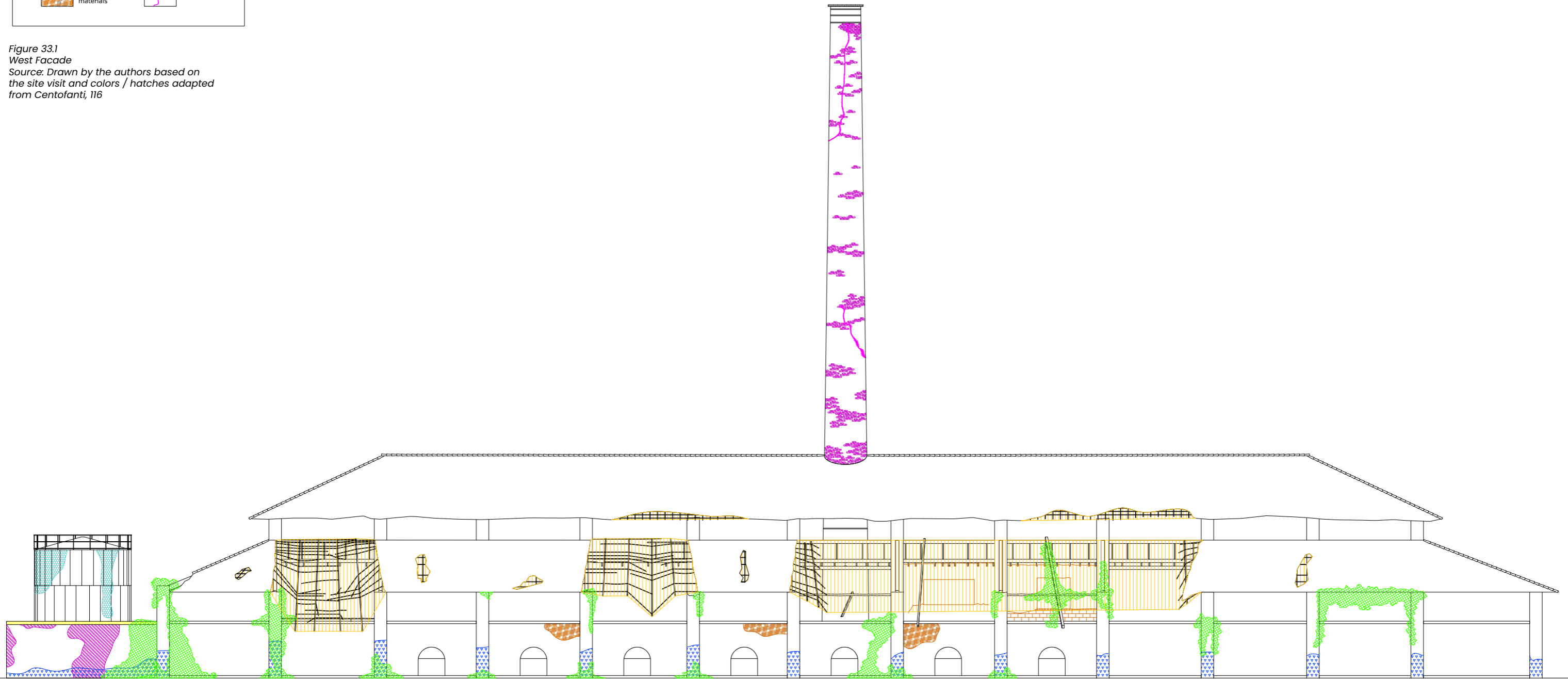


Figure 33.1
West Facade
Source: Drawn by the authors based on the site visit and colors / hatches adapted from Centofanti, 116



3.4. Decay analysis

3.4.1 Rising Dump

Humidity is one of the most significant factors contributing to the deterioration of building materials. **Rising damp** is a phenomenon where **groundwater rises** through the capillaries of porous materials (Setherton, G., 2024). As the **moisture evaporates, it leaves behind salts that crystallize** (Img. 61 and 62). This process can lead to the detachment of plaster and paint (Img. 63) and, more critically, weaken the structure over time, including wooden elements. Rising damp can lead to **brick erosion and efflorescence**.

Currently, most of the **columns and walls** are affected by rising damp. This issue is often caused by the **absence of a damp-proof** course or inadequate waterproofing between the ground and structural elements (British Damp Proofing, 2022).

To treat rising damp, one effective solution involves **installing a damp-proof course**. This process requires drilling into the walls and injecting a high-concentration **Dryzone DPC cream solution**, which restricts the movement of water through the capillaries (Rentokil, 2024). Alternatively, a **damp-proof membrane** can be installed to achieve a similar effect (Setherton, G., 2024).



Image 61
Column with rising damp, brick color intensification
Source: Photo by the authors, 2024



Image 62
Column with rising damp, brick color intensification
Source: Photo by the authors, 2024



Image 63
Detachment of plaster and paint
Source: Photo by the authors, 2024

3.4.2 Efflorescence

Another **humidity-related decay is the efflorescence** where **salts from evaporated water attach to the surface producing white powder deposits** (img. 64, 65, 66) and normally occurs on masonry elements such as concrete, bricks and stones. In the first instance it is considered as an aesthetic factor that indicates the presence of moisture in the structure, but if it is not treated over time, **this can lead to causing internal pressure and weakening of the structure** or **spalling** which means that the material flees or breaks due to an internal stress. (Palmero, P. 2023)

Efflorescence may be solved by **cleaning the surface with water with a pressure washer machine**, “however, using water can bring more salt to the surface, and there is a risk of efflorescence resurfacing.” (Asianpaints, n.d). Another method is to use a brush to remove it from softer surfaces, “However, this method is just a temporary solution as it doesn’t treat the root cause of the problem” (Asianpaints, n.d). There are other solutions such as applying **chemical cleaners, diluted vinegar, sandblasting and waterproofing chemicals**. (Asianpaints, n.d)

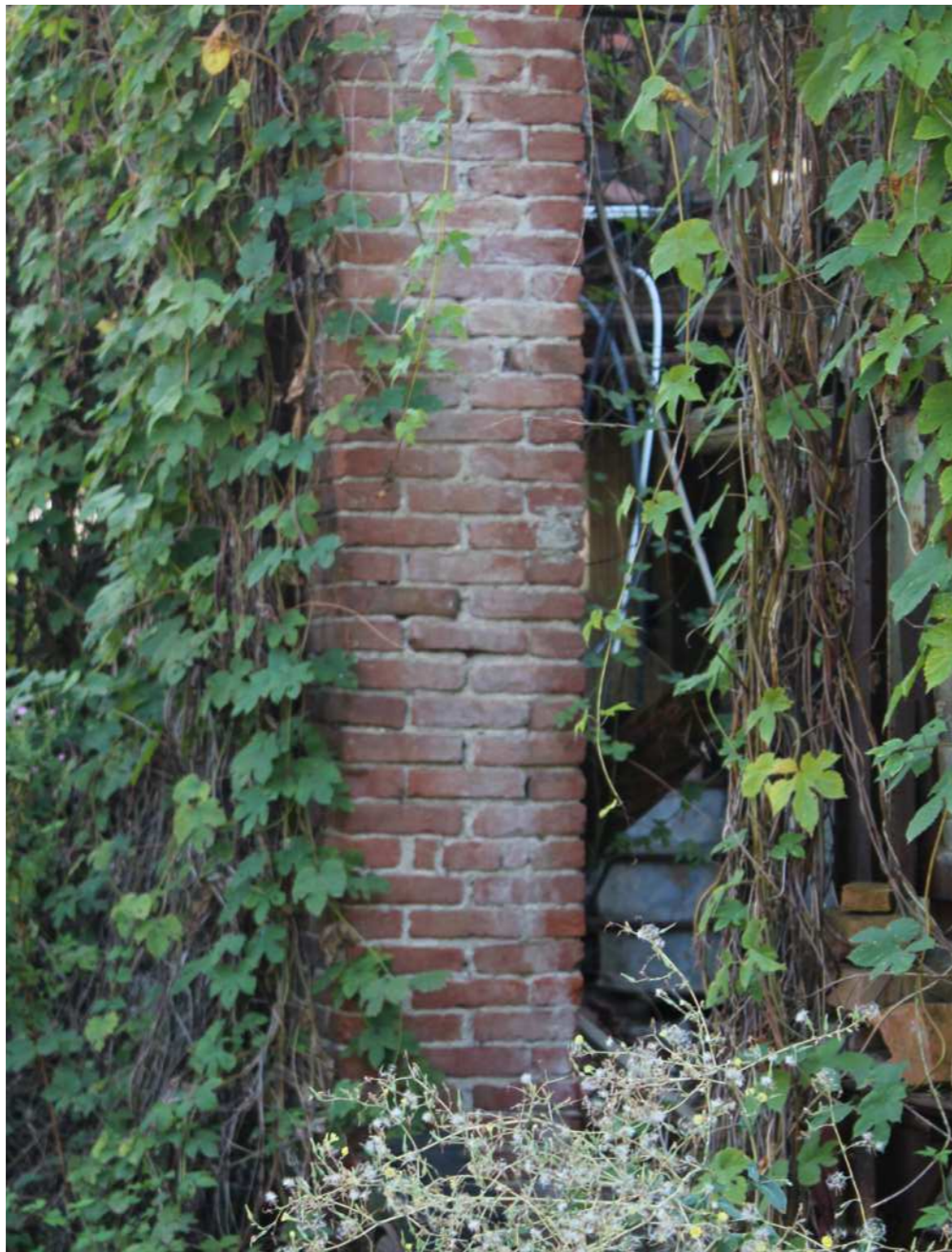


Image 64
Efflorescence, salt deposits
Source: Photo by the authors, 2024



Image 65
Efflorescence, salt deposits
Source: Photo by the authors, 2024

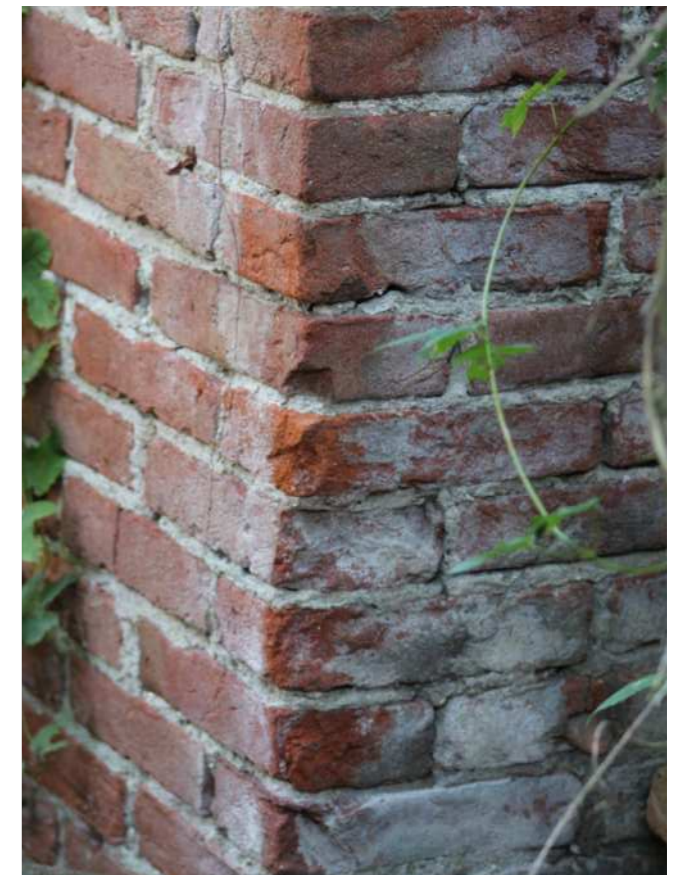


Image 66
Efflorescence, salt deposits
Source: Photo by the authors, 2024

3.4.3 Freeze-thaw cycles

Taking in mind that Fornace Gaiero is located in a **seasonal area where temperatures can increase and decrease drastically**, the building is exposed to environmental cycles that cause physical **stress on materials and this leads to decays over time.**

Freeze-thaw cycles decays are caused when water that is filtered through the pores or cracks of the materials expands when it freezes. **When water freezes and defrost overtime, it can lead to the material cracking or disintegrating** (Img. 67, 68, 69). (Palmero, P. 2023). Masonry can be protected by sealing the bricks with “breathable sealant to your masonry helps repel water while allowing moisture inside the material to escape” (Turnbull Masonry, 2024)



Image 67
Expansion of the bricks leading to cracks
Source: Photo by the authors, 2024



Image 68
Cracks on the Hoffmann Kiln walls
Source: Photo by the authors, 2024



Image 69
Cracks in the chimney
Source: Photo by the authors, 2024

3.4.4 Wet-dry cycles

Wet-dry cycles have similar effects when materials expand when they are wet and contract when they dry. **These climate conditions can cause stress in the material, especially in wooden elements that can crack, warp or rot** leading to loss of material integrity (Img. 70, 71, 72). (Palmero, P. 2023).

To solve this issue and prevent it from continuing deteriorating the structure, it is necessary to find the damaged parts and dry it as much as possible. Then, if possible, remove the parts of the structure that are softer or that tears apart. "Soft, weak areas of wood can be easily picked away and discarded. Visibly rotten areas must be cut away or discarded wholly with a suitable sharp knife or saw." (Safeguard, n.d). After the damage structure has been removed, **"a biocidal treatment must be applied to the entire timber object"** (Safeguard, n.d). Another solution is removing the affected piece, "any affected timber may need to be either repaired or replaced as needed. This is especially important where cases of dry rot have impacted structurally important timber, which is vital to your property's health" (Timberwise, 2023).



Image 70
Cracking wooden floor
Source: Photo by the authors, 2024



Image 71
Wooden Roof deterioration
Source: Photo by the authors, 2024



Image 72
Wooden roof deterioration
Source: Photo by the authors, 2024

3.4.5 Corrosion

Chemical decay refers to chemical reactions between materials and environmental factors. One of the common ones is corrosion that affects metal such as **steel beams that are exposed to humidity**, especially when it carries salts and air, this combination leads to rustiness. When metal beams that are attached to **brick columns expand**, they can generate cracks on the columns and **weaken the structure**. As reinforcement of the structure and the floors, steel beams were placed, in the beginning these beams were covered with wooden floors that have been falling since the building was abandoned.

As a result of the exposure to water, the elements are affected structurally and physically leading to **corrosion (Img. 73, 74), bending (Fig. 75) and even expanding other materials as the brick** columns that support the beams that nowadays are cracked and even with missing bricks fixed with mortar to prevent the structure from falling apart. (Img. 76) (Palmero, P. 2023).

For fixing corrosion, **"rust must then be removed from the in-situ steel.** This can be done through using **rust-removing solutions.** These chemicals would be able to remove any signs of rust on your steel section. The steel can then be **grinded, scrubbed, or any number of standard methods (...)** Appropriate tools such as wire brushes, sand blasters, water blasters, or a myriad of other acceptable tools should be used" (Remedial, 2021). Even though this method may work, if the piece is in an advanced state of decay, it should be replaced and apply coating to be protected. **"Rust-proof steel coatings put a protective layer** on the metal surfaces that represses the contact between the metal and corrosive elements" (Remedial, 2021).



Image 73
Corrosion on structural column



Image 74
Expansion of beam and cracking of brick column



Image 75
Expansion of beam and cracking of brick column



Image 76
Bending beam supporting what used to be a wooden floor
Source: Photo by the author

3.4.6 Growth of biological organisms



Image 77
Ivy leaved embedded in structure and creating more weight and more moisture
Source: Photo by the authors, 2024

Fornace Gaiero has been exposed to the environment since its abandonment, **this exposure encouraged the growth of biological organisms** that can accumulate moisture **creating micro-environment such as algae, moss, lichens and fungi in the surfaces.**

In masonry, these organisms can grow roots and break the surface (Img. 81), while in wood elements it can generate rot and material degradation. Each column and even the roof, to varying degrees, are being **overtaken by Hedera Helix or Ivy leaves** that are growing uncontrollably, **adding extra weight to the structure and embedding itself in a way that causes the brickwork, wooden roof and steel beams to expand, increasing moisture levels** (Img. 78, 79, 80).

Some of these columns have mold growth, which is accompanied by **rising damp and efflorescence** (Img. 83). (Palmero, P. 2023). There are different types of biological growth and its treatment may vary depending on each one of them. Trees that grow near the building or sometimes on top, may be solved by "felling, topping, lopping and/or selective pruning, subject to legislative protection. Removal of trees may result in the volumetric expansion of shrinkable soils (heave) and changes to sub-surface water levels (...) preferably by removing them, as re-growth and compressible decay may result in damage" (Watt, D. 2019).

Another type of biological growth is the Ivy and the creepers **"may be treated by cutting a section out from the main stem(s) and allowing the plant to die back naturally over a period of time.** The parent stem(s) should also be treated using an appropriate chemical paste or crystal product" (Watt, D. 2019).

Even though this may seem easy, it needs to be done carefully because these plants tend to wrap and sometimes they embed into the structure and removing them in an inappropriate way could cause many damages. Lichens, algae, fungi and mosses may be solved by removing them manually or by **"chemical control using appropriate biocidal products** may also be appropriate, but generally they should only be considered in exceptional circumstances" (Watt, D. 2019).



Image 78
Ivy leaved embedded in structure and creating more weight and more moisture
Source: Photo by the authors, 2024



Image 79
Ivy leaved embedded in structure and creating more weight and more moisture
Source: Photo by the authors, 2024

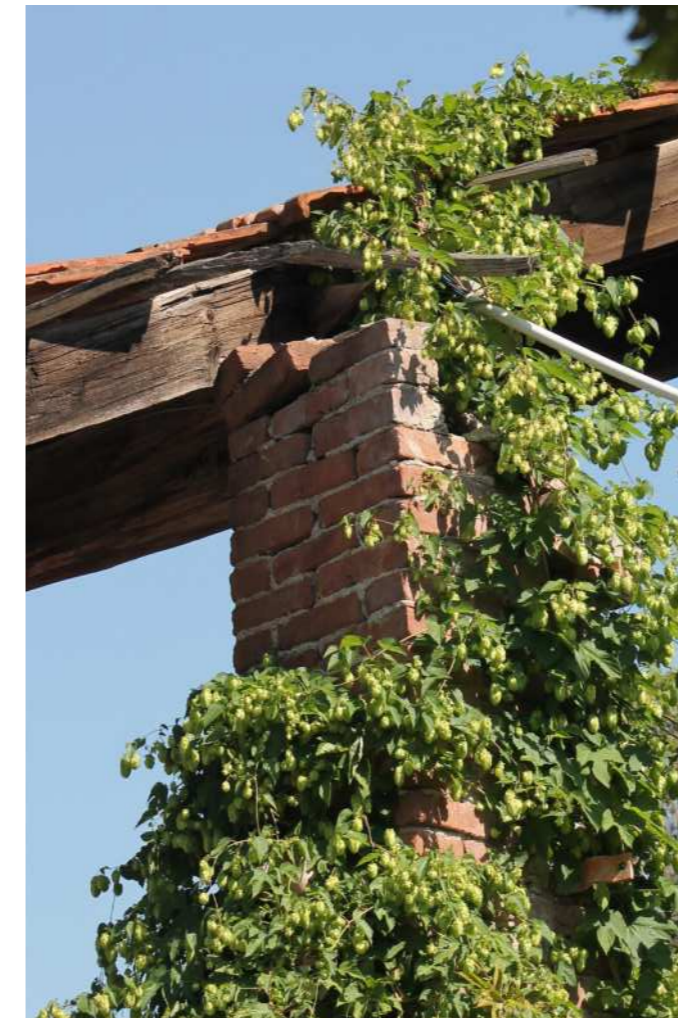


Image 80
Ivy leaves wrapping around and breaking the structure
Source: Photo by the authors, 2024

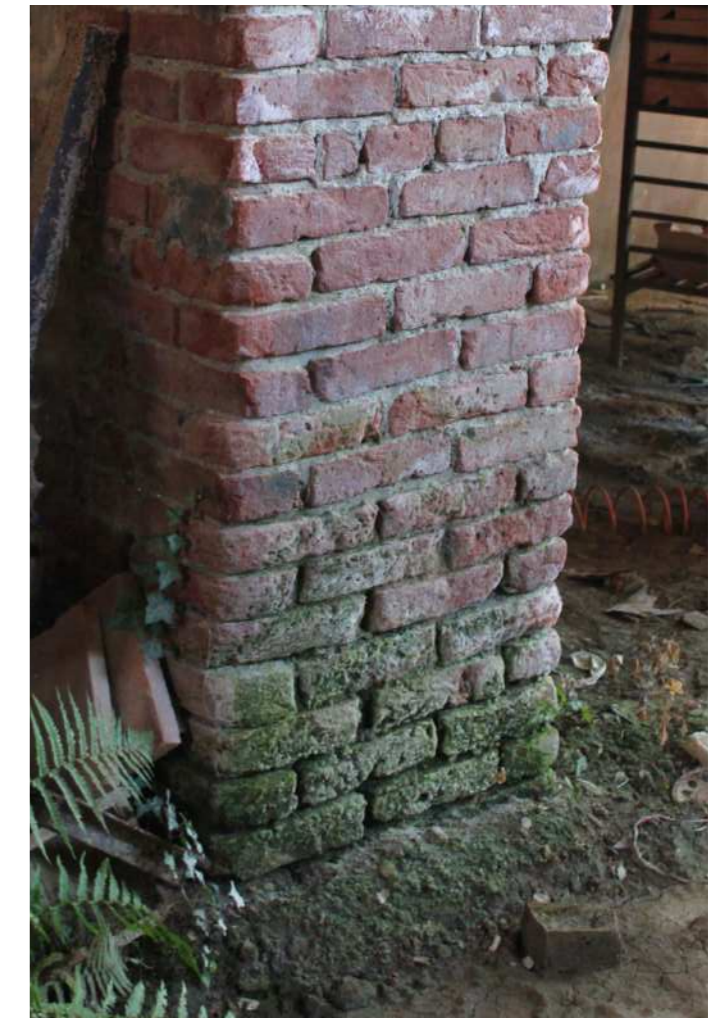


Image 81
Algae, moss, fungi growing on column with rising damp and efflorescence
Source: Photo by the authors, 2024

3.4.5 Incompatible materials

Interventions may seem to be a good option when it comes to reuse a space. **But bad interventions, especially in historical buildings, can lead to building further degradation.** Using incompatible materials can damage the structural and non structural elements. This **incompatibility between materials can cause delamination or layer separation, and cracks** when one material expands or contracts more than others. (Img. 82, 83)

In this case, adding **metal elements to an existing structure has caused cracks** to form, compromising the support and bond of the materials. Additionally, to **repair the walls of the Hoffman kiln**, some gaps were filled with bricks made from **sun-dried earth rather than kiln-fired clay**, as originally intended. As a result, a clear separation and **cracks** have developed at the **junction between the new masonry and the existing one** (Img. 84-87). Moreover, the walls of the Hoffman kiln serve as load-bearing walls, helping to support the building. In some areas, the **sun-dried earth bricks have begun to detach and crumble**, which could eventually lead to a total structural failure of the building. (Palmero, 2023).

The use of the fired bricks and sun dried bricks has led to a failure of the preservation and deterioration, specially on the **load-bearing walls of the Hoffmann Kiln** where it is evidence of the detachment and crumbling of the sud dried bricks. To treat this issue it is necessary to replace the sun dried bricks to materials that are compatible with the original structure guaranteeing the stability and the general preservation of Fornace Gaiero.



Image 82
Addition of a steel beam that expands and contracts affecting brick column
Source: Photo by the authors, 2024



Image 83
Sun dried bricks and kiln fired bricks creating cracks between each
Source: Photo by the authors, 2024



Image 84
Addition of a steel beam that expands and contracts affecting brick column
Source: Photo by the authors, 2024

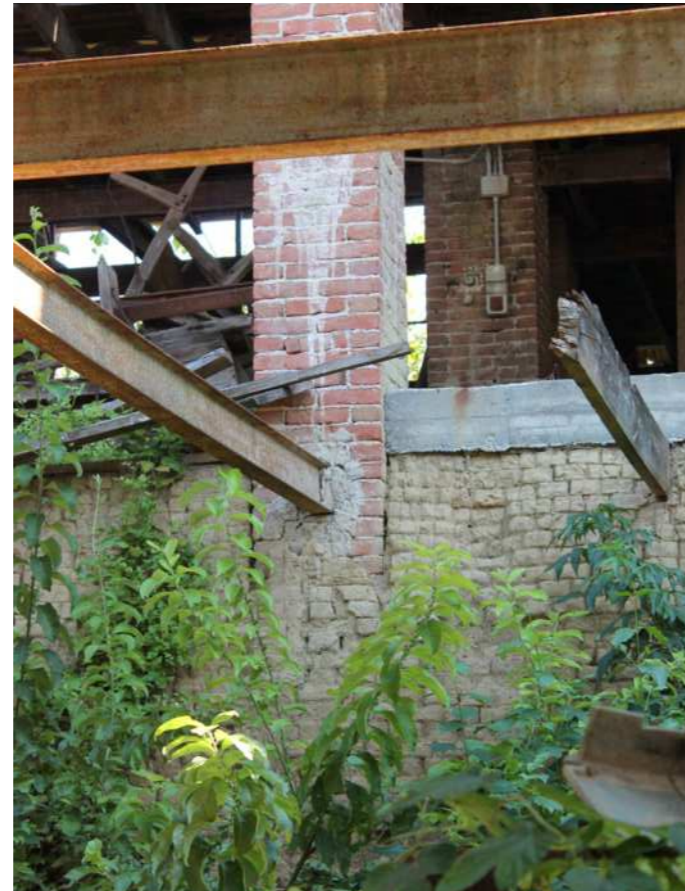


Image 85
Sun dried bricks and kiln fired bricks creating cracks between each
Source: Photo by the authors, 2024



Image 86
Sun dried bricks and kiln fired bricks creating cracks between each
Source: Photo by the authors, 2024



Image 87
Sun dried bricks and kiln fired bricks creating cracks between each
Source: Photo by the authors, 2024



Image 88
Corrosion of the gas-oil tank
Source: Photo by the authors, 2024



Image 89
Detachment of plaster due to rising damp
Source: Photo by the authors, 2024



Image 90
Biological growth on brick column and wooden roof
Source: Photo by the authors, 2024



Image 91
Detachment of plaster due to rising damp
Source: Photo by the authors, 2024

Summary of the decays

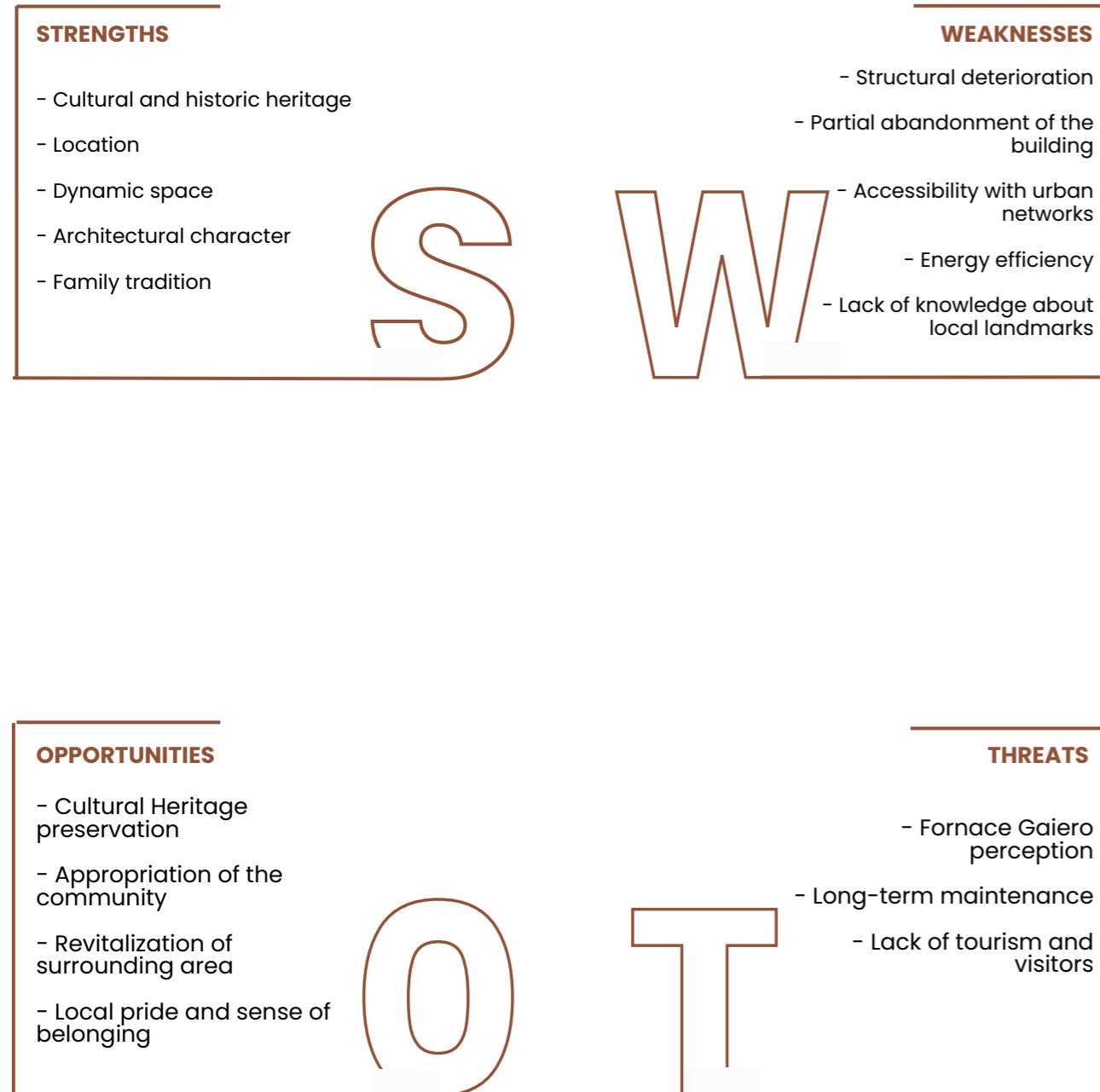
Table 4. Summary of the decays of Fornace Gaiero

DECAY	PRESENCE OF DECAY	DESCRIPTION	EFFECT	SOLUTION
Rising Damp	Brick columns and walls	Moisture moves through porous materials carrying salts that crystallize when it evaporates.	Plaster detachment, structural weakness, damage in wood and masonry	Damp-proof course, damp-proof membrane
Efflorescence	Brick columns	Salts from evaporated water attach to the surface producing white powder in concrete, masonry and stones.	Aesthetic factor, pressure and weakness of structure, spalling	Cleaning the surface with water pressure washer machine, using a brush for softer surfaces, chemical cleaners, sandblasting and waterproofing chemicals
Freeze-thaw cycles	Chimney, columns, Hoffmann Kiln walls	Water that is filtered through the pores or cracks of the materials expands when it freezes.	Material cracking or disintegrating	Sealing bricks with "Breathable sealant"
Wet-dry cycles	Wooden roof, wooden floor	Materials expand when wet and contract when dry	Crack, warp, rot or material integrity	Dry the structure, remove damage parts, biocidal treatment
Corrosion	Steel beams	Affects metal when they are exposed to humidity, especially when it carries salts and air	Expansion, generating cracks on the concrete and weakening the structure	Rust-removing chemicals, grind and scrub the piece with wire brushes by sand blasting and water blasting
Growth of biological organisms	Columns, beams, floors, roof	Accumulate moisture creating micro-environment such as algae, moss, lichens and fungi in the surfaces	Growth of roots and breaking the surface, on wooden elements can lead to rot and material degradation	Carefully removing the vegetation, pruning, cleaning the algae, fungi and moss using chemical biocidal
Incompatible materials	Brick columns, Hoffmann Kiln walls	Repairing or adding new materials that are non compatible with the existing elements	Layer separation, and cracks when one material expands or contracts more than others	Remove the "new" element and replace it with compatible materials

SWOT analysis

Fornace Gaiero

Figure 34
SWOT analysis diagram for the Fornace Gaiero
Source: Drawing by the author



STRENGTHS

- **Cultural and historic heritage:** Fornace Gaiero has an important cultural and historic relevance considering it as one of Dogliani's symbols, giving the essence of an industrial heritage and a sense of place.

- **Location:** Is located in Dogliani that is known for its wine culture and the brick architecture by Schellino. Its strategic location near to the city center enhances its integration into Dogliani's urban fabric, potentially increasing visitors.

- **Dynamic space:** The complex is spacious and with open areas that allows it to propose new functions and attract more and diverse visitors.

- **Architectural character:** Its industrial character enhances the visuals and aesthetic of the building that offers open spaces that can be easily subdivided.

- **Family tradition:** The owner still lives in the complex and has a great interest in restoring and adapting the building to continue producing and activating the place, as well as sharing its family tradition and knowledge about bricks.

WEAKNESSES

- **Structural deterioration:** The building is in a high level of deterioration, the building requires many repairs, specially structural reinforcement, that imply elevated costs and technical professionalism.

- **Partial abandonment of the building:** The lack of usage and maintenance of the building, led to an abandonment of many parts of the Fornace, becoming a place full of debris and old non functional artifacts. This also led to a decrease in production and therefore offer of bricks, and lack of popularity among buyers.

- **Accessibility with urban networks:** Even though it is near to the city center, it requires planning to ensure the connectivity with pedestrian routes, public transportation and urban streets.

- **Energy efficiency:** Fornace Gaiero as an old industrial building, lacks an efficient energy system and as an open space it needs proper insulation in future functions, leading to high renovation costs.

- **Lack of knowledge about local landmarks:** Although Fornace Gaiero was once a well-known brick factory, it has vanished from local memory. Nowadays, many residents of Dogliani are unaware of the building's existence and its historical significance to the town.

OPPORTUNITIES

- **Cultural Heritage preservation:** Restoring and adapting Fornace Gaiero to new uses can lead to considering it as a cultural landmark in Dogliani preserving its industrial and historic legacy.

- **Appropriation of the community:** Its central location can foster community engagement from locals and tourists, becoming a gathering point in Dogliani.

- **Revitalization of surrounding area:** The complex restoration can lead to more investors to be interested, not only in the Fornace Gaiero, but also its surroundings with urban development initiatives and contributing to Dogliani's growth.

- **Local pride and sense of belonging:** Dogliani has a lot of great characteristics that can be enhanced and highlighted to let Dogliani to stand among other towns in the area, specially known for its brick and wine culture.

THREATS

- **Fornace Gaiero perception:** Possible doubts in local and investment support for its state of conservation and possible initial costs.

- **Long-term maintenance:** Its industrial features need specialized works and consistent investments to preserve the building's structure and integrity over time.

- **Lack of tourism and visitors:** The fact that Dogliani is not as recognized as other towns that surround it, and therefore for the lack of visitors, the Fornace can stay unused, if there are no activities in town.

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04

CASE STUDIES: Industrial heritage adaptive reuse

The case studies of Fornace Carena, Pudong Hoffmann Brick Kiln, and Zhujadian Brick Kiln Museum were analyzed to explore examples of industrial Hoffmann kilns undergoing adaptive reuse. These projects provided valuable insights into how such historical industrial spaces can be creatively transformed while preserving their architectural identity. By studying these examples, we gained a deeper understanding of spatial possibilities, the integration of new functions, and strategies for adapting the kilns to contemporary uses, which informed our approach to reimagining similar spaces.

-
- 4.1 National case study: Fornace Carena
 - 4.2 International case study
 - 4.2.1 Pudong Hoffmann brick kiln
 - 4.2.2 Zhujadian Brick Kiln Museum
 - 4.3 References

4.1 National case study

Fornace Carena

Via Camporelle, 50, 10020 Cambiano TO

Fornace Carena was founded in **1907 in Cambiano** by Anna Dughera and her sons Giovanni Battista, Luigi and Michelle Carena. They first started with **basic equipment to produce only bricks and roofs** and used "a plot of land belonging to Battista's fiancée, a well for water, circular pits for kneading clay in bare feet, wooden box dies for forming bricks, the threshing floor in the sun for drying, and pinion kiln" (Svelato, 2020).

In 1912, they **constructed the first Hoffmann oven**, from that time on, the demand increased and constructed another **two kilns**, the last one constructed is nowadays used in the actual production site. "Today the Carena kiln ranks as the **best brick manufacturing company in Piedmont**, with its more than **100 years of history in Turin entrepreneurship**" (Svelato, 2020).

In the 70's, one of the Hoffmann kiln **was abandoned and then the "Spazio Hoffmann"** was constructed in the old infrastructure of the oven, **maintaining the columns that divided the space into four secondary aisles** and the main one being the tallest one and "The chimney piercing through the ceiling creates a striking space, more reminiscent of a cathedral than a factory" (Spazio Hoffmann, n.d). It has about 1600 m2 that **hosts concerts, private events, conferences and other artistic events for about 600 people.**



Image 92
Fornace Carena
Source: Photo by Elisabetta Crovato, 2005

The **restoration** of the office space on Fornace Carena took place from **2001 to 2005** by Elastico Farm led by Stefano Pujatti, Simone Carena and Cesario Carena. They used an old silo that stored clay and the whole structure was meant to be the headquarters of the offices. "The ground floor was given over to the cafeteria and changing-rooms for the kiln workers. **Some pillars had to be cut away to create space for the new functions**, with sections being left **'hanging' from the ceiling**; lit from beneath, these create an unreal atmosphere." (Elastico Farm, n.d)

The creation of a ramp that guides the visitors to the receptionist and the principal space was divided into two parts, one of them was designed based on the mountains of clay found on the building, creating a waving staircase. "The second has a sloping floor which follows the line left by the damp clay when stacked against the wall (...) The slope itself culminates at the top floor, where a low vaulted ceiling covers a conference room and an impressive loft. **Some volumes break through the vault, creating 'lanterns', which provide light for the interior, and open terraces**" (Elastico Farm, n.d)

Together with the offices, the fornace and the **Spazio Hoffmann, there is an ecomuseum. Munlab** was founded in 1993 next to Fornace that **showcase all the machinery and the pieces done during time by Fornace Carena**. has about 2000 m2 and was constructed inside existing spaces of the old fornace, and was conserved and restored as similar as possible as the original. "From there, visitors enter a small internal garden, which, along with the adjacent 80-square-meter hall, is available for events and private parties. At the back, there is a workshop for artisans, artists, and enthusiasts, as well as various themed rooms" (Munlab Ecomuseo dell'argilla, 2021)

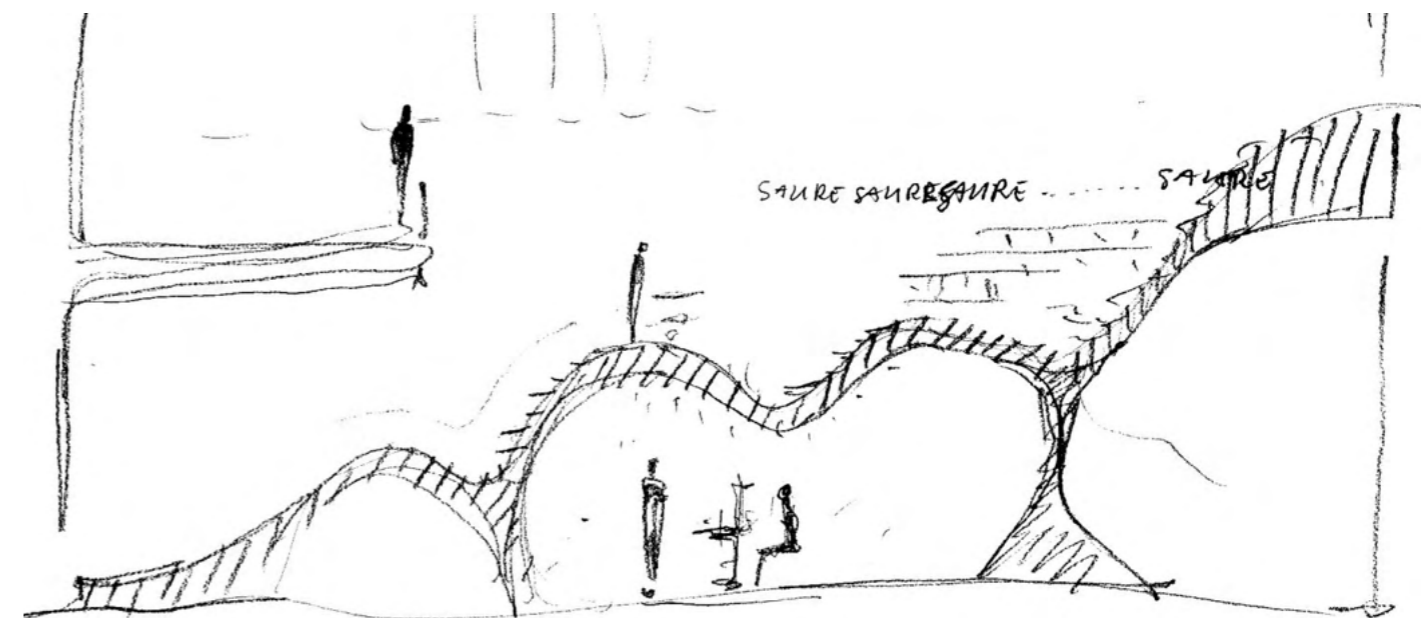


Figure 35
Fornace Carena
Source: Photo by Elisabetta Crovato, 2005

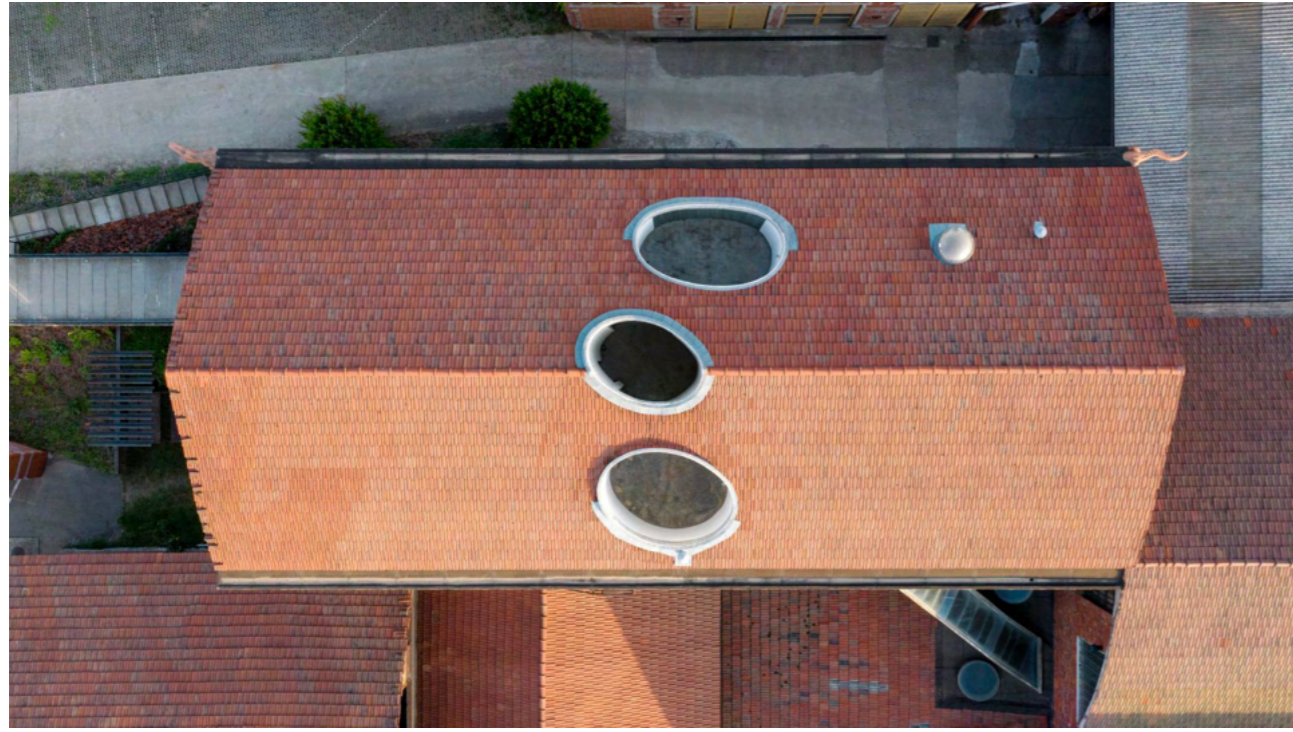


Image 93
Fornace Carena
Source: Photo by Elisabetta Crovato, 2005



Image 94
Fornace Carena
Source: Photo by Elisabetta Crovato, 2005

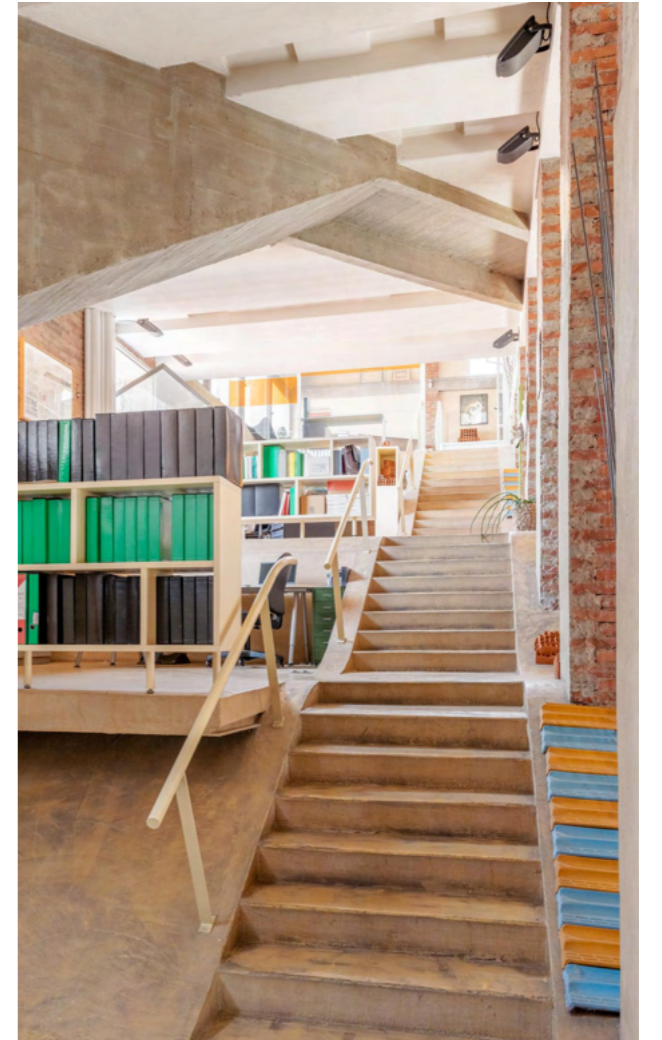


Image 95
Fornace Carena
Source: Photo by Elisabetta Crovato, 2005



Image 96
Fornace Carena
Source: Photo by Elisabetta Crovato, 2005

4.2. International case study

Pudong Hoffman Brick Kiln

Laogang Town, Pudong New District, Shangha

The **Pudong Hoffmann Brick Kiln**, also known as the Red Kiln, was renovated in 2019 by **HCCH Studio after being abandoned and left in a state of total decay**. Though the kiln had lost its original functions and was in a deteriorated state—with walls and parts of the roof collapsed or damaged, and many areas overrun by weeds—it preserved its essence through remaining architectural features such as the chimney, arches, and overall structure.

HCCH Studio transformed the structure **“from the ruins of production into a public place”** (HCCH Studio, 2023), preserving its industrial atmosphere while adapting it for contemporary needs. The kiln is now situated on the edge of a golf course, which is planned to be converted into a suburban leisure park.

Image 97
Pudong Hoffmann Brick Kiln
Source: Photo by Qingyan Zhu, 2021





Image 98
The original brick kiln built in 1969
Source: Photo by Ti Gong, 2022

Located in Laogang Town, Nanhui, Pudong, China, the kiln is a typical example of Hoffmann Kilns, characterized by their thick brick walls, tunnels, and passages, characteristics of this type of factory. Hoffmann Kilns, patented by the German inventor Friedrich Hoffmann in 1858, gained worldwide popularity for their efficient use of heat and fuel. According to HCCH Studio, Hoffmann kilns began appearing in the Shanghai landscape in the early 20th century.



Image 99
Pudong Hoffman Brick Kiln
Source: Photo by Qingyan Zhu, 2021

The Pudong Hoffman Brick Kiln, was built in 1969, as a structure to house a traditional brick kiln called "Hongyao" (red kiln). Shanghai was one of the first cities to open its port in the early 19th century, according to the studio, and with this the introduction of the Hoffman kiln, it demonstrated to the world the industrial growth of its local economy. (World Architecture Community, 2022.)



Image 100
Pudong Hoffman Brick Kiln
Source: Photo by Qingyan Zhu, 2021

The kiln ceased operations in the late 1980s due to changes in industrial practices, environmental concerns, and the introduction of new construction methods.



Image 101
Pudong Hoffman Brick Kiln
Source: Photo by Qingyan Zhu, 2021

Though the red kiln had lost its original functions, and the deterioration state of the building, with some wall and parts of the roof collapsed or damaged, as well as many other parts of the building overrun by weeds, it has preserved its essence, or at least the memory of what it was with the help of some architectural features that remained, such as the chimney, the arches and the overall structure. The following pictures exemplifies the state of the building before the renovations.



Image 102



Image 103



Image 104



Image 105



Image 106



Image 107

Image 102-107
Pudong Hoffman Brick kiln inside's before renovation
Source: Photo by Qingyan Zhu, 2021

The renovation project by HCCH Studio faced the challenge of preserving the original atmosphere while using the spaces. They maintained the original layout, shape, materials, and scale of the building. They undertook site cleaning and reinforced the structure by strengthening the old brick arches with steel supports. These arches, according to Lin Fei, a local reporter who visited the site, evoke the feel of an Italian wine cellar.

Figure 36
Pudong Hoffman
Birck Kiln plan before
Source: HCCH Studio,
2010

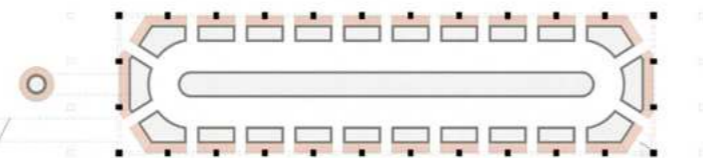


Figure 37
Pudong Hoffman Birck
Kiln plan after
Source: HCCH Studio,
2010

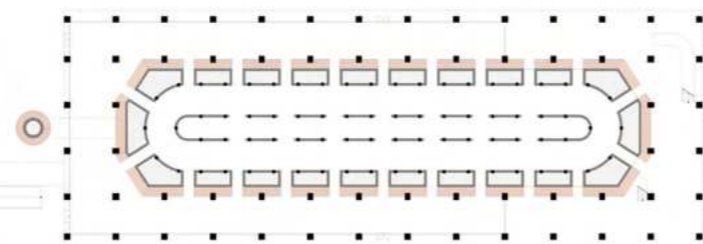


Image 108
Pudong Hoffman Brick kiln renovation
Source: Photo by Qingyan Zhu, 2021

During the design process, the team discovered that the previously closed flue could be opened to connect with the outer ring. Originally intended for smoke exhaust, this transformation allowed for the creation of new door openings, introducing shortcuts that enhance circulation and create dynamic pathways through the space. The flue, once narrow and dark, now features a glass floor above and roof skylights, forming a light well that illuminates both the flue and the surrounding passageways. Standing beneath the skylight, visitors are invited to gaze up at the towering chimney, a striking symbol of the site.

Daylight pours into the dark ring through the arches, akin to a porch encircling a patio or atrium, while the opposite arches create climatic boundaries, forming intimate alcoves that overlook the landscape. The flue and its cavity, essential for air treatment during the burning process, have been reimagined to house modern mechanical, electrical, and plumbing systems, continuing the kiln's legacy of functionality.

Original vent holes have been preserved, now serving as lighting and air-conditioning outlets.

The second floor hosts a multifunctional hall, featuring a transparent façade with open verandas on both levels that serve as viewing platforms and evacuation routes. The east façade's arches resonate with the interior motif, while an old brick stairway is retained, accompanied by a newly added evacuation stair. The original passage near the chimney remains, preserving the kiln's spatial relationships.

The Hoffmann kiln, a testament to Shanghai's industrial history, exemplifies the city's early 19th-century port development. This renovation not only repurposes an abandoned industrial structure but transforms it into a framework that supports a contemporary lifestyle. Beyond its architectural significance, the revitalized kiln fosters greater social value, inviting the community to engage with its rich history while embracing new possibilities for cultural connection and interaction.



Image 109
Pudong Hoffman Brick kiln renovation
Source: Photo by Qingyan Zhu, 2021



Image 110
Pudong Hoffman Brick kiln renovation
Source: Photo by Qingyan Zhu, 2021



Image 111
Pudong Hoffman Brick kiln renovation
Source: Photo by Qingyan Zhu, 2021

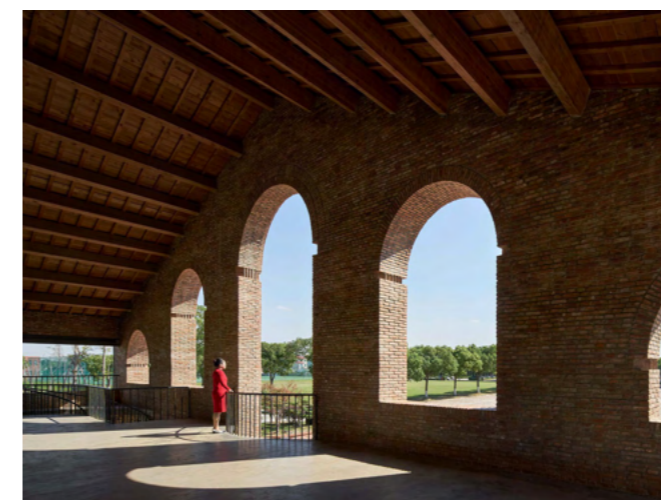


Image 112
Pudong Hoffman Brick kiln renovation
Source: Photo by Qingyan Zhu, 2021

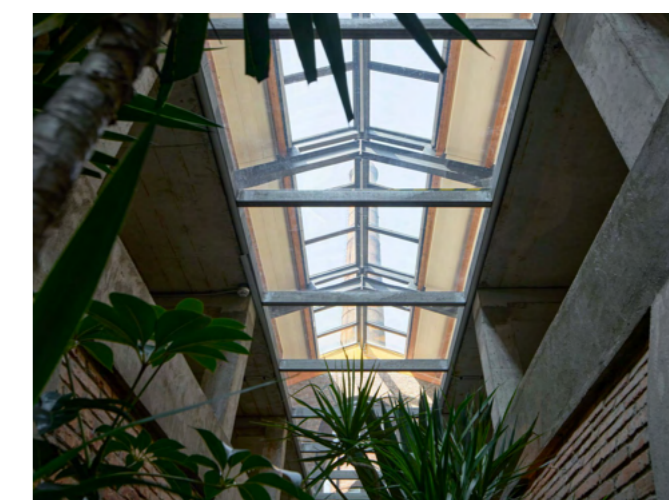


Image 113
Pudong Hoffman Brick kiln renovation
Source: Photo by Qingyan Zhu, 2021

4.3. International case study

Zhujiadian Brick Kiln Museum

Zhujiadian, Kunshan, China.

Land-Based Rationalism D-R-C has revitalized a historical **Hoffmann kiln** in Zhujiadian, China, transforming it into a cultural location.

The project is a **dynamic connection between new uses, historical and contemporary** elements such as the brick arches and adding new structures such as the glass floors and roofing. Creating a multifunctional museum and community meeting point.



Image 114
Zhujiadian Brick Kiln Museum renovation
Source: Photo by Zhang, Guo, & Jiang, 2016



Image 115
Zhujiadian Brick Kiln Museum renovation
Source: Photo by Zhang, Guo, & Jiang, 2016



Image 116
Zhujiadian Brick Kiln Museum renovation
Source: Photo by Zhang, Guo, & Jiang, 2016

The project showcases an innovative approach to the **adaptive reuse of a historical Hoffmann kiln**. The renovation of this building aims to transform the abandoned industrial building into a cultural site, joining both history and contemporary uses. **The architects wanted to preserve the kiln's original architectural essence and mix it with more contemporary interventions that helped to make the space more functional.**

One of the things they wanted to **preserve** about the architecture of the building was the **brick arches** and the naves as part of the structure identity, giving the visitors the possibility to circulate around the kiln's linear form and interconnected vaulted spaces.

The architects wanted to complement and enhance the **existing structure with modern architectural interventions**. One of them was the addition of a **glass floor** in the upper level of the museum, to offer visual access to the kiln structure on the first floor. Additionally, **skylights were placed and new openings were made in the kiln's roof** and walls in order to bring **natural light** into the interior spaces, creating a sense of wideness, connection with the outdoor spaces and transparency. **The contrast between the modern, light-filled spaces and the heavy, solid brick** structure highlights the dialogue between old and new, enhancing the museum's spatial qualities.

The choice of materials for the new additions, such as **glass, metal and concrete**, allows the original brickwork to remain the main focal point. The materials together give the space an **industrial atmosphere, reinforcing the connections between the past and the present.**

The kiln is now a multifunctional site with a museum, exhibition hall and community center allowing the building to have more flexibility and host different cultural events ensuring the continuous use of it. **The surrounding area was also proposed in order to integrate the kiln with pedestrian pathways, gardens and outdoor areas** that are placed around the main building to give freedom to the visitors to explore the site in different ways.



Image 117
Zhujadian Brick Kiln Museum tile roof
Source: Photo by Zhang, Guo, & Jiang, 2016



Image 118
Zhujadian Brick Kiln Museum tile roof
Source: Photo by Zhang, Guo, & Jiang, 2016

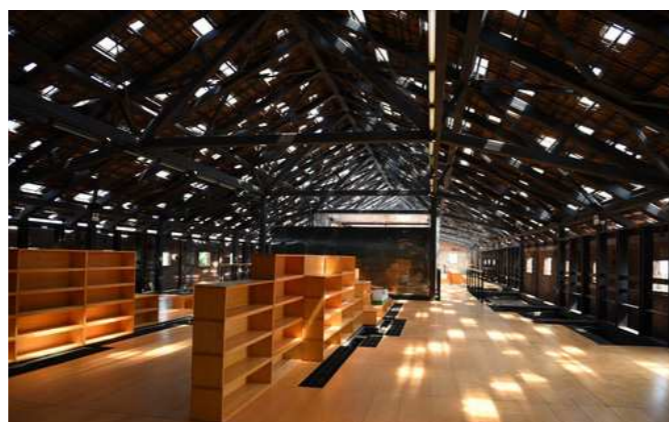


Image 119
Zhujadian Brick Kiln Museum
Source: Photo by Zhang, Guo, & Jiang, 2016



Image 120
Zhujadian Brick Kiln Museum vaults
Source: Photo by Zhang, Guo, & Jiang, 2016



Image 121
Zhujadian Brick Kiln Museum workshops
Source: Photo by Zhang, Guo, & Jiang, 2016



Image 122
Zhujadian Brick Kiln Museum exterior
Source: Photo by Zhang, Guo, & Jiang, 2016

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05

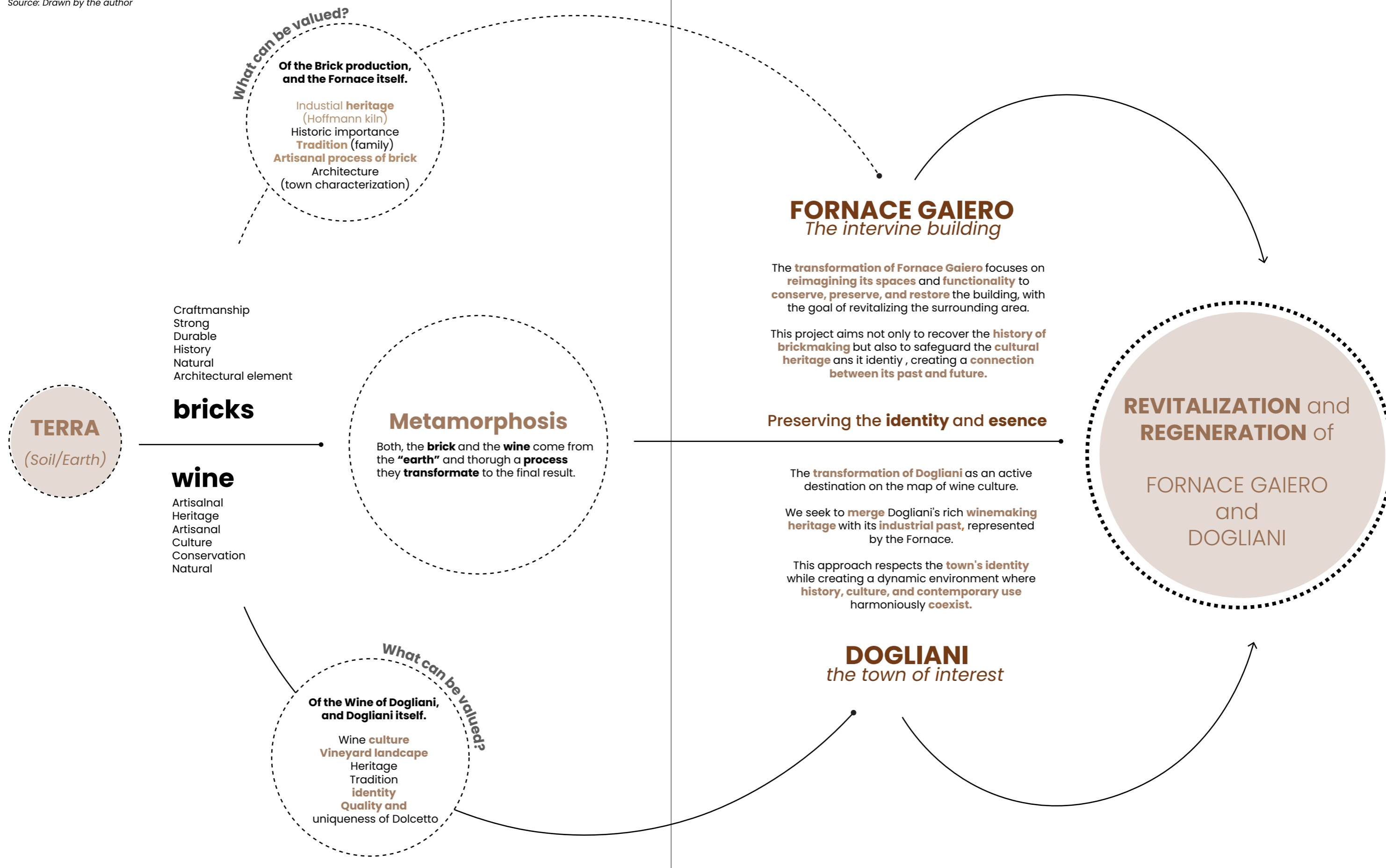
CONCEPT:

Revitalization and regeneration of
Fornace Gaiero and Dogliani

- 5.1. Concept map
- 5.2 Concept explanation
 - 5.2.1 Aims
- 5.3 References

5.1 Concept map

Figure 38
Concept diagram
Source: Drawn by the author



5.2. Concept explanation

REVITALIZATION and REGENERATION OF FORNACE GAIERO and DOGLIANI

(noun) "the process of making something grow, develop, or become successful again"

(noun) "the act of improving a place or system, especially by making it more active or successful"

The restoration of Fornace Gaiero aims to integrate the building's industrial heritage with Dogliani's wine culture. The project seeks to create a **vibrant cultural hub** that honors its past while embracing contemporary uses. **This transformation will revitalize the Fornace, enhancing Dogliani's unique characteristics, attracting tourism, and activating the local community.**

.....

In this context, it is important to differentiate between **revitalization and regeneration**. **Revitalization** mainly focuses on bringing life, energy, or activity back to an area that has become unused. It involves improving aesthetics, enhancing economic activity, and bringing social vibrancy.

In contrast, **regeneration** is a more deep process that takes into consideration the restoration, repair, and long-term transformation of a place, or structure, looking to improve physical infrastructure and enhance social or environmental resilience.

The aim is not just to restore life but also to create a more sustainable and adaptable environment that addresses underlying problems.



ARCHITECTURAL

Restore the building's structure including the roof, floors, columns, and chimney, to **host new uses that emphasize the industrial heritage**, the Fornace Gaiero in its splendor while reusing the spaces that were used as brick production while preserving the spirit of the place

SOCIAL AND ECONOMICAL

Welcome new users and create a new **cultural and social hub combining bricks and wine**, as well as other activities of the community. This will help Dogliani to be known again not only for its essence and tourism but also for its **wine culture, specially Dolcetto, giving an opportunity to become part of the UNESCO site Langhe and Monferrato.**

HISTORICAL

Showcases the traditional brick making techniques, history and the old machinery to preserve Fornace Gaiero's historical character while exploring new ways to reuse the building, mixing the past and the present with contemporary uses, complementing it with an exhibition for honoring **Schelino**. Also highlight and make appreciate the tradition of wine culture in Dogliani

Image 123
Fornace Gaiero
Source: Photo by the authors, 2024



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06

ADAPTIVE REUSE PROPOSAL

- 6.1 Master Plan
- 6.2 Concept of intervention
- 6.3. New Uses
- 6.4. Stakeholders
- 6.5. Phases

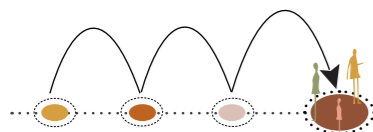
6.1. Master Plan

Dogliani and Fornace Gaiero

The master plan for Dogliani focuses on highlighting Fornace Gaiero as a potential **new cultural anchor in the town.**

It aims to enhance the connectivity and functionality of the town's public and cultural spaces by linking the existing **squares, buildings and pedestrian streets** where markets and cultural events take place such as Centro Polifunzionale, Piazza Umberto I, Piazza Carlo Alberto, Borgo Castello and Via Corte, finishing in Fornace Gaiero. This idea is to emphasize a **network of the main nodes of activity and cultural landmarks**, strengthening an urban linear connectivity.

Furthermore, the master plan aims to transform Fornace Gaiero into a **multifunctional hub** in order to complement the other facilities and spaces in the town and provide a dynamic and versatile location for cultural, economic and social activities. Finally, the plan emphasizes in promoting tourism and local identity by highlighting and **potencializing Dogliani's wine culture** by adding to the Fornace uses such as tasting rooms, wine storage spaces and hospitality services in order to **position Dogliani as a key destination in the Langhe region.**



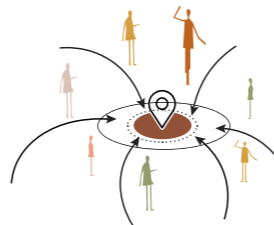
STRENGTHENED AN URBAN LINEAR CONECTIVITY

Create a link between the public squares and buildings in Dogliani that host nowadays markets and cultural events, and adapt the spaces of Fornace Gaiero to be repurposed to integrate a cultural and social connectivity.



CREATE A MULTIFUNCIONAL HUB

Transform Fornace Gaiero as a multifunctional hub to complement other spaces in the city such as those in the Centro Polifunzionale and relocate different cultural activities for economic growth and cultural vibrancy in Dogliani

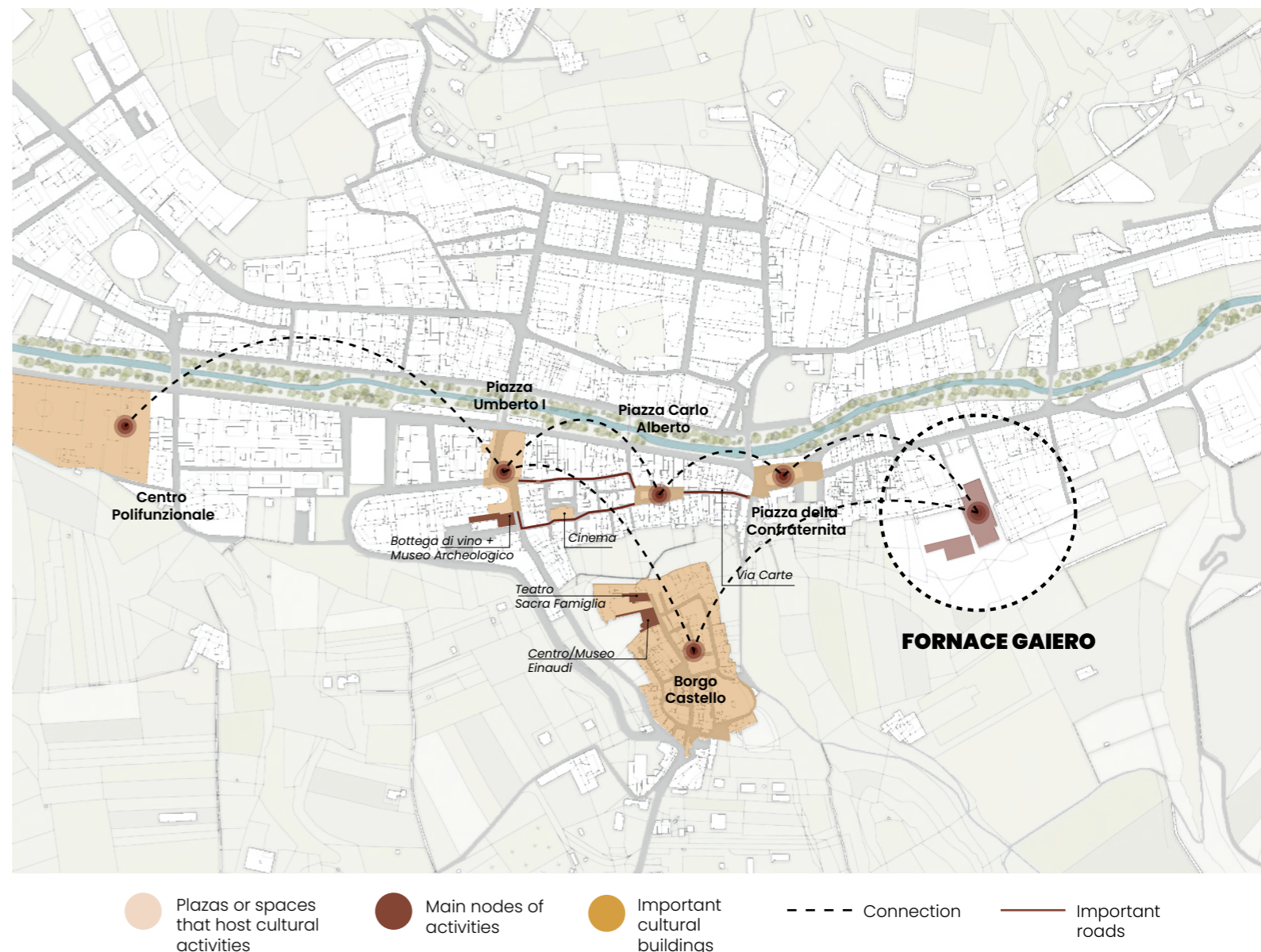


PROMOTE TOURISM AND LOCAL IDENTITY

Support the local wine culture (Dolcetto) and tourism by integrating tasting rooms, wine storage and hospitality service in the Fornace Gaiero to help positioned Dogliani in the wine culture map of Langhe-Monferrato.

Map 10- Master plan

Map of Dogliani
Source: Drawing made by the author.

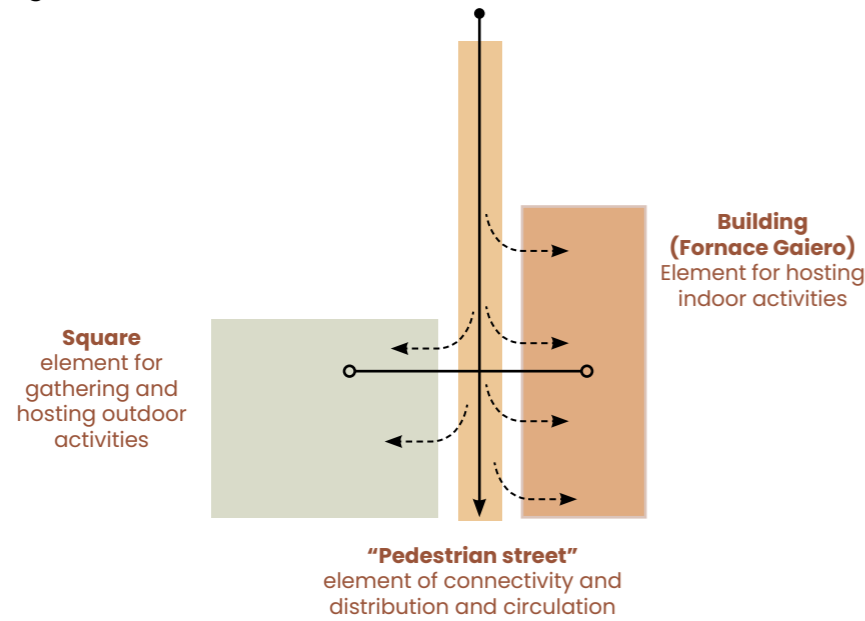


6.2. Concept of intervention

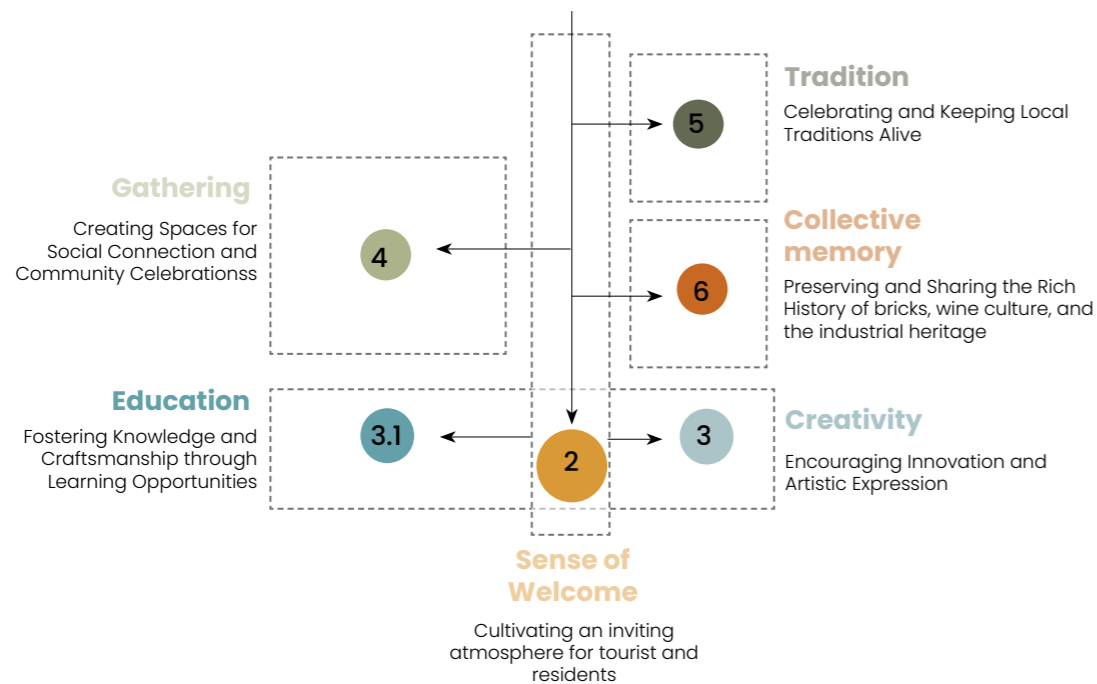
Fornace Gaiero

Following the Dogliani Master Plan, three main types of spaces were identified as nodes for hosting activities and events: public squares (**outdoor areas**), buildings (**indoor areas**), and pedestrian streets (**circulation**).

These spatial elements serve as organizing frameworks for gathering, facilitating community interactions, and giving this sense of place. The goal is for the **Fornace Gaiero** to become a **welcoming anchor point** within this network, **fostering connections within the community** and **bridging ties with the Piedmont region**.

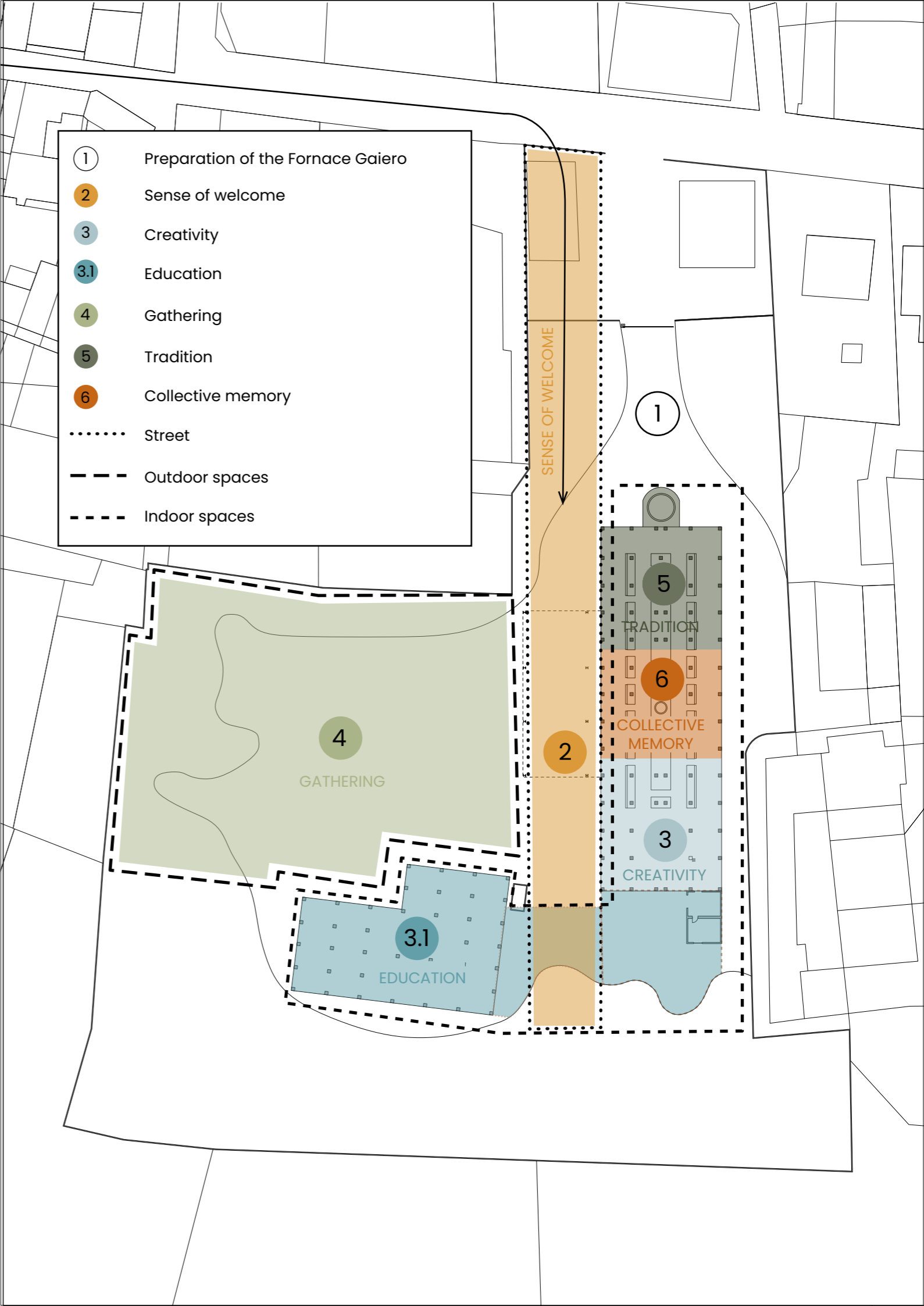


To support this, **specific clusters or thematic strategies** have been identified to **deepen the connection between Fornace Gaiero, society, and territory**. These clusters include:



Each of these themes not only reflects local values but also enhances the cultural and social fabric, positioning the Fornace Gaiero as a dynamic community hub.

- ① Preparation of the Fornace Gaiero
- ② Sense of welcome
- ③ Creativity
- ③.1 Education
- ④ Gathering
- ⑤ Tradition
- ⑥ Collective memory
- Street
- - - Outdoor spaces
- - - Indoor spaces



6.3. New uses

1 Wine experience 75m²

To highlight the Dolcetto and its history, this space blends Dogliani's rich viticulture with architectural heritage.

2 Restaurant 725m²

Culinary experience that offers dishes paired with local wines inside an industrial setting creating a unique experience

3 Central Patio 797m²

At the heart of the building, this central patio highlights the architecture of the Hoffman oven with two kiln spaces and the chimney as a protagonist of the space

4 Brick Workshop 286m²

Space to engage the community to learn the art of artisan brick making process, and preserve Fornace Gaiero's industrial legacy, share knowledge and create new cultural activities.

5 Production 407m²

The idea is to continue with a small production of the bricks as it is nowadays

6 Historical brick museum 2197m²

A space to show and highlight the old machinery, creating an exposition also for the old brick pieces created in Fornace Gaiero

7 Hotel 757m² + 274m²

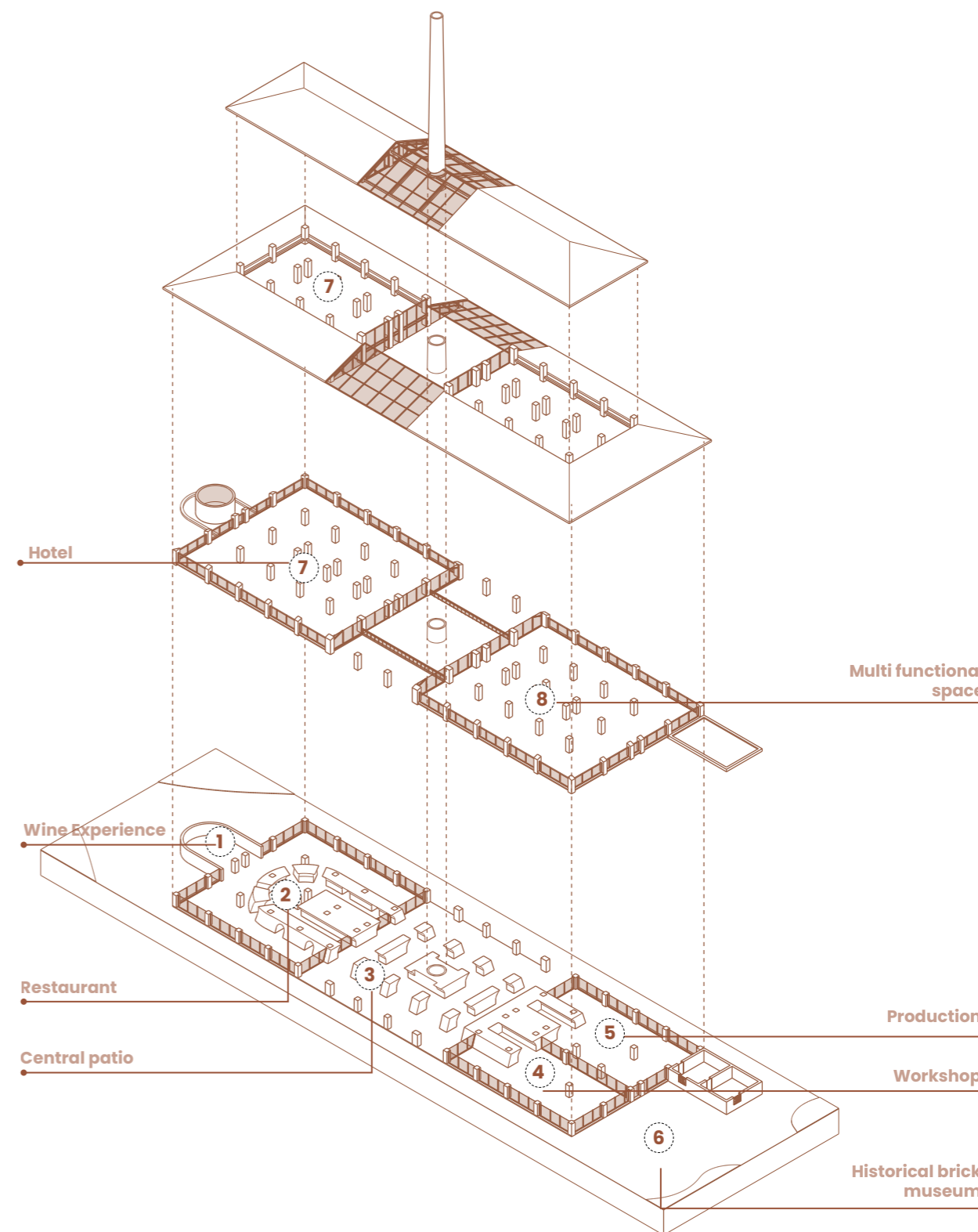
A hotel experience that welcomes new users, creating new options of accommodation with different types of activities related to brick, ceramics and wine.

8 Multifuncional space 773m²

To complement the activities that are happening nowadays, and the future to come, the idea is to create space that could host public and private events independently of the weather and time of the year. Giving society a new close space to develop their open air activities,

9 Piazza Schellino + Promenade 10420m²

Open air area to welcome fairs, local market, local products exhibitions and parking lot as a complementary use.



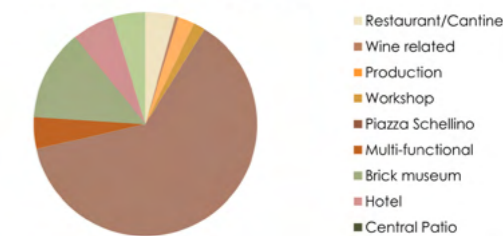
Relation between cluster and uses

The clusters are related to different uses inside the Fornace Gaiero. These clusters will later be useful to the division of the phases of intervention.

CLUSTER	USE	CLUSTER	USE	CLUSTER	USE
Sense of Welcome	Promenade	Education	Workshop	Tradition	Wine
	Production		Brick Museum		Restaurant
Creativity	Workshop	Gathering	Multifuncional	Collective memory	Hotel
			Piazza Schellino		Central Patio
			Promenade		

	FUCTION	AREA m	COST PER SM	TOTAL COST
1	Wine related	75	3000	225 000.00 €
2	Restaurant	725	5000	3 625 000.00 €
3	Central Patio	797	2000	1 594 000.00 €
4	Workshop	286	2000	572 000.00 €
5	Production	407	500	203 500.00 €
6	Brick museum	2197	3000	6 591 000.00 €
7	Hotel	1031	3000	3 093 000.00 €
8	Multi-functional	773	2000	1 546 000.00 €
9	Piazza Schellino	10490	1000	10 490 000.00 €
				27 939 500.00 €

AREA AND COST OF INTERVENTION



6.4. Stakeholders

To fund this project, a thorough search for both **public and private stakeholders** was conducted. These stakeholders were selected based on their interests and focus within **each cluster of the project**, aligning their contributions with the specific uses they support.

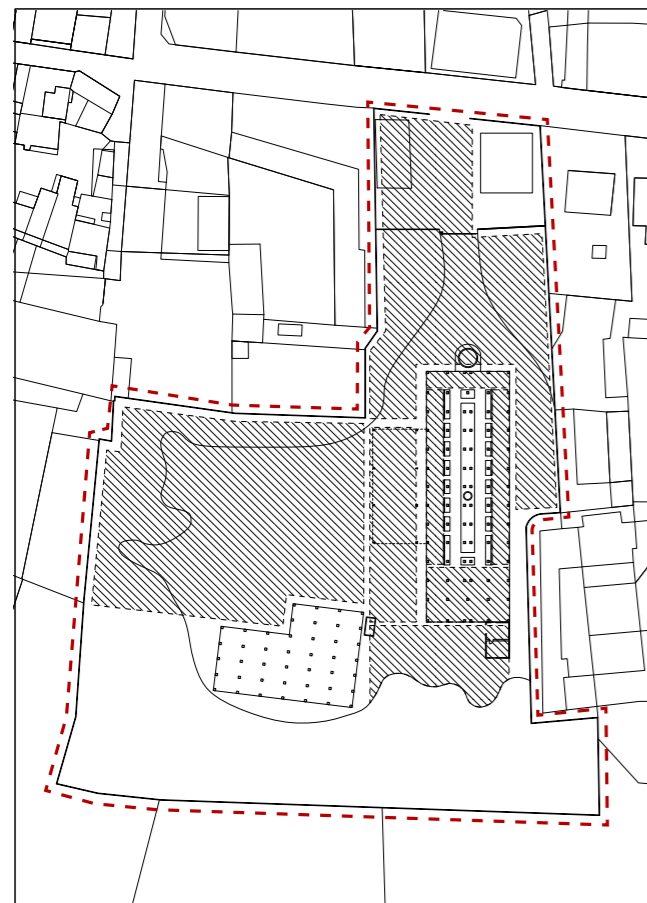
Additionally, a table was developed to outline the **degree of involvement** each stakeholder could have in the project, determined by their power, legitimacy, and urgency. This approach ensures a targeted and efficient allocation of resources while fostering collaboration across different sectors.

STAKE HOLDERS										
SUBJECT	PUBLIC/PRIVATE	CATEGORY/ROLE	SECTOR	WEBSITE	DESCRIPTION	AMOUNT	PROJECT ROLE (CLUSTER)	DEGREE OF INVOLVEMENT		
								POWER	LEGITIMACY	URGENCY
European Union	PUBLIC	COMMISSION	ECONOMIC CULTURAL DEVELOPMENT							
Interreg Europe program	PUBLIC	PROGRAM	ECONOMIC - CULTURAL	Infoeregione - European Regional Development Fund	EU regional development. Promotes cooperation between regions and supports projects related to industrial heritage through its cultural preservation funding.	Within a €226 billion budget for the European Regional Development Fund, included €9 billion for the Interreg programme, around €4.7 billion are allocated to create local jobs at heritage sites and attract visitors to the specific cities and locations.	GATHERING, COLLECTIVE MEMORY			
European Regional Development Fund	PUBLIC	FUND	REGIONAL DEVELOPMENT	Infoeregione - European Regional Development Fund	Are key financial tools that support local and regional authorities in protecting and enhancing cultural heritage, including industrial sites, by fostering job creation and tourism in heritage areas (Springerlink) (Europa Culture).	€4.7 billion are allocated to create local jobs at heritage sites and attract visitors to the specific cities and locations.	EDUCATION, CREATIVITY			
Cohesion Fund	PUBLIC	FUND	DEVELOPMENT							
"Programma Operativo Regionale" (POR)	PUBLIC	PROGRAM	REGIONAL DEVELOPMENT	Programma Regionale FESR 2021-2027	It is the programming document of the Region that constitutes the reference framework for the use of European resources from the ERDF (European Regional Development Fund) to ensure the full convergence of Campania towards the Europe of development.	A budget of almost 1.5 billion euros, 20 million will be allocated for infrastructure for skills development, while the Cohesion and Territorial Development Priority (140 million) will support the development of territories and local	GATHERING, COLLECTIVE MEMORY	HIGH	HIGH	LOW
Creative Europe	PUBLIC	PROGRAM	CULTURAL AND CREATIVE SECTOR	Discover funding opportunities for the Cultural and Creative Sectors	Major EU-level funding scheme that could be tapped into. Creative Europe supports the cultural and creative sectors. Focus on innovation and research, which could be beneficial for integrating modern uses into the historical Fornace Gaiero	Depending on the fund	GATHERING, COLLECTIVE MEMORY			
Horizon Europe	PUBLIC	FUND	CULTURAL HERITAGE	Cultural and Creative Sectors	Aimed at the sustainable transformation of cultural heritage. Focus on innovation and research, which could be beneficial for integrating modern uses into the historical Fornace Gaiero. The programme facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges.	The continuation of Horizon 2020 as the EU's main research and innovation programme with a budget of €95.5 billion	EDUCATION, CREATIVITY			
Fondazione CRT	PRIVATE	ASSOCIATION	SOCIAL	Progetti e Bandi - Fondazione CRT	Italy's third largest foundation of banking origin in terms of assets. It has granted a total of more than EUR 2 billion for over 42,000 projects in the fields of art, research, education, welfare, the environment and innovation in the North West in a national and international dimension.	You ask for the amount of money depending on the amount of money of your project.	EDUCATION, CREATIVITY	MEDIUM	LOW	LOW
Ministero della Cultura	PUBLIC	GOVERNMENT	CULTURE	Ministero della cultura	The Ministry of Culture in Italy offers grants for the restoration and preservation of cultural and industrial heritage. Depending on the significance of Fornace Gaiero, it could qualify for national-level funding through programs aimed at industrial archaeology or heritage sites.	Depending on the fund	GATHERING, COLLECTIVE MEMORY	HIGH	HIGH	LOW
Fondazione Compagnia di San Paolo	PRIVATE	ASSOCIATION	CULTURE	Compagnia di San Paolo	One of the largest philanthropic institutions in Italy, this foundation has programs for urban regeneration and cultural heritage. Their focus on sustainable development and community engagement could make them a potential funder for the project.	Depending on the fund and program	EDUCATION, CREATIVITY, COLLECTIVE	HIGH	MEDIUM	LOW
Consorzio di tutela Barolo Barbaresco Alba Langhe e Dogliani	PRIVATE	ASSOCIATION	ECONOMIC	Consorzio Tutela Barolo Barbaresco Alba Langhe e Dogliani	The regional wine protection consortium might see this as an opportunity to enhance the identity of the Dogliani area, making it more attractive for wine tourism.	Depending on the fund and program	TRADITION	MEDIUM	HIGH	LOW
Marchesi di Barolo (Piedmont)	PRIVATE	ASSOCIATION	ECONOMIC	N/A	A historic winery in the Barolo region that may be interested in projects that enhance the cultural and architectural landscape linked to the wine industry.	Depending on the fund and program	TRADITION	MEDIUM	LOW	LOW
ICOMOS Italy	PUBLIC	ORGANIZATION	HERITAGE	ICOMOS	International organization dedicated to the conservation and protection of cultural heritage sites around the world. ICOMOS Italy plays a key role in advocating for the preservation of Italy's vast cultural and architectural heritage, providing expert advice, and promoting best practices in conservation.	Depending on the fund and program	COLLECTIVE MEMORY	HIGH	HIGH	MEDIUM

Regione Piemonte	PUBLIC	GOVERNMENT	SOCIAL - REGIONAL DEVELOPMENT	Fondi e progetti europei Regione	The Piedmont Region is the legislative and administrative organisation in charge of the laws and directs the administrative offices delegated by the State to the Region in compliance with the instructions of the Government of the Republic.	Depending on the fund and program	CULTURAL			
Contributo 2024-2026 per la Tabella degli enti, istituti, fondazioni e associazioni culturali di rilievo regionale	PUBLIC	BANDI	ECONOMIC - CULTURAL	Tabella degli enti, istituti, fondazioni e associazioni culturali di rilievo regionale	The main objective of the following notice is to support and enhance the cultural heritage of institutions, institutes, foundations, and associations that, with continuity and at a high scientific level, operate at the regional level to promote activities related to study, research, training, education, and culture, through the allocation of contributions to the entities listed in the table of culturally significant regional institutions.	Euro 3,695,066.00 allocated as follows: for the year 2024: €1,148,536.00; for the year 2025: €1,228,265.00; for the year 2026: €1,318,265.00.	COLLECTIVE MEMORY, TRADITION	MEDIUM	HIGH	MEDIUM
ECOMUSEUMS	PUBLIC	BANDI	ECONOMIC - CULTURAL	ECOMUSEUMS - Bando 2024 - I Bando Regione Piemonte	The application for funding can be submitted by public managing entities (Local Authorities, either individually or in association, Protected Area Management Bodies, former Provinces) and private managing entities (non-profit cultural Associations and Foundations) of the Ecomuseums of Piedmont, established under the former Regional Law 31/1995, which operate in accordance with Article 11 (Transitional Provision) of the current Regional Law 13/2018, "Recognition of the Ecomuseums of Piedmont."	Total amount of Euro 432,000.00 : of which Euro 297,000.00 in favour of the public management bodies (Public Administrations) and Euro 135,000.00 in favour of the private management bodies (Associations and Foundations) of the	TRADITION			
Gaja Winery	PRIVATE	ASSOCIATION	ECONOMIC	N/A	Known for its innovation and quality in the production of Barbaresco and Barolo wines, Gaja could have an interest in supporting a project that intertwines architecture, history, and wine culture, especially if it benefits the Langhe region.	Depends on the private stakeholder	TRADITION	MEDIUM	HIGH	MEDIUM
Coima SGR	PRIVATE	ASSOCIATION	ECONOMIC MANAGEMENT - REAL ESTATE	Coima SGR	A Milan-based real estate investment company that has invested in historical restoration projects before. They could view the restoration of Fornace Gaiero as an opportunity to diversify their portfolio into cultural and tourism projects.	Depends on the private stakeholder	COLLECTIVE MEMORY	MEDIUM	LOW	LOW
Domux Home (by Lionard Luxury Real Estate)	PRIVATE	ASSOCIATION	ECONOMIC MANAGEMENT - REAL ESTATE	Lionard Luxury Real Estate	Specializes in luxury historical property development. If the Fornace can be transformed into a high-end cultural or tourism venue, Domux Home could be a potential investor.	Depends on the private stakeholder	COLLECTIVE MEMORY	LOW	LOW	LOW
Comune di Dogliani	PUBLIC	GOVERNMENT	CULTURAL	Comune di Dogliani	The local municipality might provide support if the restoration benefits local tourism, economy, or cultural initiatives.	Depends on the private stakeholder	EDUCATION, CREATIVITY, TRADITION	HIGH	HIGH	HIGH
Belmond	PRIVATE	ASSOCIATION	ECONOMIC - TOURISM	N/A	A luxury hotel and leisure company with a strong focus on converting historical properties into experiential tourism destinations. They've done similar projects like the restoration of properties in Tuscany and may see potential in Dogliani's wine-centric heritage.	Depends on the private stakeholder	TRADITION EDUCATION CREATIVITY	MEDIUM	LOW	LOW
Relais & Châteaux	PRIVATE	ASSOCIATION	ECONOMIC - TOURISM	N/A	An association of luxury hotels and restaurants, many of which are located in restored historical buildings. They might be interested in helping turn the Fornace into a boutique hotel or luxury guest house connected to the wine culture of Dogliani.	Depends on the private stakeholder	TRADITION	LOW	LOW	LOW
Slow Food Foundation for Biodiversity	PRIVATE	ASSOCIATION	ECONOMIC - TOURISM	Slow Food Foundation for Biodiversity	With roots in Piedmont, Slow Food could support this project, especially if the restored Fornace promotes sustainable tourism, local food, and wine culture.	Depends on the private stakeholder	TRADITION	MEDIUM	HIGH	MEDIUM
Fondazione Prada	PRIVATE	ASSOCIATION	ECONOMIC - CULTURAL	Fondazione Prada	Known for its work in culture, architecture, and restoration projects, this foundation may have an interest in supporting the preservation and reactivation of industrial heritage buildings with artistic or cultural value.	Depends on the private stakeholder	EDUCATION COLLECTIVE MEMORY	MEDIUM	MEDIUM	LOW
Fondazione Sandretto Re Rebaudengo	PRIVATE	ASSOCIATION	ECONOMIC - CULTURAL	Fondazione Sandretto Re Rebaudengo	This art foundation is active in contemporary art and cultural projects, and they may see potential in a restoration project that can host art installations, cultural events, or exhibitions related to the region's history.	Depends on the private stakeholder	EDUCATION CREATIVITY TRADITION	MEDIUM	LOW	MEDIUM
Lavazza	PRIVATE	ASSOCIATION	ECONOMIC - CULTURAL	N/A	With its commitment to art and culture (e.g., Nuvola Lavazza in Turin), Lavazza's cultural and architectural restoration projects align with initiatives that preserve historical buildings while promoting innovation and sustainability.	Depends on the private stakeholder	EDUCATION CREATIVITY TRADITION	MEDIUM	LOW	LOW
Fondazione CRC	PRIVATE	ASSOCIATION	ECONOMIC - CULTURAL	Patrimonio Culturale - Fondazione CRC	La Fondazione Cassa di Risparmio di Cuneo è un ente non profit, privato e autonomo, che persegue scopi di utilità sociale e di promozione dello sviluppo economico, attraverso erogazioni di contributi a favore di soggetti pubblici e privati non profit e attraverso progetti promossi direttamente, in partenariato con soggetti del territorio, nei settori dell'educazione, del welfare, dell'arte e della cultura, dello sviluppo locale, della salute pubblica, della ricerca scientifica e dell'attività sportiva.	Depends on the private stakeholder	EDUCATION CREATIVITY TRADITION	MEDIUM	LOW	MEDIUM
ENI Foundation	PRIVATE	ASSOCIATION	CULTURAL	N/A	The energy giant's CSR arm supports cultural and heritage projects. They might be interested in funding a restoration project that could positively impact local communities and tourism.	Depends on the private stakeholder	EDUCATION CREATIVITY TRADITION	LOW	LOW	LOW
Generali Group	PRIVATE	ASSOCIATION	CULTURAL	N/A	Their Generali Valore Cultura initiative promotes the preservation of cultural heritage and may offer grants for projects such as Fornace Gaiero's restoration.	Depends on the private stakeholder	EDUCATION CREATIVITY TRADITION	MEDIUM	MEDIUM	LOW
Pirelli	PRIVATE	ASSOCIATION	CULTURAL	N/A	Known for their contributions to cultural and historical initiatives, Pirelli could be a partner if the project aligns with their CSR focus on culture, history, and education.	Depends on the private stakeholder	EDUCATION CREATIVITY TRADITION	MEDIUM	LOW	LOW

6.5. Phases

Intervention area of the phase Delimited area of the site



PHASE 1: SITE CLEANING

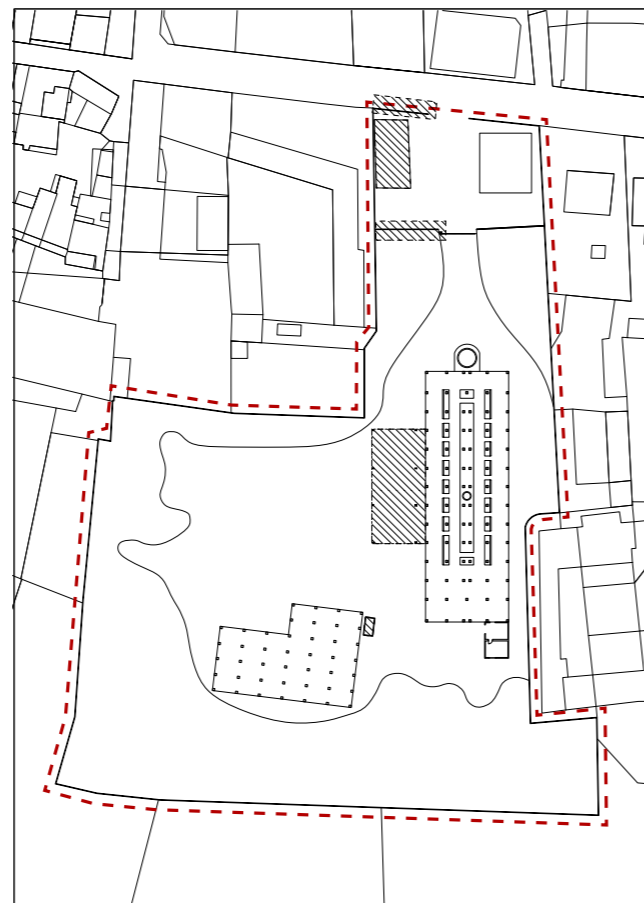
This initial phase is essential, cleaning the building and the surrounding areas of the complex. This will create an overview of the entire space, allowing a detailed understanding of the decays and the potential.

Interventions

Remove invasive vegetation, debris and non original elements obstructing the site's visibility

Document and map the building's current state through pictures, laser scans or drone mapping for future reference

Set up temporary fences and safety signs to secure the area and prevent unauthorized access



PHASE 2: EXTERIOR DEMOLITIONS

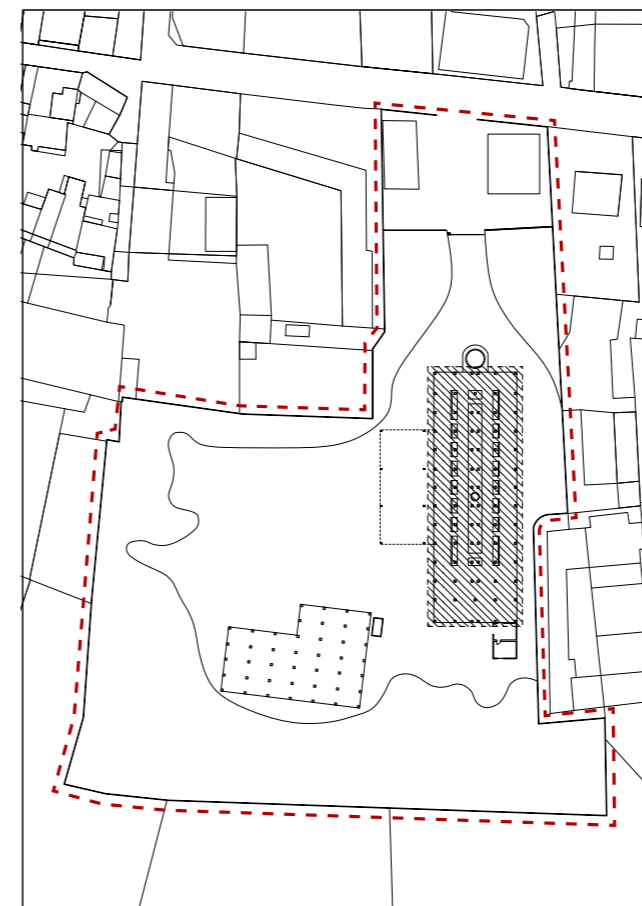
The next step is demolishing the exterior elements, this includes storage units and the metal structure nowadays used by the owner for drying the bricks and ceramics. This will prepare the area for the subsequent phases of the project.

Interventions

Dismantle the non historic elements such as the metal structure

Segregate and store the bricks that can be used later into future phases to restore the building

Conduct a soil preparation which includes leveling, compact and stabilize the terrain



PHASE 3: ENSURING BUILDING STABILITY

This is one of the most important phases. This guarantees that while interventions are being intervened, the structure remains stable and safe for visitors and construction teams. The central section of the building that includes the chimney will be preserved as a ruin through interventions, highlighting the collective memory of Dogliani and its community.

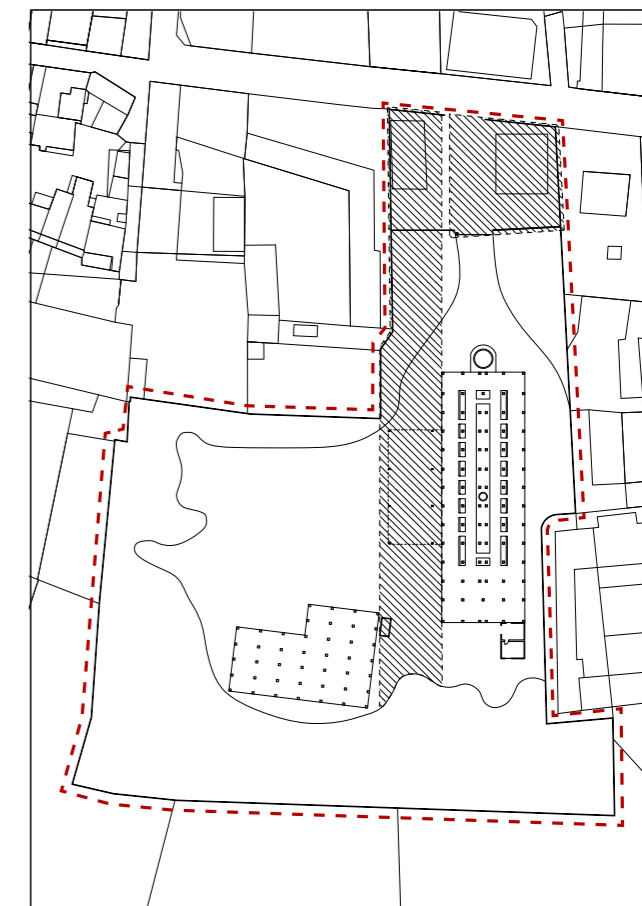
Interventions

Installation of temporary scaffolding, and shoring to stabilize walls, columns and roofs that could be at risk of collapse

Reinforce the critical structural points, especially the base of the chimney, and the columns.

Add some instruments that can help to measure any movement in the building during the construction

Make the correct restoration interventions for the nowadays decays to prevent any future decay



PHASE 4: ENCLOSE PRIVATE AREA AND CONSTRUCTION OF THE PROMENADE

To ensure the private space of the owner, as he still lives in the complex while producing, walls will be constructed to delineate his private area including a passage to Fornace Gaiero that allows him to continue his production process. In this phase, the focus will be the construction of a promenade that will work as the main axis of distribution of the project to guide visitors through all the functions later on.

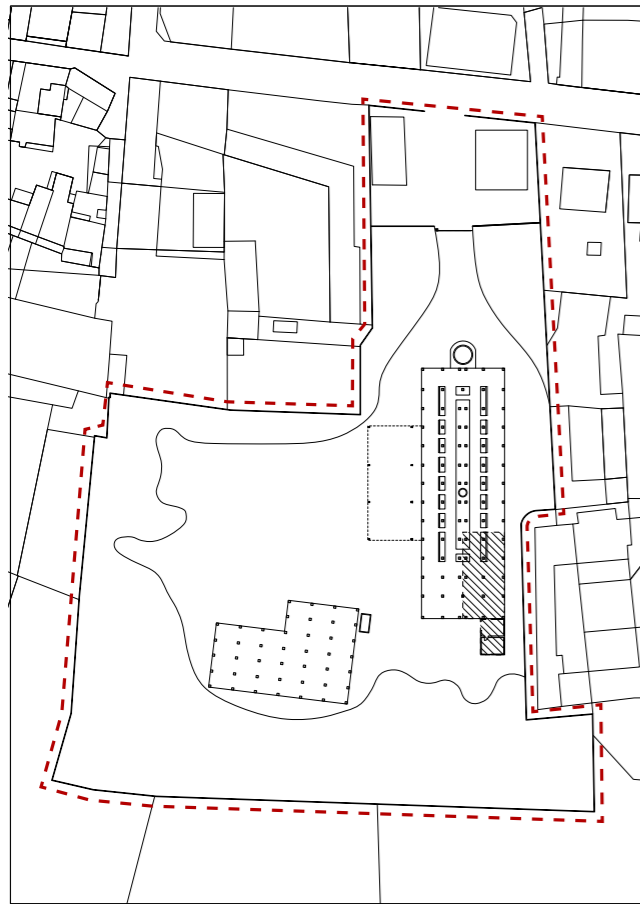
Interventions

Build masonry walls defining the private area of the owner in order to keep his privacy from the public area

Create the promenade with local materials incorporating the necessary inclinations for the accessibility

Add the lighting fixtures integrated to the ground or pathways to guide the visitors and highlight key elements of the site

Intervention area of the phase Delimited area of the site



PHASE 5: PRODUCTION AREA RENOVATION

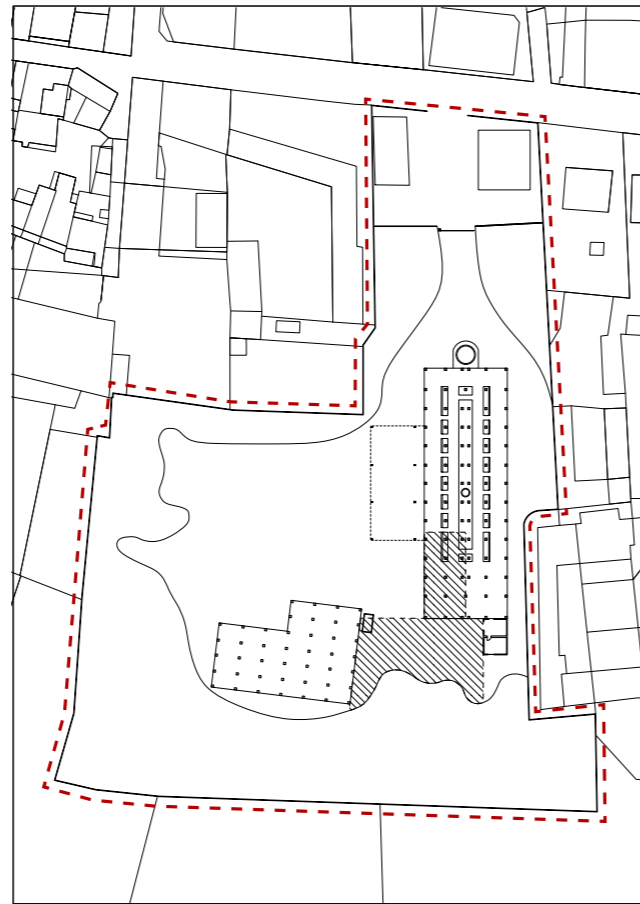
Production of bricks and ceramic is active today, part of the Hoffmann Kiln being intervened together with the floors and roofs to ensure an efficient and organized production line providing designated spaces for mixing the raw material, molding the bricks, firing, drying and packaging for the delivery.

Interventions

Remove invasive vegetation, debris and non original elements obstructing the site's visibility

Document and map the building's current state through pictures, laser scans or drone mapping for future reference

Set up temporary fences and safety signs to secure the area and prevent unauthorized access



PHASE 6: WORKSHOP AREA AND OUTDOOR MUSEUM

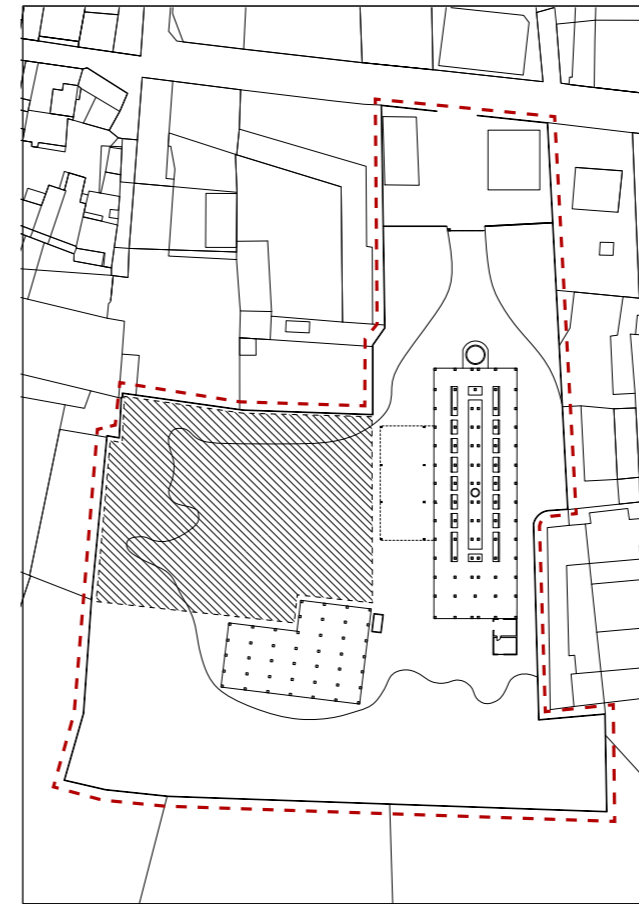
This phase is part of the creativity cluster, involving the adaptation of spaces for brick and ceramic workshops. This space will offer visitors the opportunity of learning a new skill and highlighting the Gaiero family's tradition and passion for the brick production process and transferring their knowledge. Taking into account that nowadays all the machinery used in the past for brick production is still in the complex, they will be organized and exposed to honor the history and tradition of Fornace Gaiero and Dogliani's industrial past. Is intended to be an open-air exhibition and a gathering point for visitors

Interventions

Restore or replace the collapsed floor and roof to ensure the safety of the area

Enclose the area with a curtain wall in order to allow visibility to the production area and exterior but also maintain the workshop enclosed.

Create shaded seating areas and pathways through the machinery to explain the brickmaking process and site's history.



PHASE 7: PUBLIC SPACE

Design and construction of Piazza Schellino to honor the architect who gave Dogliani a unique identity compared to other towns in the Langhe region. This public square will be used for community events, providing a large space to host larger events, which are currently done in smaller and in some cases less suitable spaces.

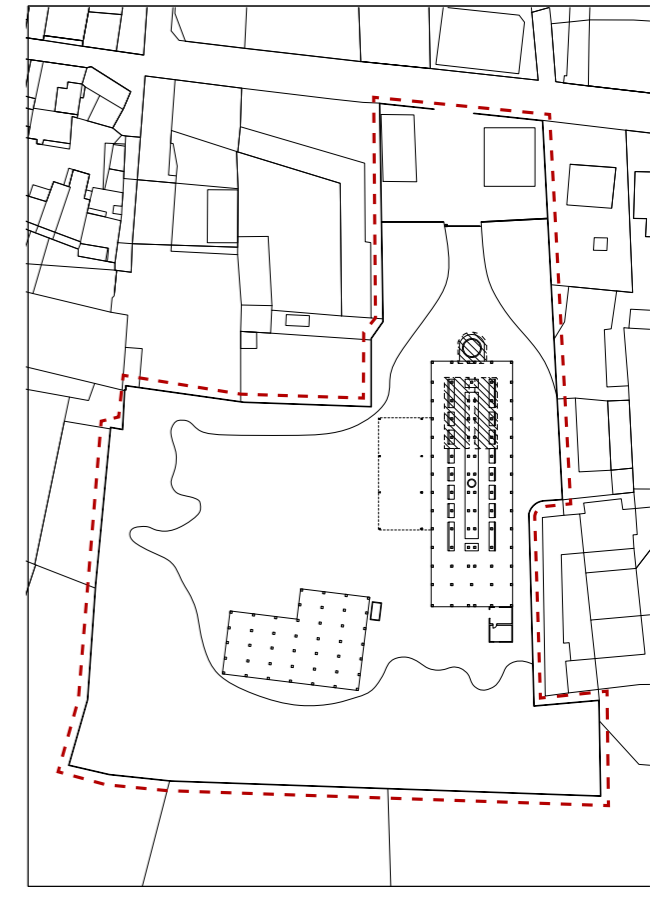
Interventions

Design piazza Schellino using terracotta materials, specially bricks with decorative patterns referring to Schellino's architectural motifs.

Create the concrete paths and wooden decks with seatings to accommodate the community.

Excavate to create the small circular amphitheater

Include the green areas, and install sound and lighting systems for night events.



PHASE 8: INTERVENTION OF THE GAS-OIL TANK AND HOFFMANN KILN VAULTS

To create habitable spaces, specially on the ground floor of Fornace Gaiero, the vaults of the Hoffmann Kiln need to be modified to generate connections between the interior and the exterior while preserving the industrial essence. New access will be added. The gas-oil tank and its wall of restraint will be demolished, to build a new structure closed by a skylight. On the other hand, the extension of the Hoffmann kiln will also be developed into an elliptical space that reflects the historical importance of Hoffmann ovens, that in some cases were finished by a semi-circle form. This new addition will have openings to prevent losing space and this will invite visitors to explore the original interior of Fornace Gaiero

Interventions

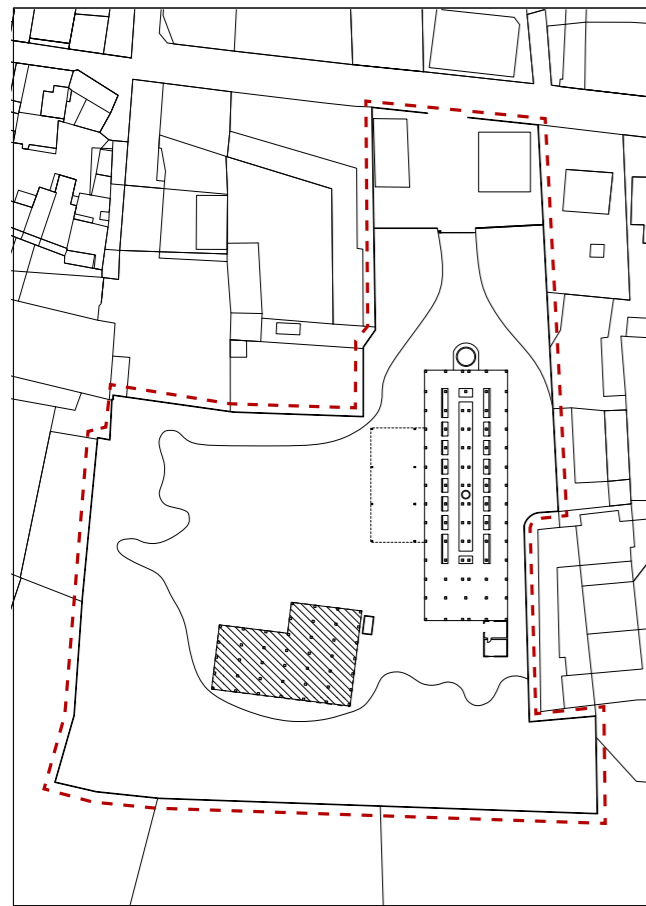
Reinforce the Hoffmann kiln vaults with steel reinforcements

Add curtain walls and glass doors to create seamless transitions between interior and exterior spaces

Reconstruct the gas oil tank as a symbolic centerpiece with a skylight, and close it to generate a temperature room to store wine and have wine tastings inside.

Add a stair in the outside perimeter of the gas oil tank for an alternative exiting from the hotel.

Intervention area of the phase
 Delimited area of the site



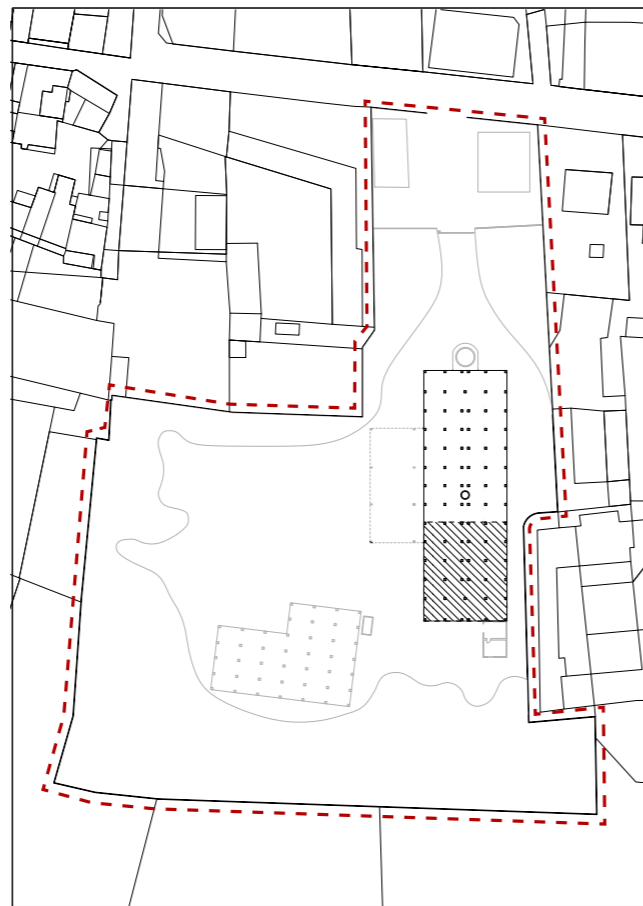
PHASE 9: MUSEUM CONSTRUCTION AND COM- PLETION

The building located on the southwest part of the complex will be adapted to create exhibition spaces that remark the industrial heritage of Dogliani. The structure will be renovated and walls will be constructed to guarantee the confort and a path to discover the brick world showcasing the elements produced by the Gaiero Family and the production process

Interventions

Demolish and reconstruct the southwest building's structure to display more historical elements from the brick production.

Design modular exhibition spaces with movable walls and lighting.



PHASE 10: MULTIFUNCTIONAL SPACE

To accommodate different types of events, and considering that Dogliani hosts events in both outdoor and indoor spaces, a closed space will be designed to complement the new Piazza Schellino. This space will be able to host events requiring special infrastructure, such as conferences, Balliamo a Dogliani, and the Festival della TV, which can take place both outdoors and indoors. The space will have an open floor plan with movable partition walls to adapt the layout to the different needs of the community, for both public and private events.

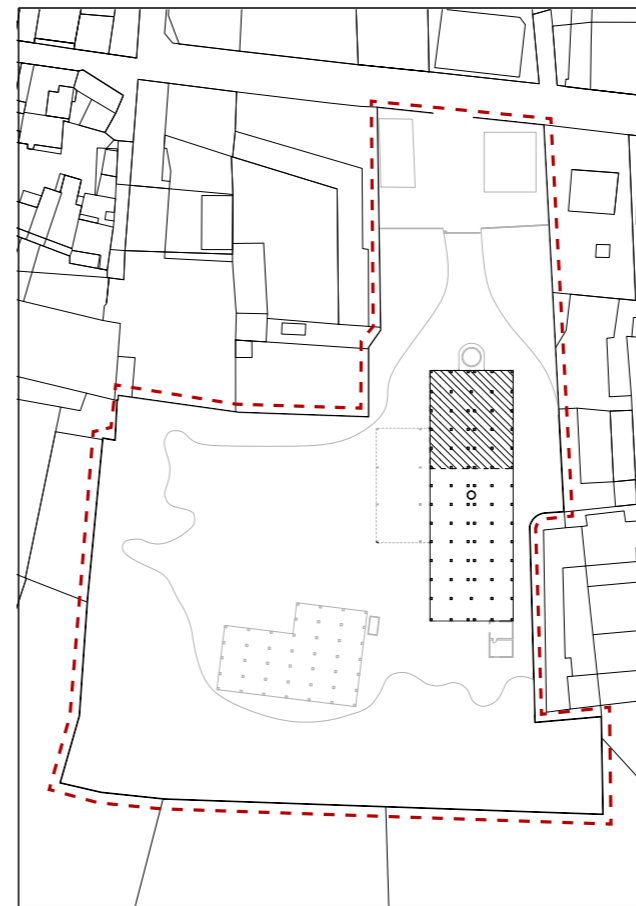
Interventions

Restore and replace the floor and roof to ensure safety, and open the back to connect it with a back terrace

Demolish the second floor to create a double high space.

Equip the space with movable partition walls to configure layouts quickly for conferences exhibitions or other events,

Add acoustic treatments and climate control systems for maximum comfort during various uses.



PHASE 11: ACCOMODATION

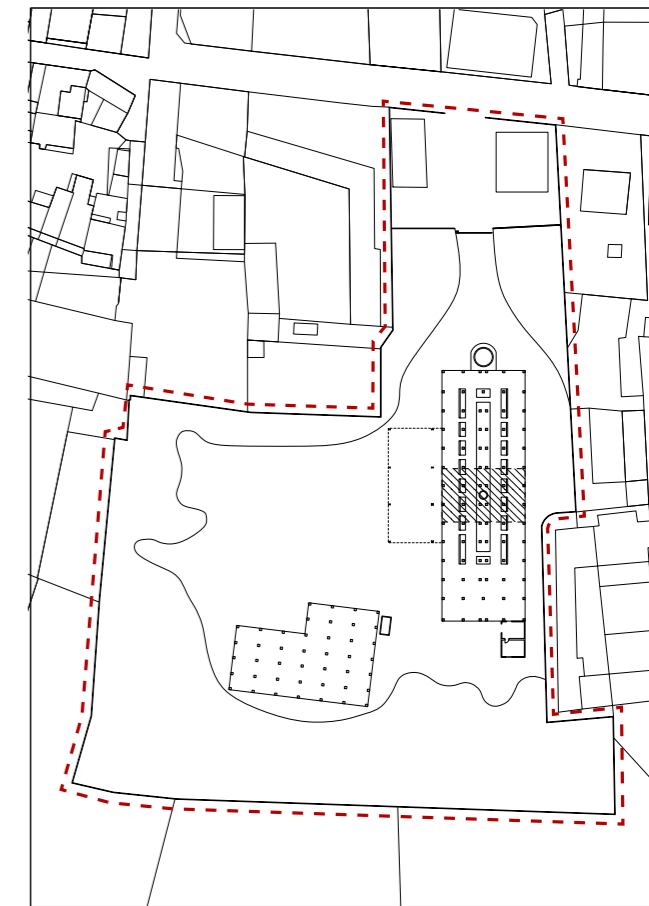
To create a more accessible and closer accommodation solution to the new cultural hub of Dogliani, a proposal is made for a hotel that not only offers proximity to the town center but also different cultural experiences, such as the Brick Museum, its workshops, and its winery/restaurant, which represent the cultural heritage of Dogliani and its community.

Interventions

Design hotel rooms blending a contemporary support and historical character.

Develop shared spaces such as lounges with views of the Fornace's site

Design an inside stair to get to the second floor of the rooms.



PHASE 12: CENTRAL PATIO

During all the phases, this central space within the building remained as a ruin. In this last phase is proposed a patio that connects, visually or directly, the functions developed in the ground floor of Fornace Gaiero, the promenade and the public square while admiring the chimney.

Interventions

Demolish the remaining upper floors and unstable structures within this area to create a fully open and unified space allowing a full view of the chimney

Two staircases will be added to provide access to the upper floors

Create a central walkway or bridge will be added to connect the upper floor

Installation of elevator to provide a second accessibility to the second floor.

Integrate lighting and landscaping elements, to emphasize the industrial essence while offering a welcoming environment.

07

DESIGN




The adaptive reuse design of Fornace Gaiero in Dogliani is intended to restore its historical identity as a former brick factory, introducing new, contemporary functions that create a strong cultural and social bond between the space, the local community, and tourism. The project will make the area a multi-functional hub: from the brick and wine museum to the restaurant/wine bar, craft workshops of bricks, a hotel, and even flexible spaces for local events. One of the peculiarities of the project is the creation of a new public space dedicated to the great architect Schellino, enriching the historical narrative and strengthening the cultural identity of Dogliani.

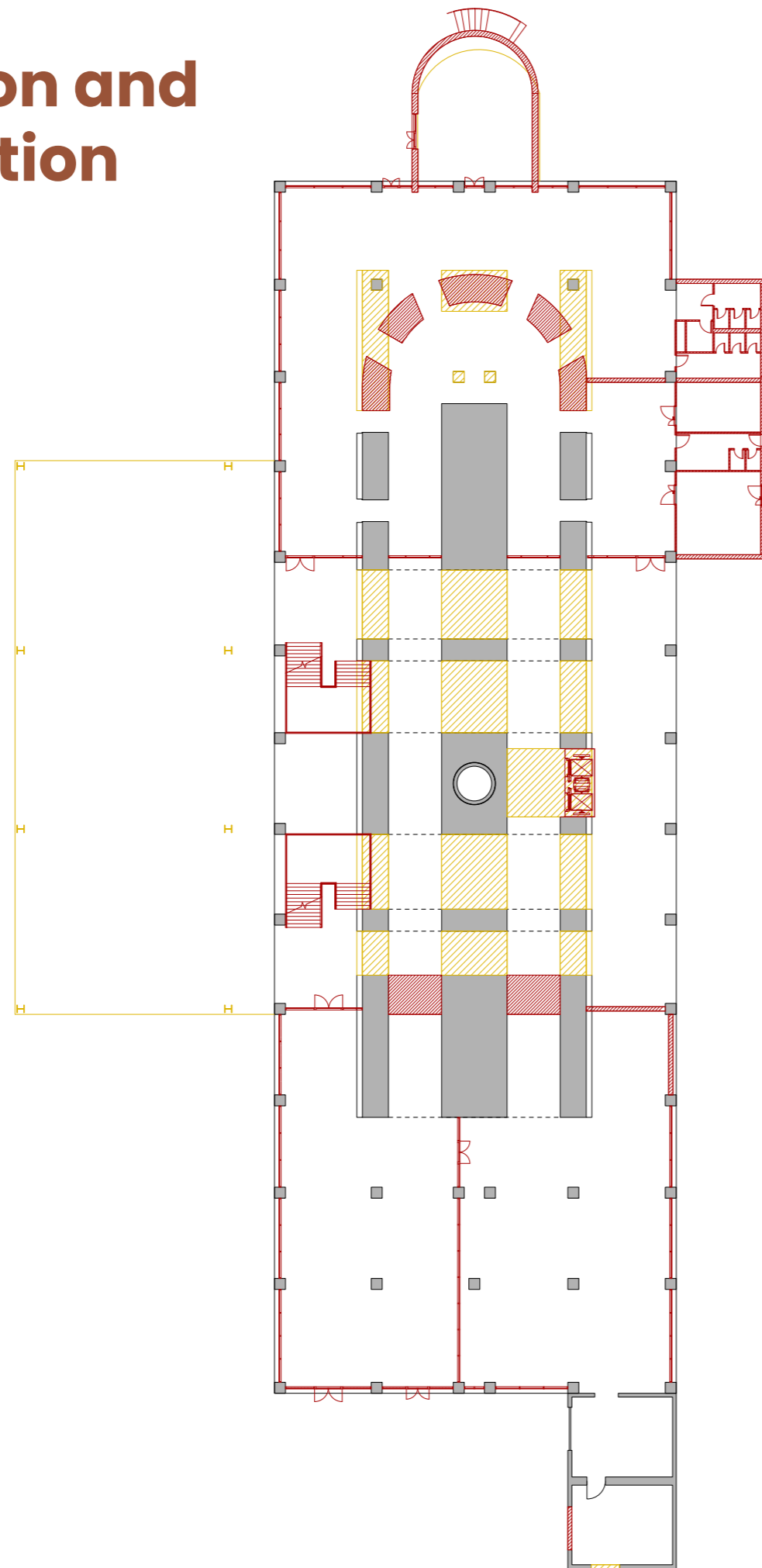
Central to the project is the construction of a linear promenade that guides visitors through the site, emphasizing its historical axis and connecting various functional areas while offering a coherent spatial experience. The restoration of key industrial elements, such as the Hoffmann kiln vaults and the gas-oil tank, reflects a commitment to preserving the authentic character of the site. Mixing historic preservation with modern architectural interventions, the design revives the building's industrial heritage and reintroduces the Fornace Gaiero to the people of Dogliani, reconnecting the town with a piece of its history that had remained important yet forgotten.

- 7.1. Demolition and Construction plan
- 7.2 Uses axonometry
- 7.3 Plans
- 7.4 Sections
- 7.5 Facades
- 7.6. Views

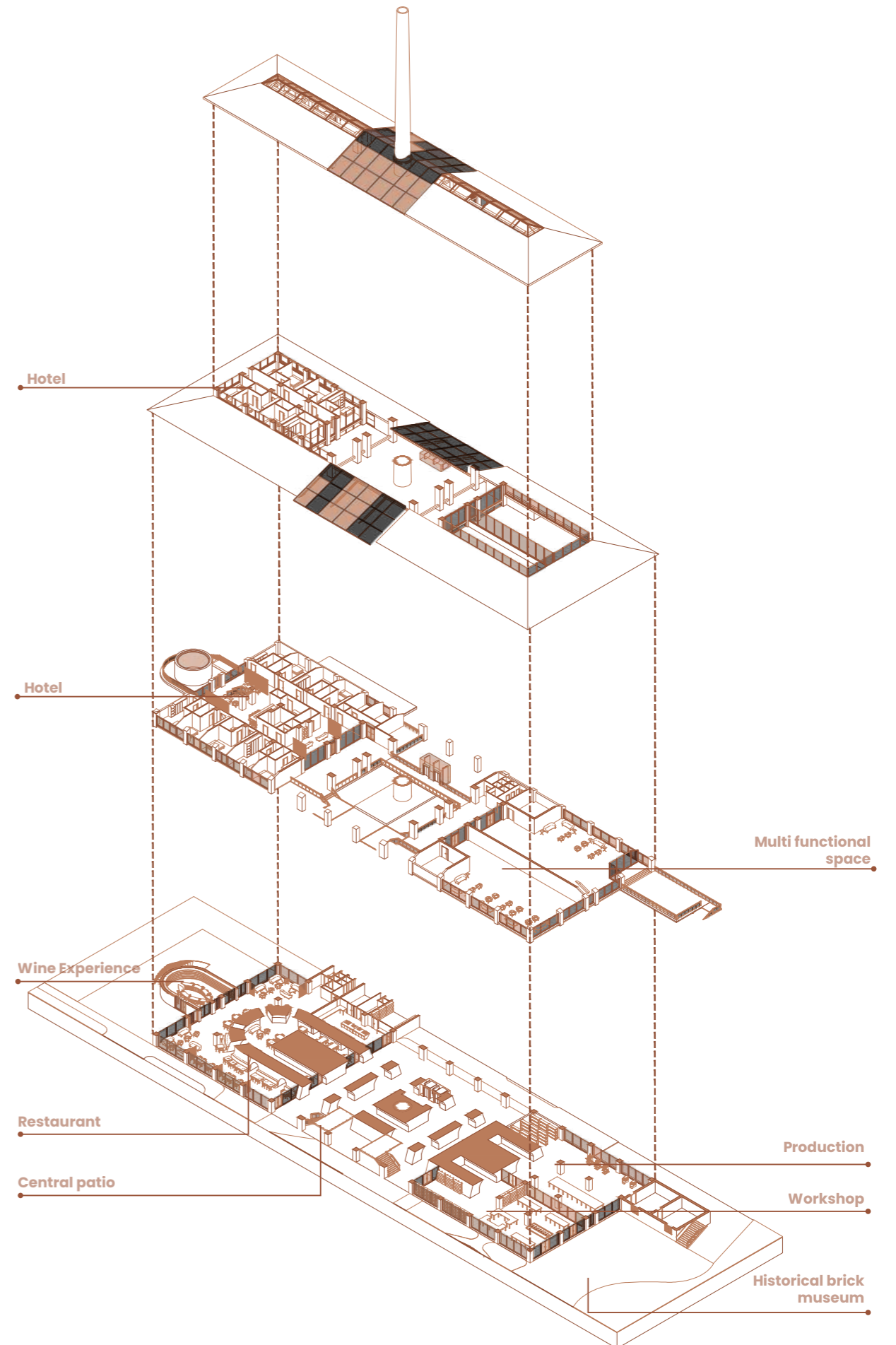
7.1 Demolition and construction

Ground floor
Scale 1:40

-  Demolition
-  Construction
-  Remaining structure

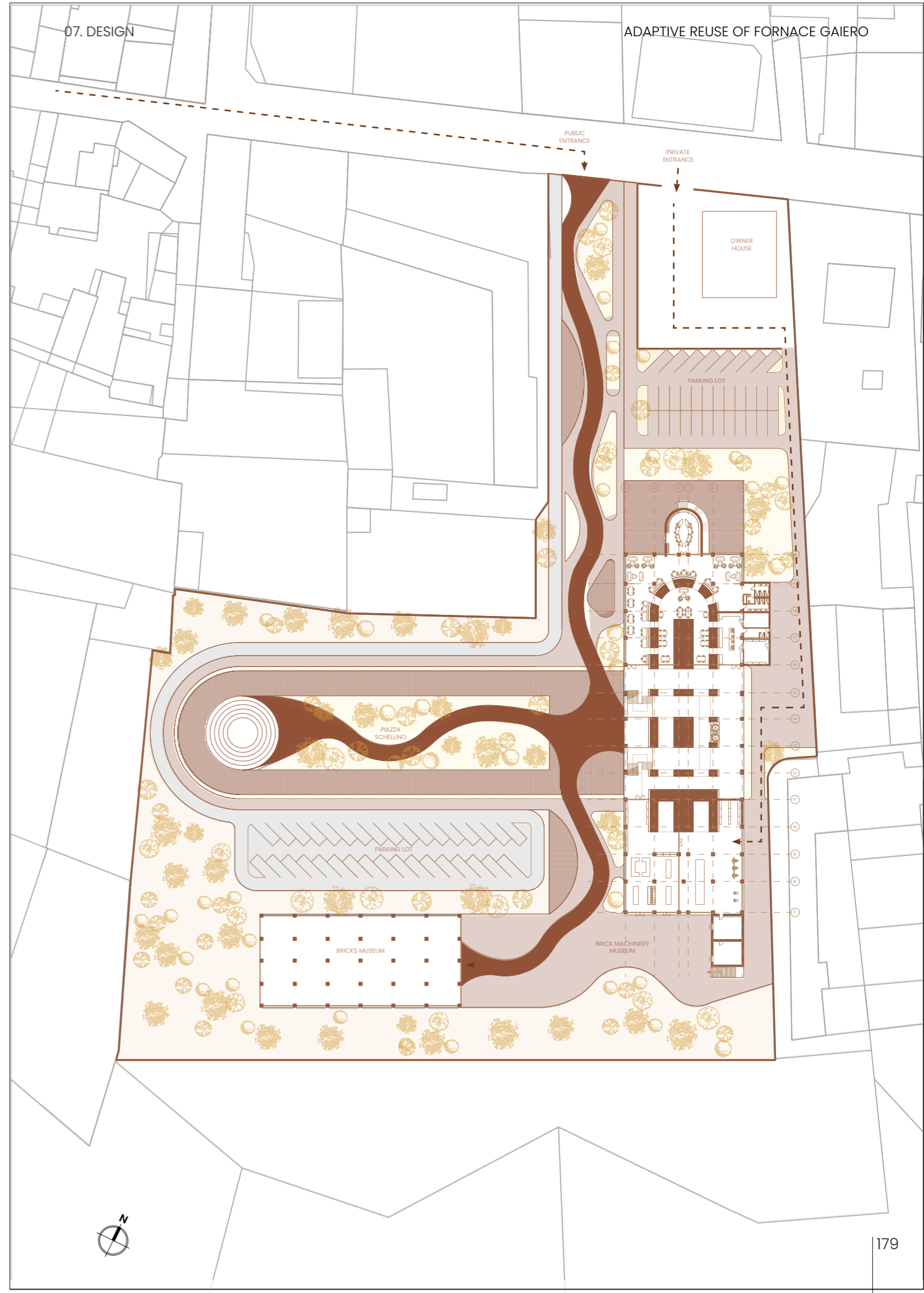


7.2 Uses axonometry

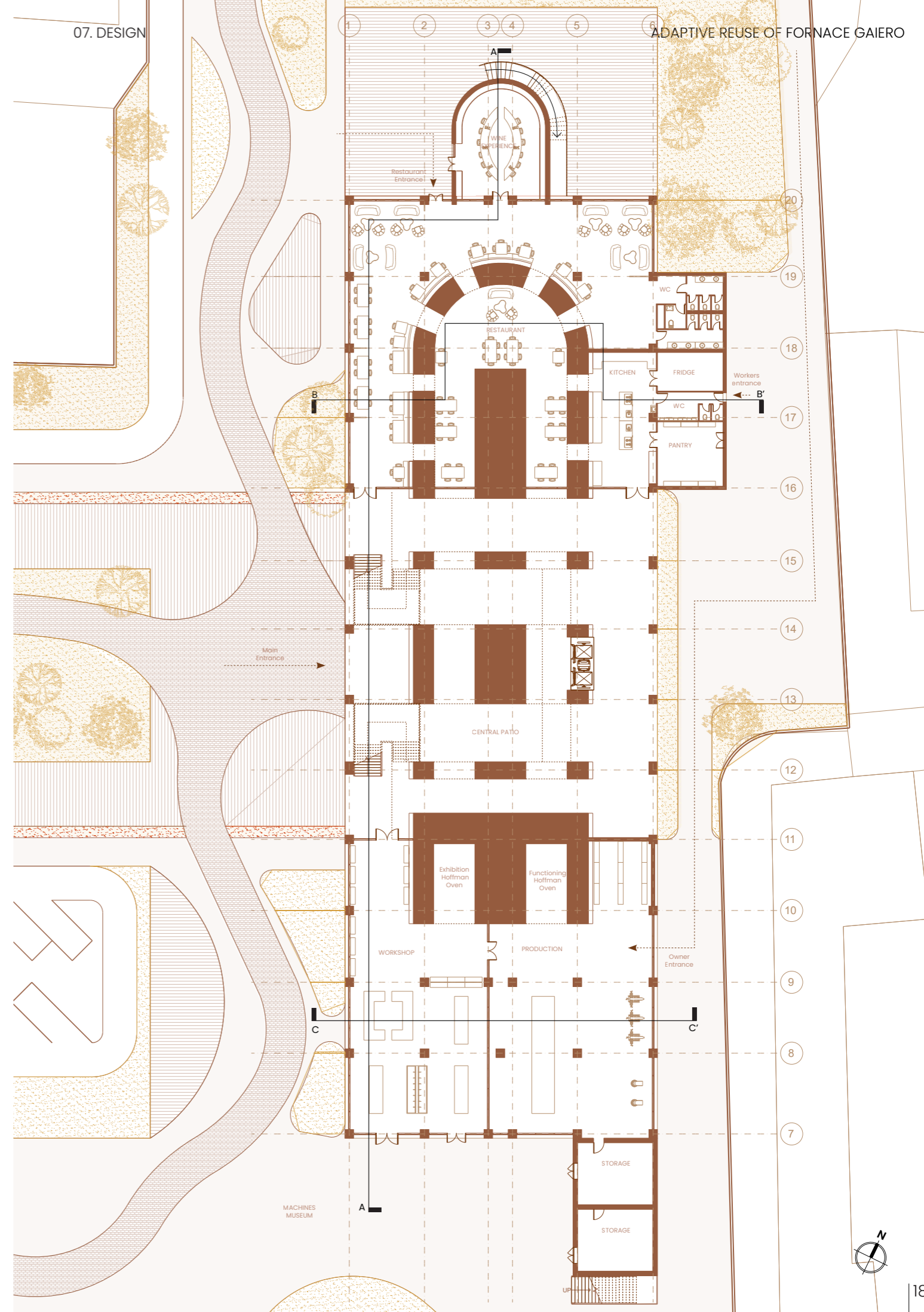


7.3 Plans

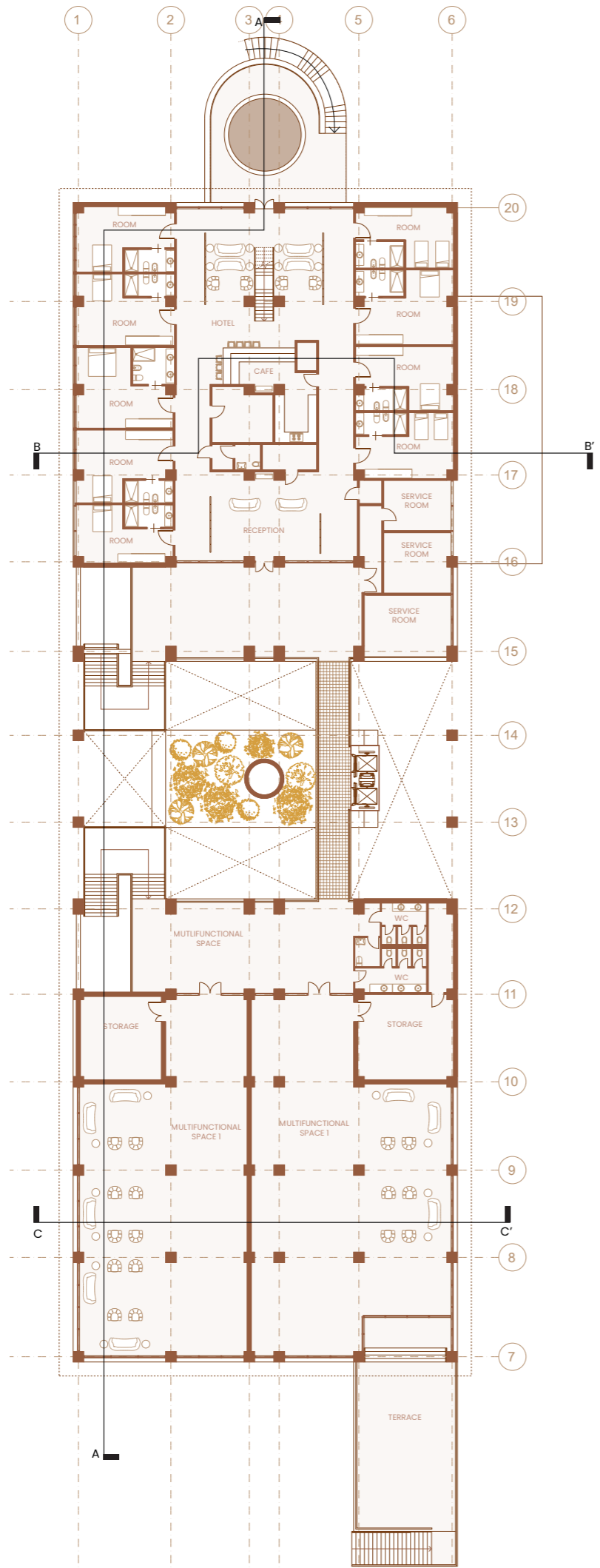
Ground floor
Scale 1:100



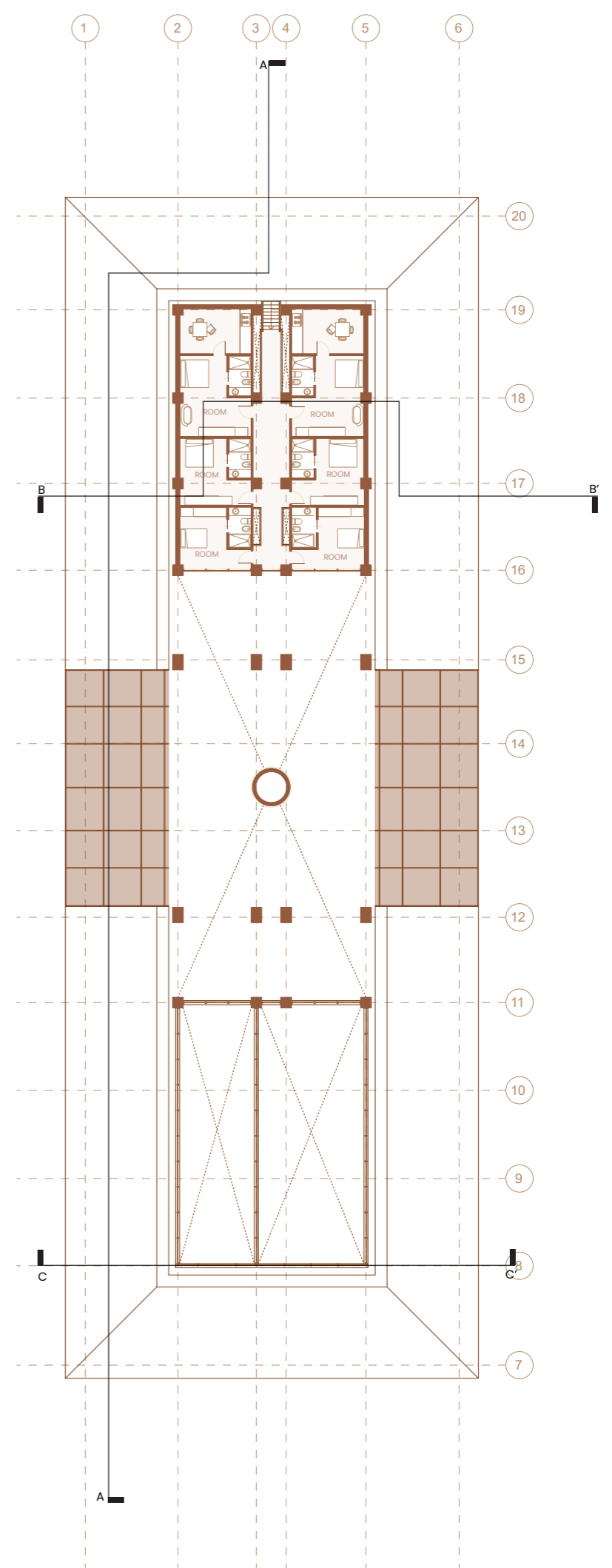
Ground floor
Scale 1:40



First floor
Scale 1:40



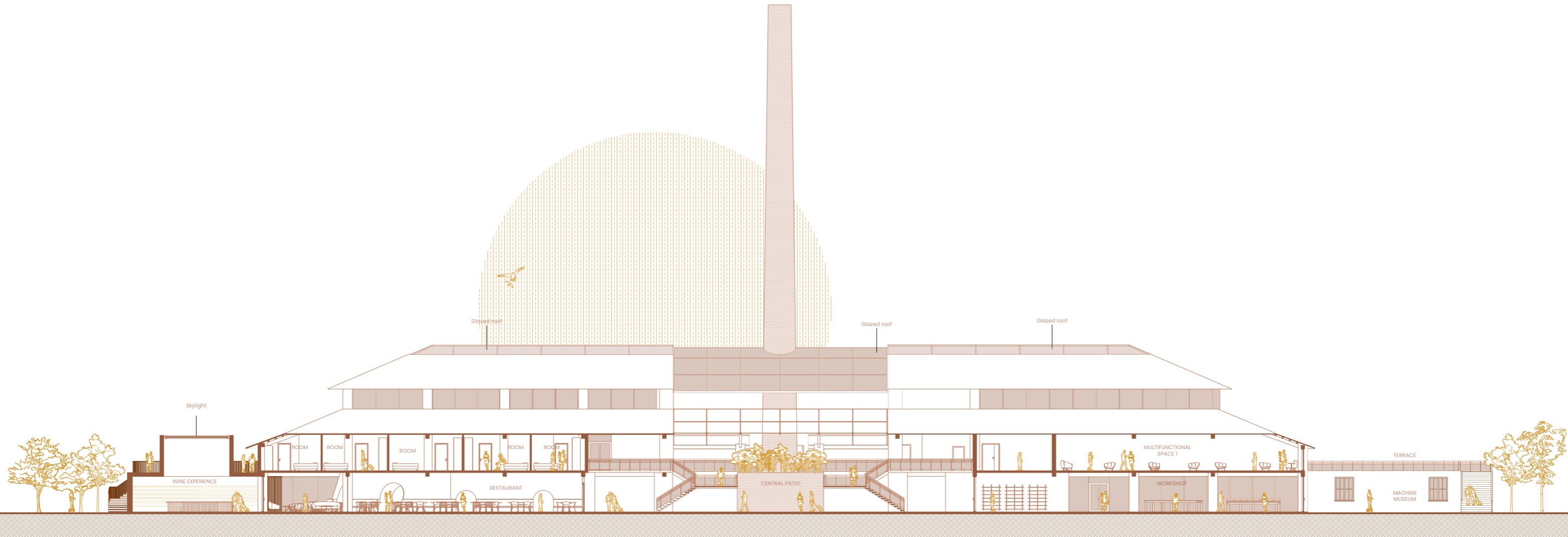
Second floor
Scale 1:40



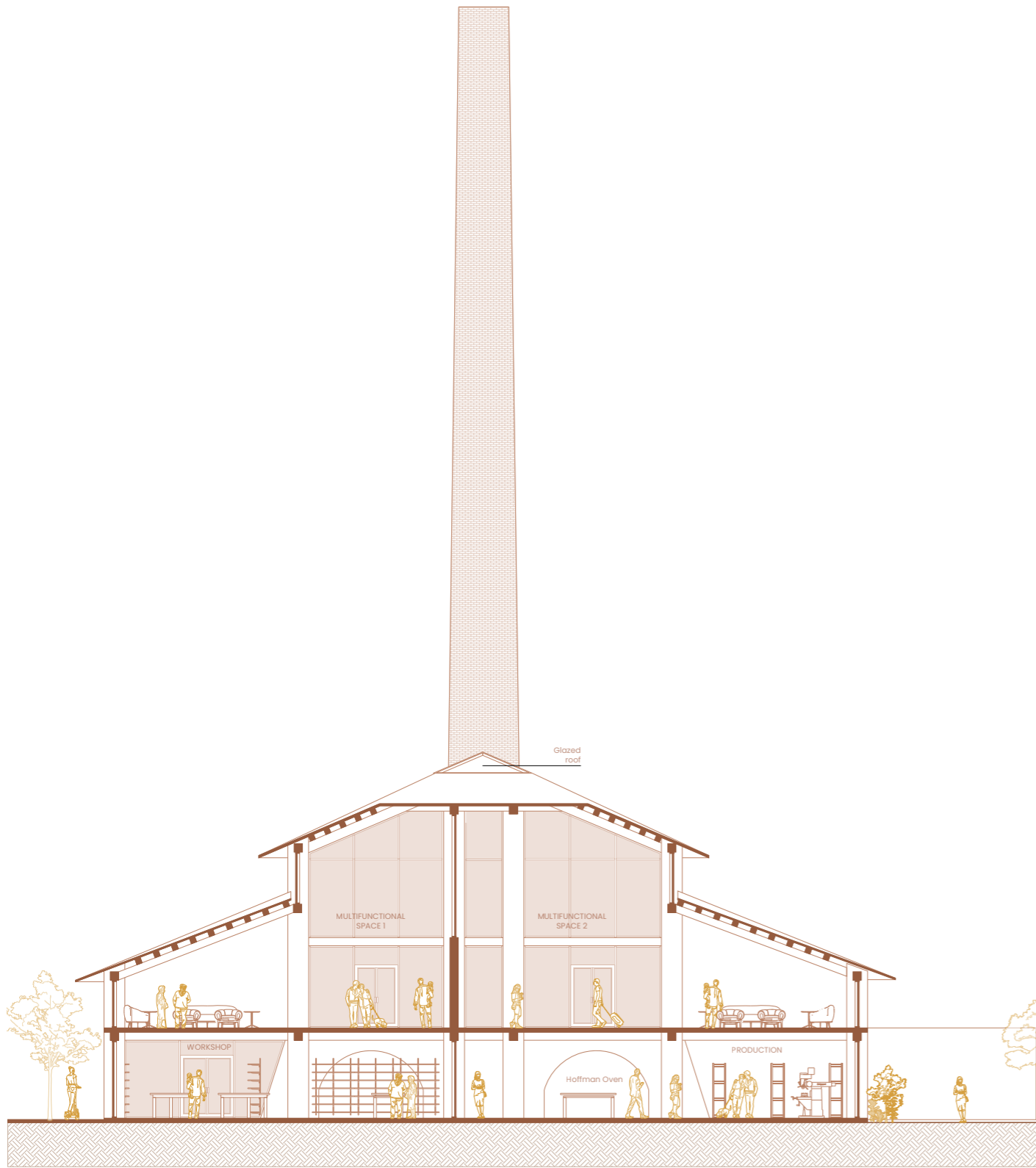
7.4 Sections

Section A-A'

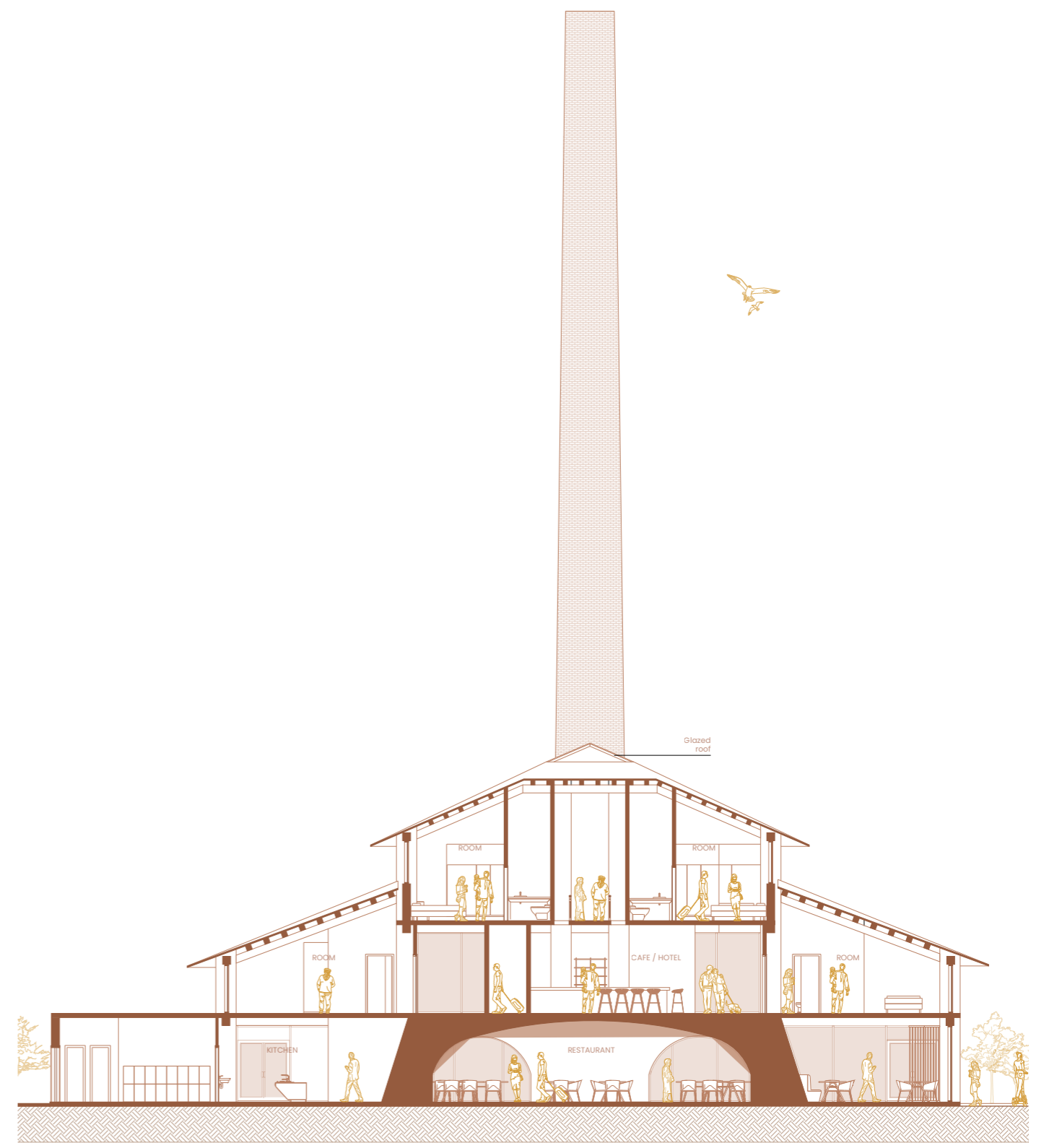
Scale 1:30



Section B-B'
Scale 1:20



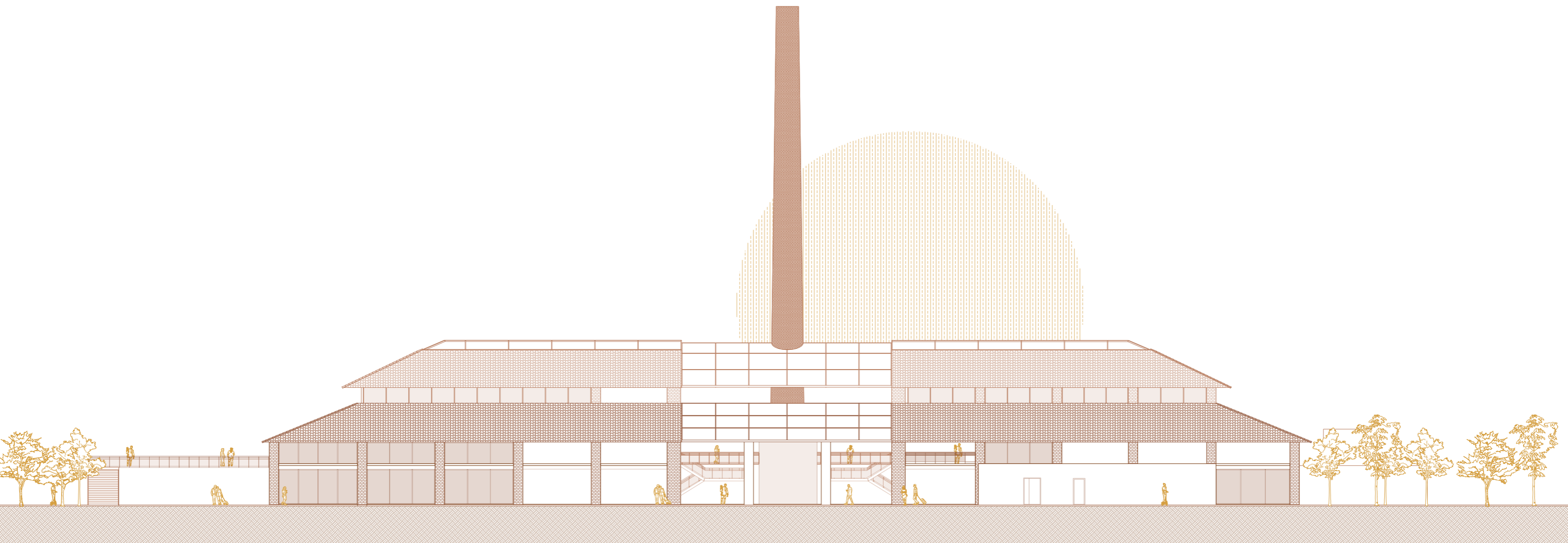
Section C-C'
Scale 1:20



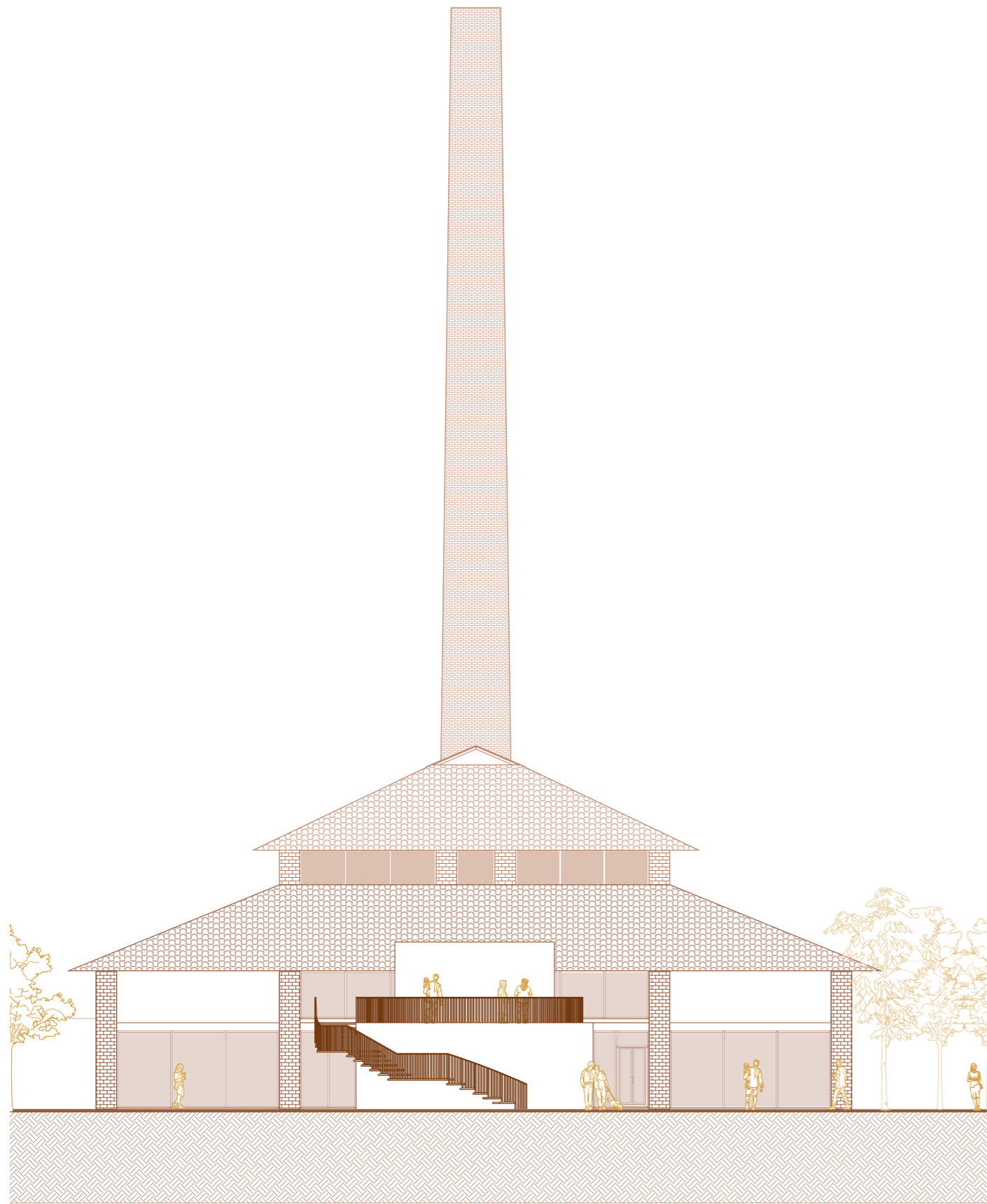
7.5 Facades

East Facade

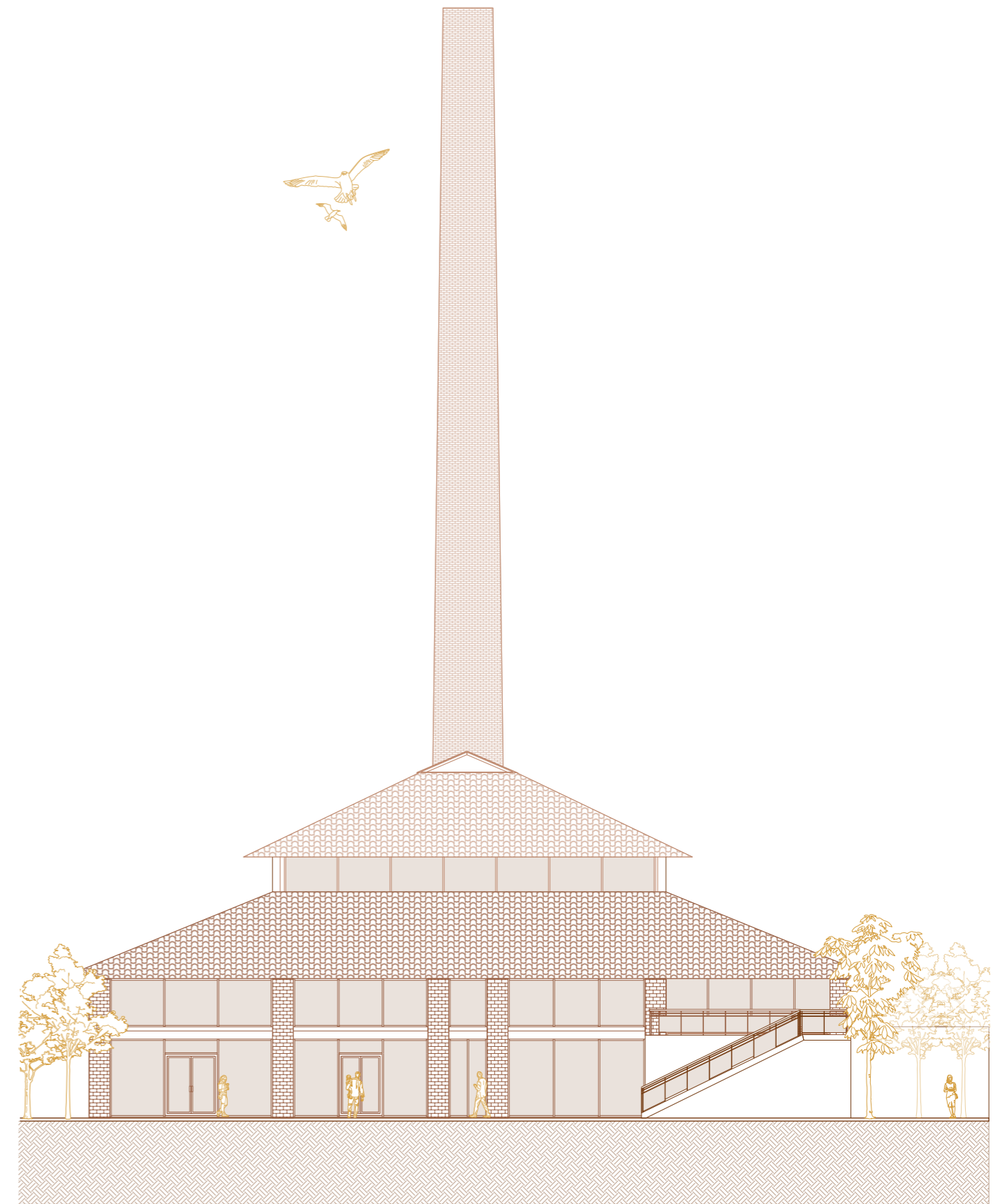
Scale 1:30



North Facade
Scale 1:20

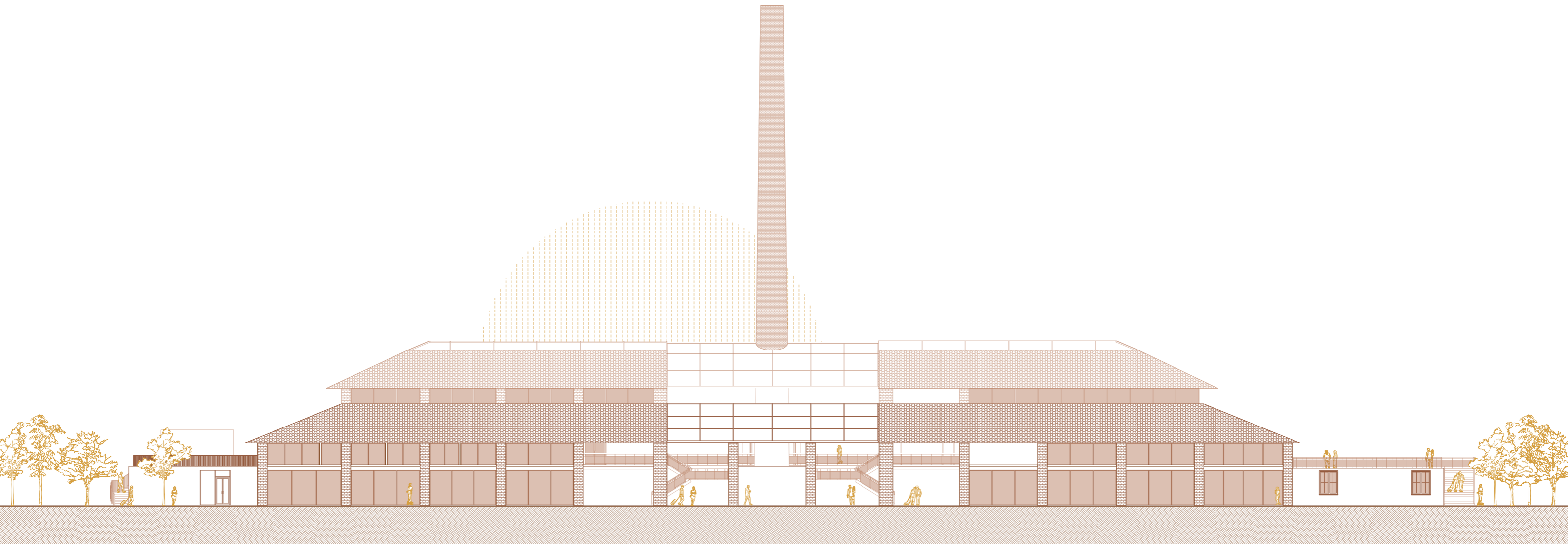


South Facade
Scale 1:20



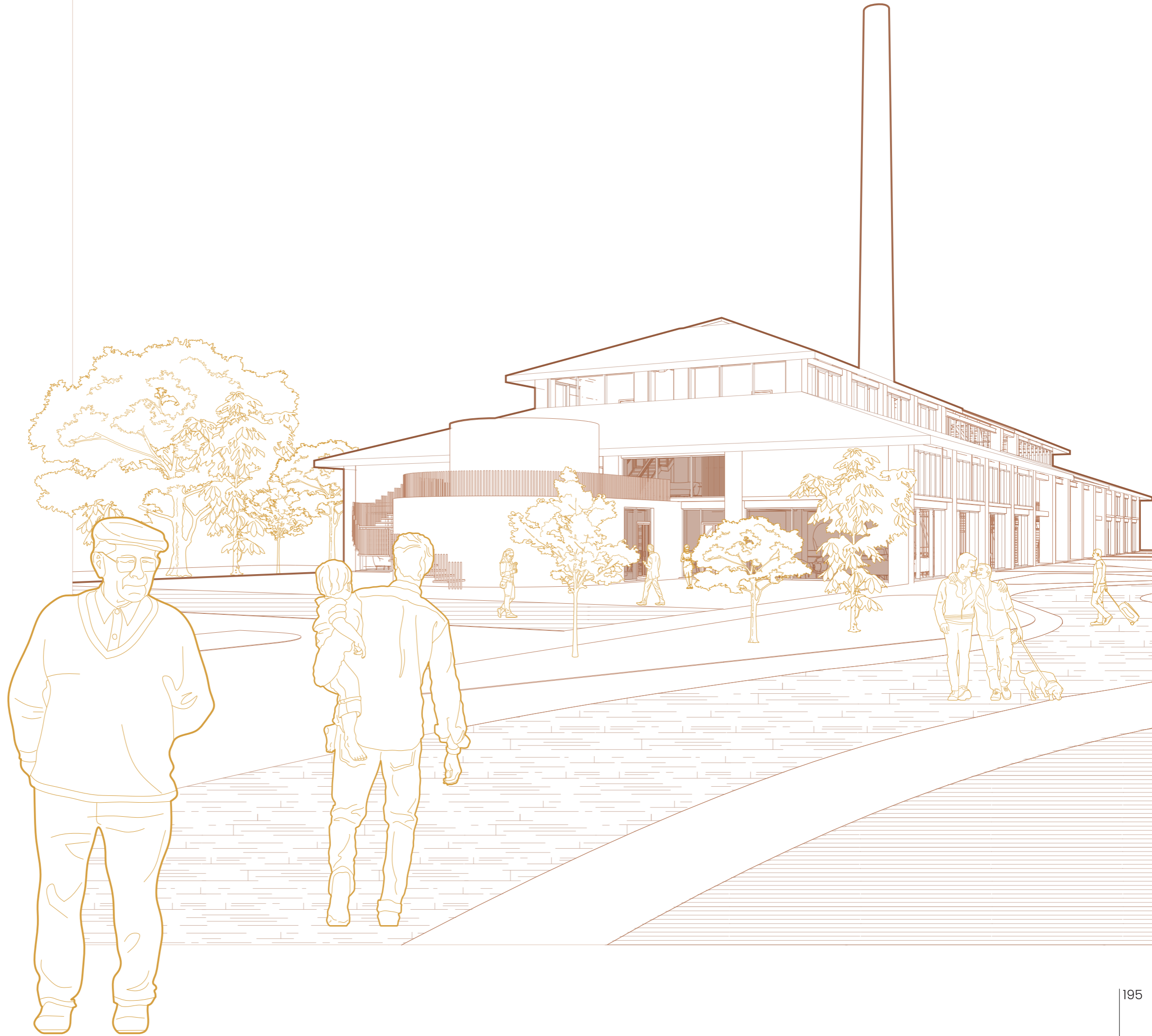
West Facade

Scale 1:30



7.6 Views

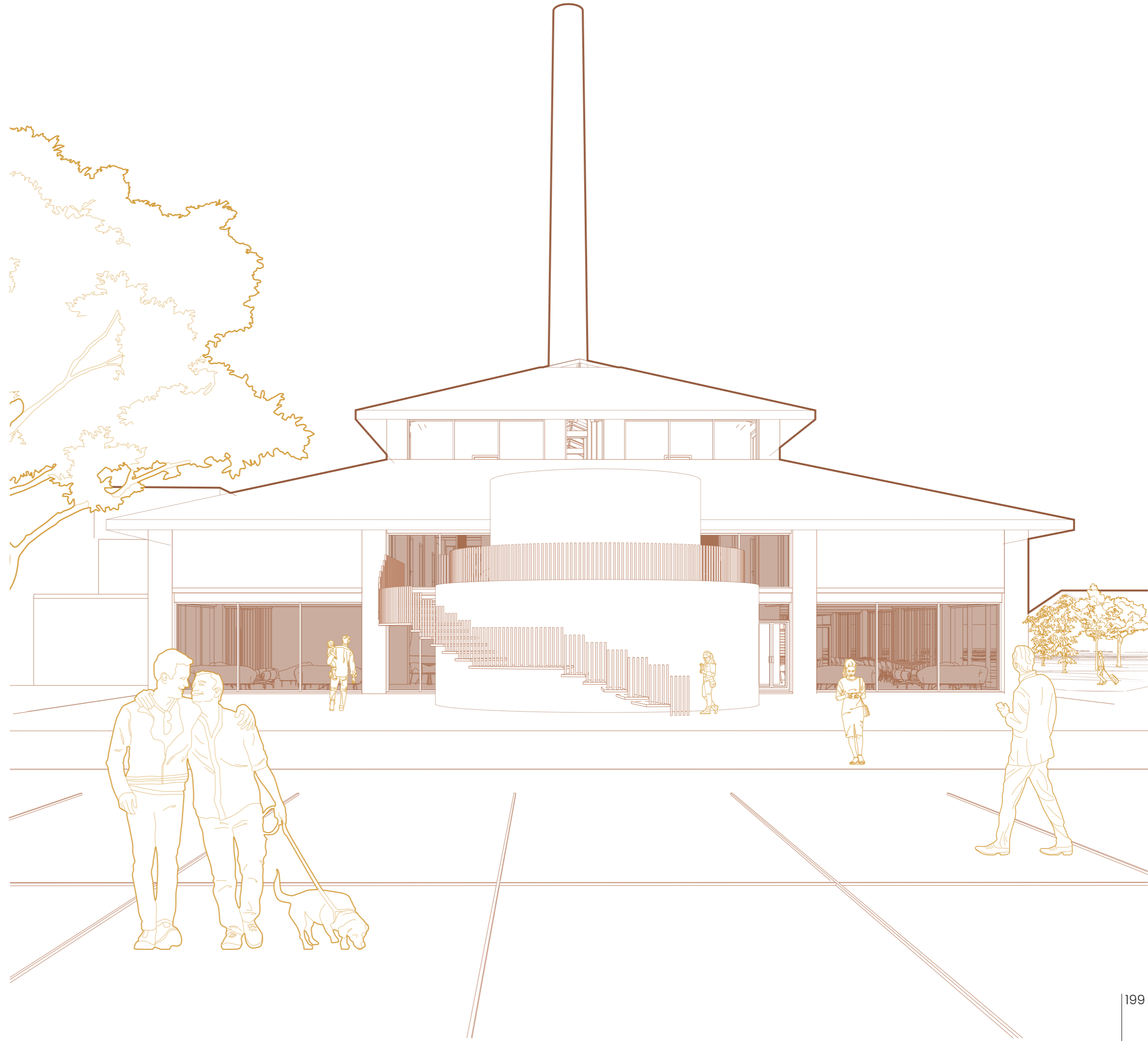
View of the entrance
towards the project



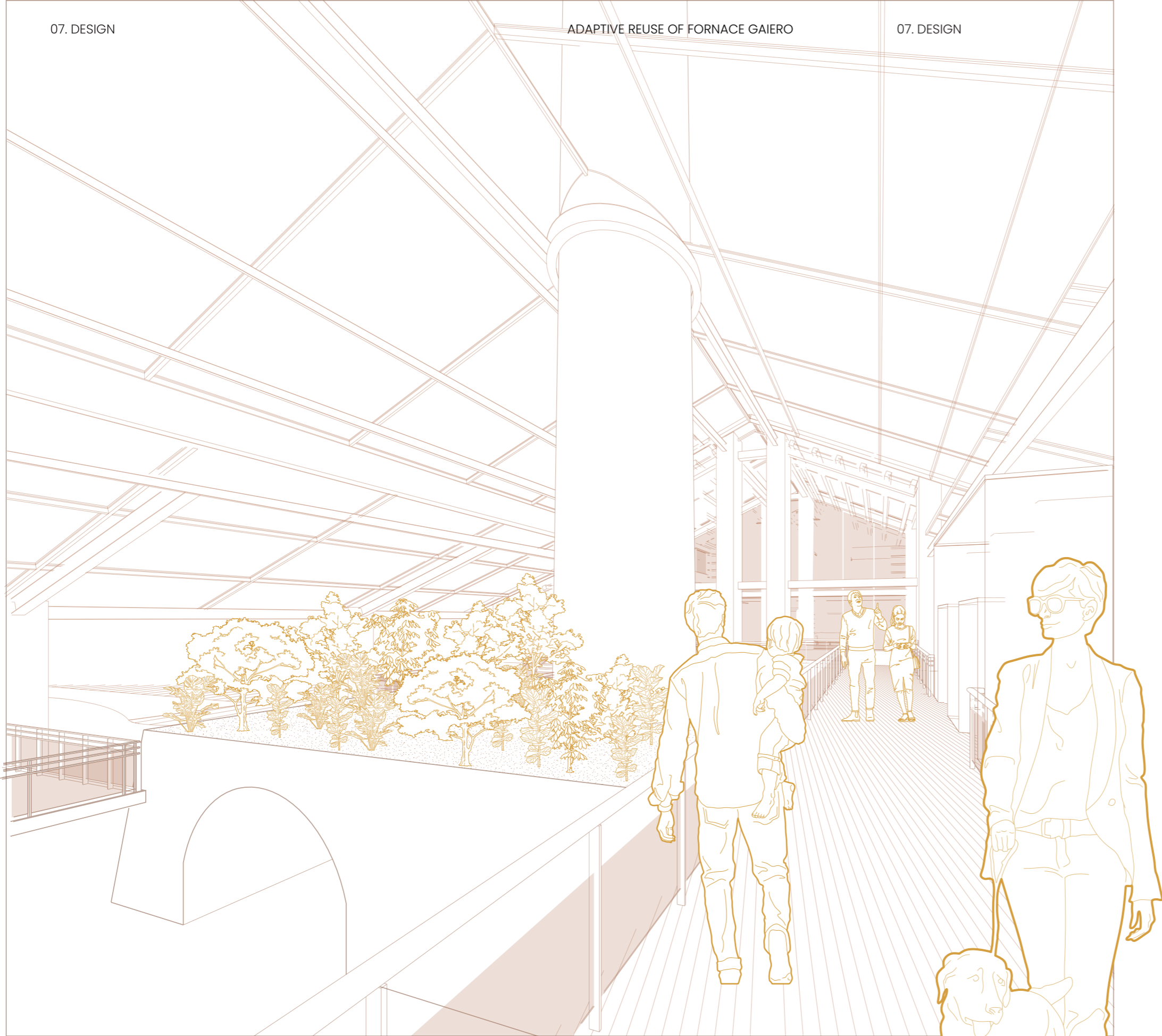
View of Piazza Schellino to the project



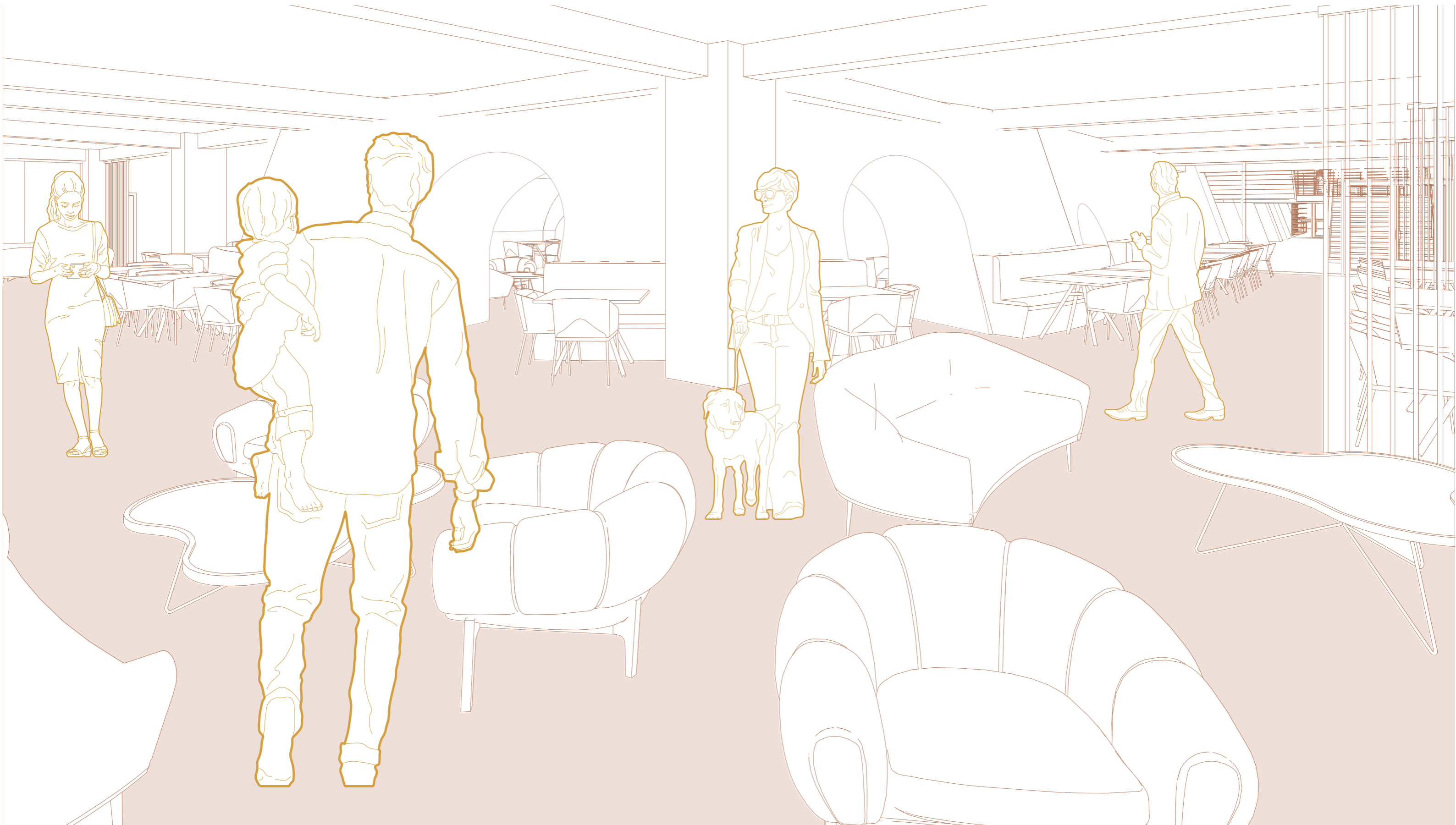
View of the north facade



View of the central patio



View of the restaurant



View of the wine experience area



View from the workshop



View from the production area



08

CONCLUSION

The adaptive reuse project for the Fornace Gaiero in Dogliani represents more than just restoring an old industrial building; **it aims to reconnect the town with its history and think in its future.**

The former brick factory is transformed into a space that joins a museum of bricks and wine, a restaurant, workshops, a hotel, and a multifunctional space; this project links the past and present of the town and its community. It respects the local wine culture, the brick-making tradition and Dogliani's economic history while creating new opportunities by hosting community life and dynamics.

The different phases proposed on the project shows a detailed approach to restoration and Adaptive Reuse, not only in its design but also by finding **stakeholders to invest in this Industrial Heritage site.** Starting with the cleanup and demolition of damaged exterior elements, and the stabilization of the structure, these first steps guarantee safety and prepare the site for new purposes.

The main three elements of the project are the construction of the promenade (representing the streets), the restoration of the building (indoor spaces) and the new public square (outdoor spaces). The renovation of the production area preserves the industrial character while maintaining the existing use alive. The creation of workshop spaces and an outdoor museum enriches cultural engagement, while the public area honors architect Schellino and adds a local historical celebration. Moreover, the interventions in the vaulted walls of the existing Hoffmann kiln and the gas-oil tank maintain the site's soul. Finally, the design of the museum and other facilities such as the hotel and the multifunctional space bring new life to the site, making it an essential part of the town.

A major aspect of the project is hosting local events in different areas of the complex that enhance the community's connection with the Fornace Gaiero. **With cultural, educational, and social gatherings, the site will become a lively meeting point for residents and tourists that supports local traditions and fosters social unity.** Not only these events, but all the functions together, ensure that Fornace Gaiero is not just a preserved landmark in Dogliani, but a recurrent site in the town life.

Inhabitants and tourists will rediscover a forgotten landmark in Dogliani, promoting Fornace Gaiero as an anchor of local culture, local growth, and traditions. This project reflects that through careful planning, creativity and, especially, respect for historical context, Adaptive Reuse can turn abandoned places into useful and significant spaces for future generations.

09

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9.3 Figures

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Figure 02

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