

INHABITAT

growing for healing

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INHABITAT

growing for healing



INHABIT

to live or dwell in; occupy



HABITAT

the set of environmental conditions in which a certain species of animals or plants can live

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abstract

The work carried out for this thesis was considering the re-use of the rural architectural elements relating to the farmhouses, cascinas, in the Milan area and adaptation of spaces into a proposal for a new norm of living related to horticultural practices.

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Firstly, a description is given for what the cascina is and has represented in the past, explaining its evolution, the actors involved in the cascina as a company and practices that took place in terms of the idea of co-living and production. It was necessary to make a cognitive picture of the current reality to evaluate the way we live and its impacts on the environment to find a possible solution to create a positive impact while regenerating the cascinas as architectural assets but also reviving the social solidarity to enhance a more responsible way of urban life. The project activity therefore had as its object the redevelopment of a farmhouse in the territory of the Municipality of Milan, specifically the Cascina Robarello. The idea was to create modular units of housing which can be adapted to different numbers of inhabitants around the centralised common spaces as vegetable and fruit gardens and a common kitchen that can be open to the public to provide better connections with the neighborhood and to develop a sense of community. The choices that made were aiming to reach a self-supporting approach, so as to have independence from several points of view: the construction, management, the food and the energy to address the most crucial problems found regarding human impact on nature, especially concerning Milan. After the analysis made on the ecological condition for Milan, what has been realized that the most effectual problem is the energy consumption for heating of the houses which endangers the quality of the air, followed by respectively agricultural activities and the traffic. Namely, the project topic of the thesis is focused on how to re-use abandoned cascinas, which there is a considerable number of in the Northern Italy, for creating an environmentally responsible prototype of co-living spaces.

0.1

description on cascina

To give a simple definition cascina is a farmhouse, composed by a set of buildings to form a self-sufficient settlement, which is a typical agricultural structure of the Lombardia, partly Piemonte and Emilia-Romagna. These are the entire provinces of: Milan, Monza, Lodi, Cremona, Mantua, Vercelli and Novara . They are also present in the plain part of the Province of Bergamo, Brescia, Varese Turin; in the Brianza area of the Province of Como and Lecco.

Outside these provinces, this type of agricultural structure is found sporadically only in Emilia-Romagna, in particular in the provinces of Ravenna, Ferrara and Piacenza in the areas towards Lombardy. Most of the 'courtyard farmhouses', however, are located by the Milan-Turin axis to the north, the Po river to the south, the Mincio river to the east and the Sesia river to the west.

The farmhouses host a variety of functions in the building nucleus besides agricultural elements as, stables , barns, warehouses, space for production of cheese and butter, house of the farmers, generally gathered around a large courtyard. In some cases the larger farms also have a mill, the tavern, one small church and sometimes even a school to allow total independence from the outside world and which facilitates life for its inhabitants. In the larger farmhouses you can also meet two or three internal courtyards; in in this case they are called "multiple court" farmhouses. The layout of the buildings on four sides derives from an ancient tradition, which has been kept alive up to the present day for the safety. rational organization of spaces intended for various production activities and ease of social control. Where they are more isolated, the farms tend to take on the appearance of castles surrounded by the presence of large perimeter walls. In most cases the name of the farmhouse derives from the surname of the owner or founder of the farm, or named after some chapel, church or monastery located nearby.

The development process of the Italian rural landscape, the social organization of the community and the transformations of local techniques and production processes have led to a rich articulation of rural construction on the national territory, according to forms and typologies differ from region to region. The common characteristics can be listed as;

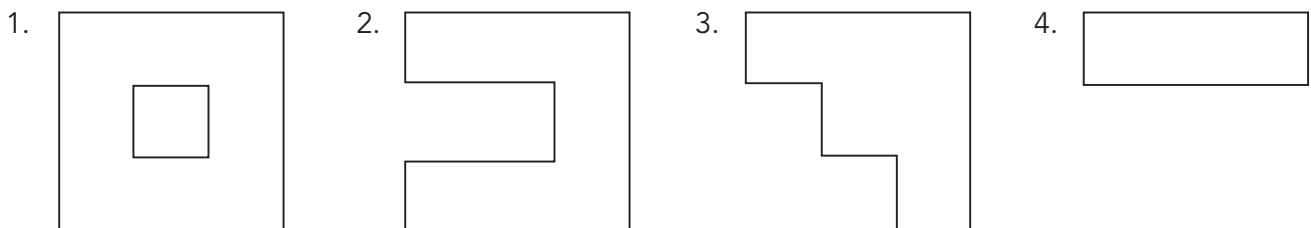
1. the character of a "dispersed" settlement, that is, isolated from the city or village;
2. the construction system with load-bearing masonry walls and horizontal wooden structures;
3. the courtyard typology, as a result of a progressive closing process of the open work space included between the main blocks of the peasant house and the barn stable.

0.1

description on cascina

According to the distribution of the buildings around the courtyard or courtyards, the farmhouses are divided into four types:

1. With the courtyard closed: the buildings form a square complex.
2. Open courtyard: the buildings form a rectangular complex with an open side, without buildings.
3. Side by side or separate buildings: a real courtyard is missing, even if the buildings are the same as those of the "classic" farmhouse.
4. Single body there is a single building.



The farmhouses represent a heritage of territorial architecture where it is possible to read the functionality and organization of past agriculture. They fit into the landscape, raising its quality, in its typological and formal complexity, the result of centuries-old refinements. The territory and the farmhouses are two intimately interconnected elements; there is talk of the building structure as an organism inserted in a landscape reality, where it plays the role of node of the territorial link.

The prevalence of large farms, their formation in relatively ancient times, their extension following the reclamation works, their subsequent transformation in relation to new cultivation practices give the rural architecture particular characteristics, which well differentiate it from those of the peripheral area. They can be summarized in the common note of the greatest complexity, both in terms of management methods and social relations between the workers as the owner, tenant farmer or farmer, permanent workers, and for the number of activities that they take place there because of their specialization. This splitting up of operations and the division of labor corresponds to a multiplication of housing and other buildings. Functional requirements dictate that all the buildings in the complex are grouped as much as possible and some in particular always joined together for the efficiency of production.

0.1.1

cascina milanese

Focusing on the designated regeneration project location, it is obligatory to define the context of Milan and how the very marked characterization of the territory has naturally influenced farmhouses' evolutionary processes.

History of the farmhouse in the Milan area is closely connected to geomorphic characteristics of the territory in which it settled, such as that a large portion of the Milan area from the west to the north-east, it falls in the so-called fontanili area, the area where the waters, absorbed by gravelly and permeable soils of the high plain, downstream they encounter fine and impermeable soils, characterized by typical crops of the irrigated plain. In the area of the dry plain, located immediately further north, we find, even if less extensive, the same cereal crops, the mulberry tree and the vine. The rotation system also varies by area zone. As for the rural settlements, to the south the scattered settlement prevails, which appears to be rather homogeneous thanks to the greater uniformity of the crops, while, as you head to the north increases the characteristics of heterogeneity and rural housing. In any case, the undisputed protagonist of the Lombard landscape is certainly the cascinas: the the building type that in the XVIII century will reach its completeness.

As for the architectural and typological scheme of the farmhouses, we can speak of typical examples to which the farmhouses refer Milanese; the essential elements found in the large farm houses are: the houses for workers and inhabitants, the cottages and the premises for the processing of the products. The houses of the farmers are placed inside a building with a simple, narrow body and elongated, devoid of any decorative element. Every family has of a room with fireplace on the ground floor, which represents the place for the domestic life, and one upstairs, both with two windows juxtaposed. These homes in their repetitiveness serial take on almost the rigidity of a module - from 20 to 30 m² per local - and are devoid of any comfort. The only exception is the house of the tenant farmer or the owner of the farmhouse. Located in a position that allows control over all internal activity of the company, it stands out both for its size and for some architectural elements like the porch overlooking the farmyard which often takes the form of a loggia or for decorative details that make it immediately distinguishable from other minor buildings merit. The house stands above all other buildings, indicating the presence of the tenant or owner of the company. It is usually embellished around by a garden, with ornamental trees and well-groomed hedges. Often it has a vegetable garden alongside fruit trees; the house has two floors, sometimes even three and, although it varies from farmhouse to farmhouse, the presence of a turret with the clock and the decorations of the facade they establish their priority role over the other buildings present. There are large rooms used for enhancing the social life, to receive guests and friends, where he often shows off furniture

0.1.1

cascina milanese

and furnishings. The bedrooms, in contrary to the peasant houses, were also equipped with comfortable mattresses. In the court, in front of the master's house, there are also the well, the oven and the chicken coop. The rooms that compose it are numerous and the connection between the ground floor and upper floors by internal staircase that is comfortable and easily accessible. Even the smallest details are taken care of: the kitchen has terracotta floors and windows, closets in the wall equipped with doors, the terracotta aquarol with running water, the fireplace. Often at the farmer's house are joined, or at least close, the caneva (i.e. the icebox), the press room, the pantries, the laundry room.

-

All this constituted a single building block surrounded on three sides and at the same time a protection that was used very often as an alternative to hedges or fences to protect the building by both animal and human invaders. At the front of the farmhouse was the courtyard with the well and the roofs of the various rooms of the farmhouse were always made with wooden elements as the main structure and with clay roof tiles for the covering. The fields surrounding the farmhouse were more or less extended depending on the importance of the farmhouse and the monetary availability of the landowners who ran it. The entrance door could be found both in the surrounding wall and very often in the block of the salaried workers' houses to form a sort of portal. Once the gate was closed, the farmhouse was practically a fortress which was essential considering the poverty of the populations who lived outside the city at that time.

Currently the farms owned by the Municipality of Milan are more than fifty. Arranged radially within the boundaries of the Municipality, they represent examples of Lombardia agricultural architecture of great historical, cultural and environmental value. Over the years, some of these farmhouses are been incorporated into the urban fabric by the development of the city, others did on the other hand, they are still found in agricultural areas or within parks. Some farmhouses are still partially used for agriculture, others are partly inhabited but have lost the agricultural identity, some have been managed by the Municipality or foundations, cooperatives and associations who have found the ideal place in these large and flexible spaces to develop a large number of different social and cultural projects, generally aimed at the neighborhood and the city scale, or some farmhouses have been adopted by neighborhood associations, which with the work of volunteers and often very few funds, keeping them alive with cultural, artistic and neighborhood events, and others are still abandoned and in ruins. To understand the history of this artifacts is the first necessary step to know and evaluate the usefulness of them today, a utility that goes far beyond the sole objective of conservation, which

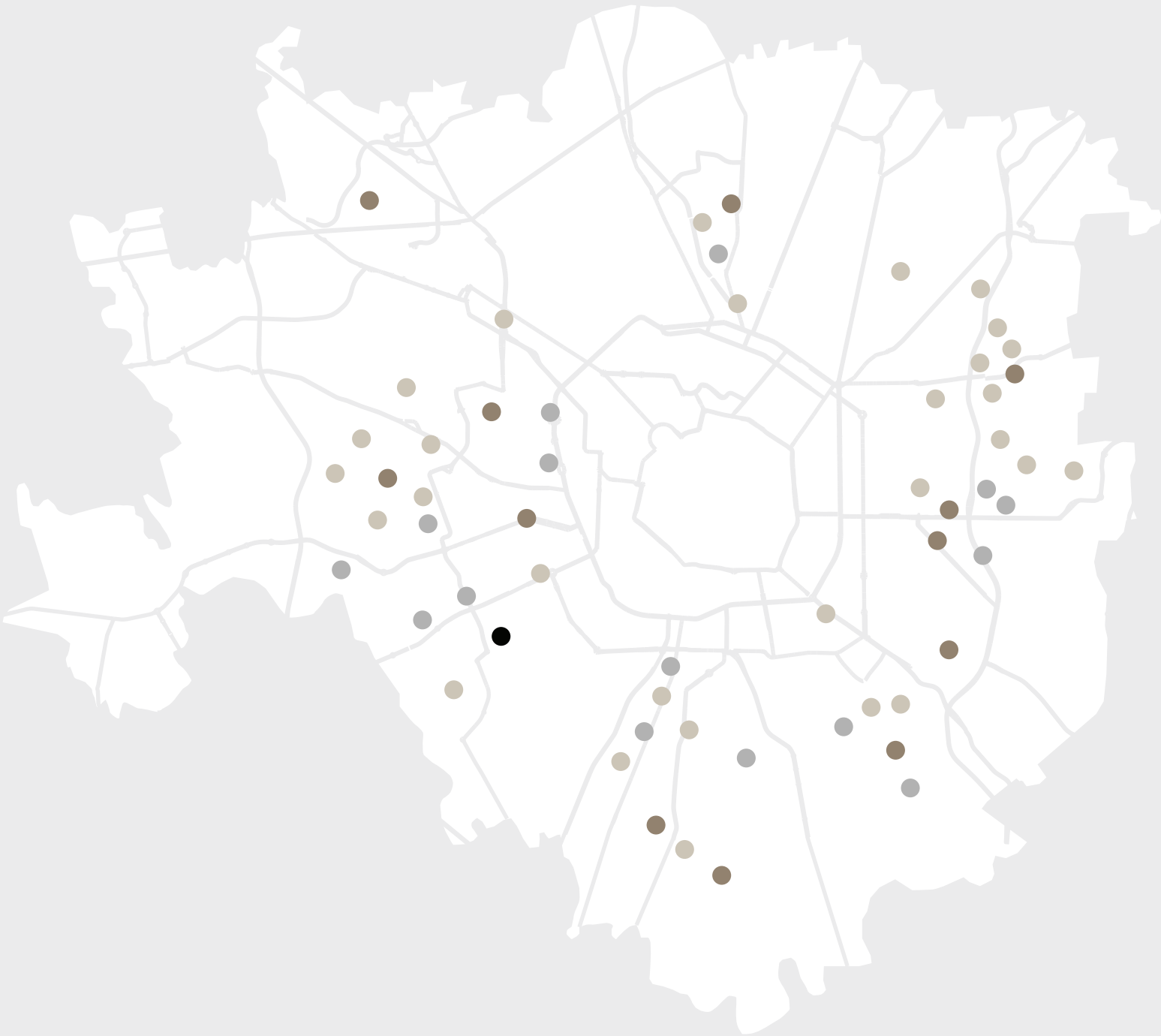
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cascina milanese

of course must be guaranteed. The analysis on the history of the Lombardia farmhouse is, therefore, becomes inevitable to get more complex than only staying on the materialistic level: for example, to only consider these artifacts from the point of view of the "building history" appears to one as a kind of reductionism, therefore it is necessary to conduct, not only the analysis of the events of this specific type of construction, but also the study of the vast history and evolution of "cultural and social dynamics" that has determined the alterations on the construction over the centuries. Today we must ask ourselves about the meaning of such presences in the context of the new urban landscape, one must critically evaluate what has been made in recent decades for the construction, the issues related to the "reconstruction of the city", on the threshold of the "post-industrial society", cannot be limited to the only with the issue of the "reuse of the building" since it would be a new form of generating underuse space within a time frame. The big problem of general interest for the whole of society, for the management of both public property and the private ones, on the other hand, consist of the "reuse of the urban building" by parts of cities and meanwhile contributing to the solutions of wider ranged problems. Today, during the pandemic crisis especially, what is visible that the health is the most substantial subject on our agenda, as it should be. However, also what lockdown made it quite visible was that, when human impact on the urban context decreased, ecological recovery became visible in terms of increase on the air quality, hygiene of streets and water sources. Namely, when thinking on subject of the re-use of existing structure on the urban context with a potent cultural identity, the secondary intention shapes around the idea of urban health, both for human and environment.

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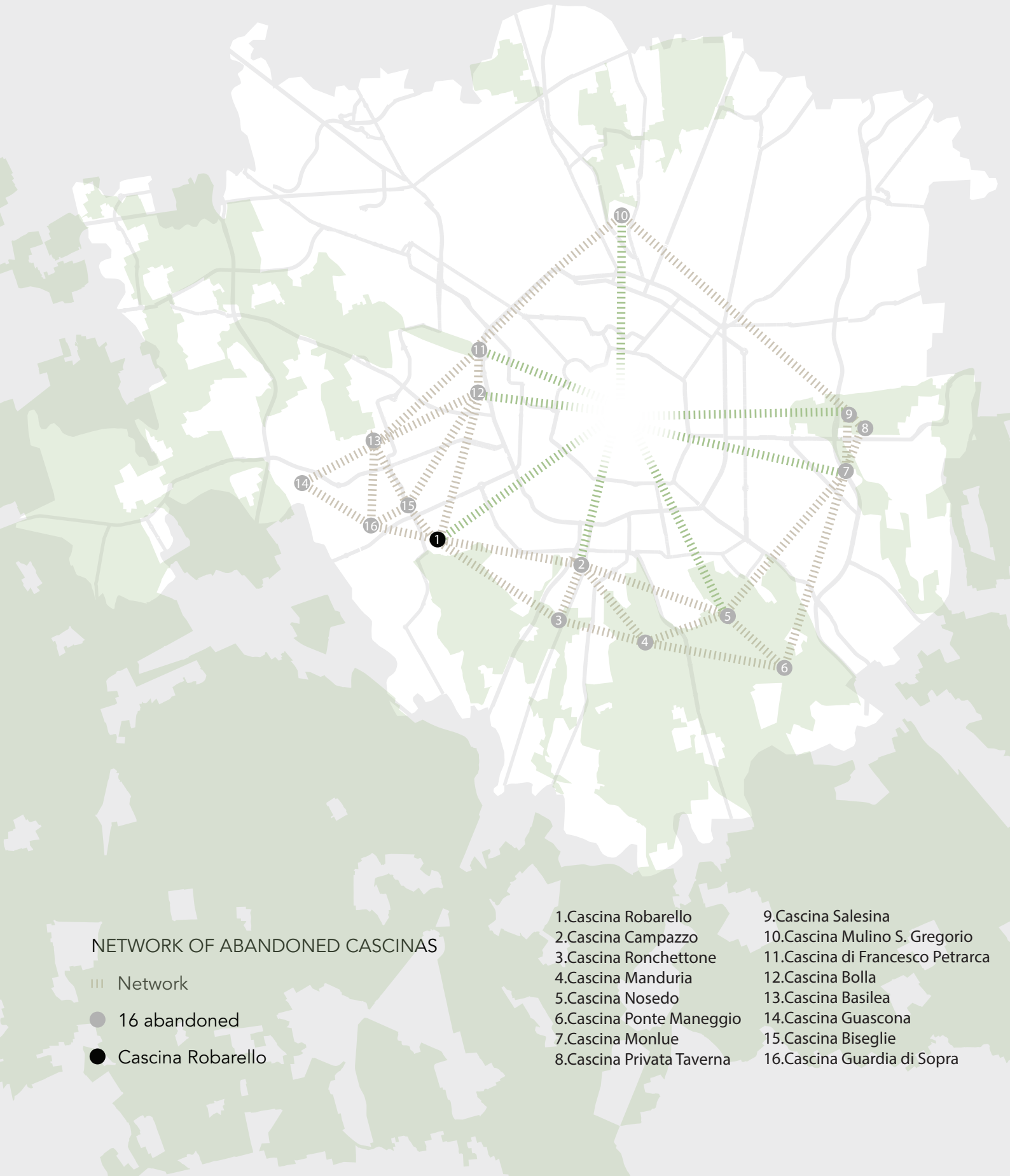
insight of the program



- 16 abandoned
- 12 agricultural use
- 28 other use
- Cascina Robarello

0.2

insight of the program



0.2

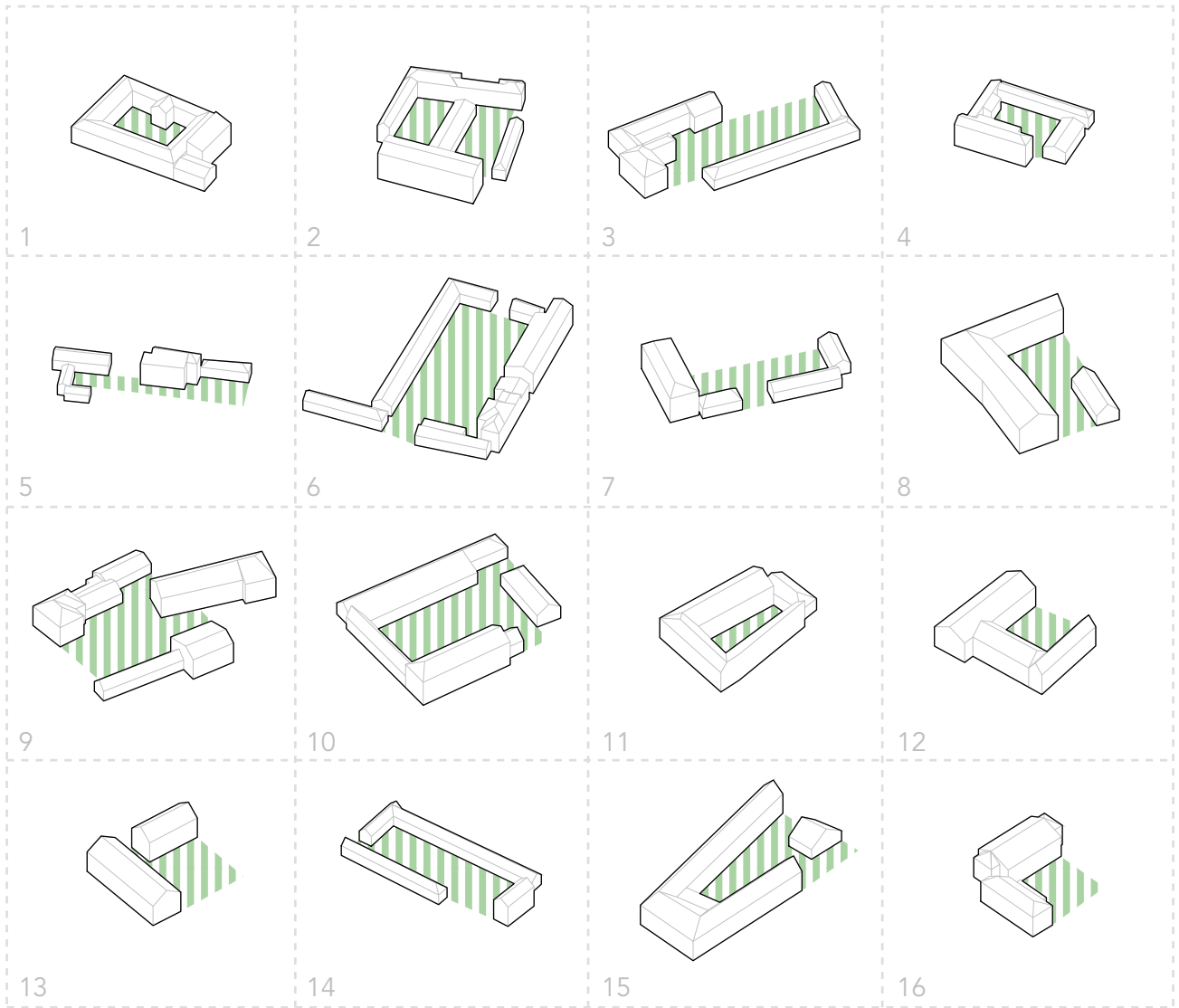
insight of the program

The two of the consecutively following figures are for better understanding for the relationship of cascinas in respect to the context of Milan. The first illustration is to indicate where the cascinas are located in the city and how they assimilated to urban fabric if they did so. The results show that there are 56 cascinas in Milan, in which only 12 of them preserve their agricultural activity. The common pattern among them with some exceptions would be that they are located on the peripheries of the built tissue of Milan. Then there is 28 cascinas which transformed their identity in order to survive in the contemporary situation. Many of them are still related to food however not in terms of production, but more in terms of facilitating restaurants and shops by representing the cascinas as an historical assets and taking advantage of the touristic potential. Finally, the map shows the abandoned cascinas, 16 identified, which is the point of interest of the research for the thesis. The most of the abandoned cascinas were left to decay with facilitating no function nor inhabitants, although they are part of the built tissue, an element composing the neighborhood, maybe the ones with the most historical value. The recognized pattern concerning the abandoned cascinas was that, they are located along a radial domain surrounding the core of the city, between the second and the third ring composing Milan, on the bordering zone between the remaining agricultural landscape and the growing city structure.

The following image concentrates only on the abandoned cascinas location to indicate clearly the above mentioned pattern concerning the position of the buildings with respect to city of Milan. The positioning of the buildings represent a strategical importance on the general concept related to redevelopment of abandoned cascinas and to propose a new typology which can preserve the historical and social value of the buildings and adapt them to the contemporary situation meanwhile addressing to possible solutions to contemporary problems. On the right-bottom there is the list of names of cascinas, and the left-bottom the legend explaining the actors of the diagram. The green surface extending outside the borders of the city is the agricultural landscape. The first network thought is the one between the cascinas among themselves to create a radial relationship around the core to enhance possibility to work as a system for the future development. The network between the cascinas represent not a physical connection route but more the relationship which between the abandoned structures. The second network to be seen would be the green spaces, agricultural landscape, and the city center, which the cascinas can play a role of the gates of such act. Again also in this sense the network does not represent a physical extension of the fields inside the city but the idea to connect the urban life with greener practices as production of vegetation, gardening, usage of natural resources. As a summary, the solution found for the redevelopment of abandoned cascinas, is to preserve the permacultural activities of the cascinas is to propose a prototype of self-sustainable social housing which can promote the healthier urban life and sense of community.

0.2.1

insight of the program



catalogue of cascinas



0.2.1

insight of the program

The diagram on the previous page is the representation of the 16 abandoned cascinas that were mentioned previously on the illustration of networks. The cascinas are listed following the order of;

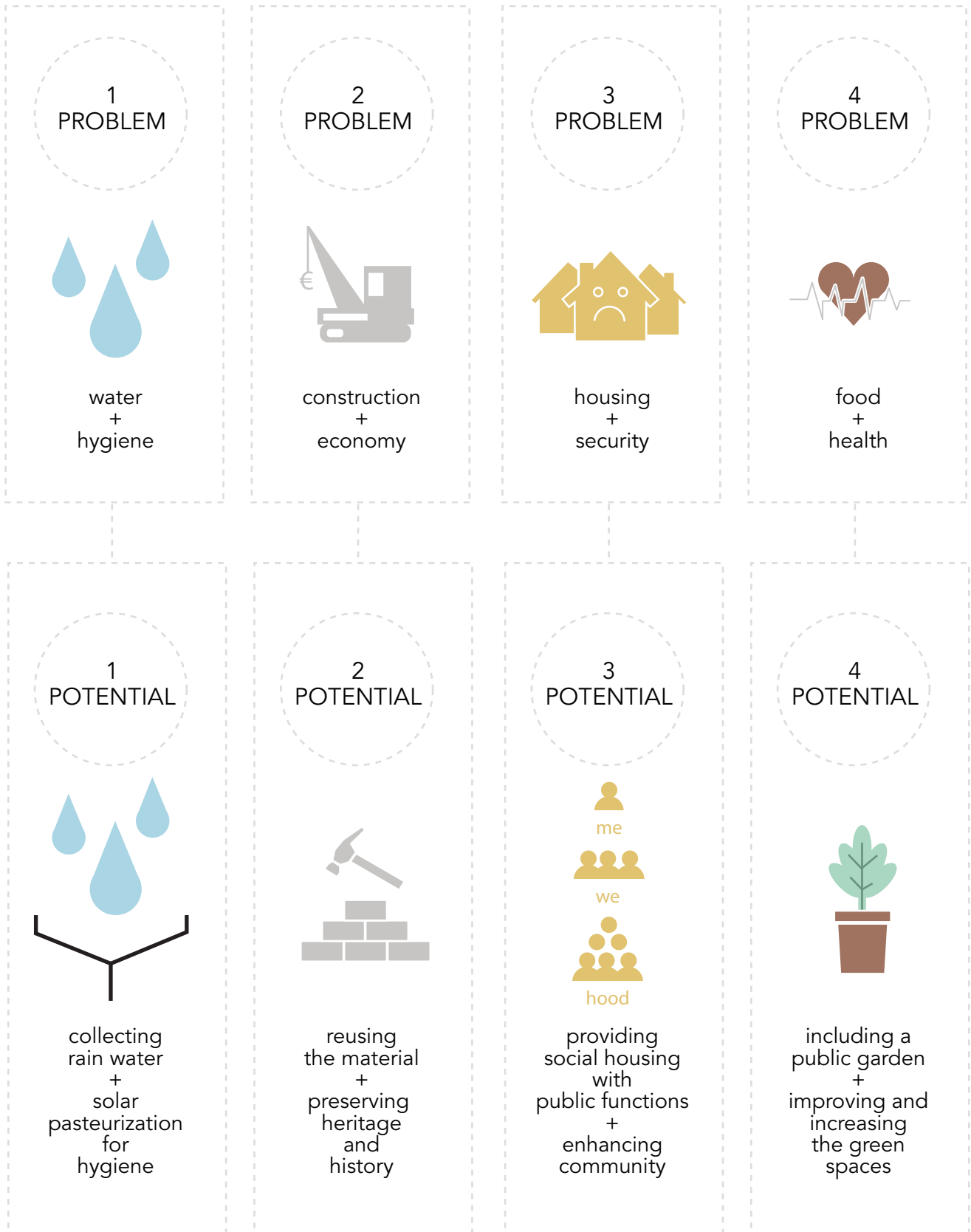
- 1.Cascina Robarello
- 2.Cascina Campazzo
- 3.Cascina Ronchettone
- 4.Cascina Manduria
- 5.Cascina Nosedo
- 6.Cascina Ponte Maneggio
- 7.Cascina Monlue
- 8.Cascina Privata Taverna
- 9.Cascina Salesina
- 10.Cascina Mulino S. Gregorio
- 11.Cascina di Francesco Petrarca
- 12.Cascina Bolla
- 13.Cascina Basilea
- 14.Cascina Guascona
- 15.Cascina Biseglie
- 16.Cascina Guardia di Sopra

Although the work carried out on the thesis concentrates mostly on one case study, Cascina Robarello, the design solutions adapted are to create a system for a prototype to be considered as a sample in the case of reuse of abandoned cascinas or other sorts of such buildings, which composed with similar physical composition; building around a courtyard. The catalogue of cascinas show the different typologies of buildings with chosen actors highlighted; the building, courtyard and surrounding. The diagram then, represent a simplification for the relationship of programme objectives' with the subjected cascinas.

As a result the building itself can be hosting the activities related with community, technology, culture and economy; whereas the courtyard, health, ecology, economy, environment, community and the surrounding space, which in most of the cases is open-green spaces, can be related with the objectives as community, ecology and environment. What becomes inevitable is that the courtyard, becomes the hearth of the system intended to work as an organism to achieve the goal of creating a new norm of living related to permacultural practices.

0.2.2

insight of the program



0.2.2

insight of the program

The concept chosen for the redevelopment of cascinas is the continuity of horticultural activities related with the location of abandoned cascinas with respect to the city and the agricultural landscape, the historical and the social identity of the buildings and the contemporary needs to be addressed.

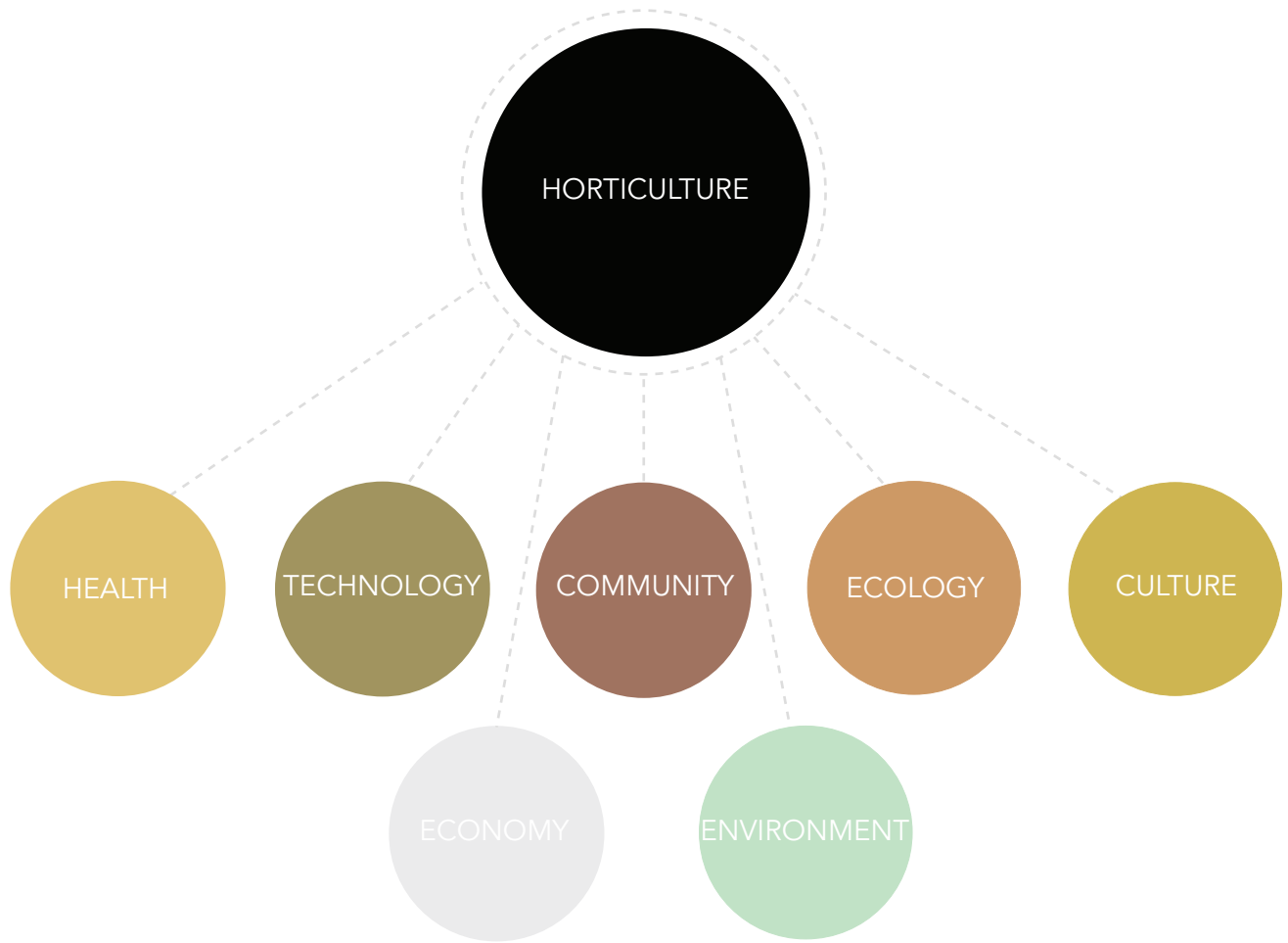
The strategy in order to come up with a general programme which can adapt to the each situation for different types of cascinas, or even to other cases concerning redevelopment of any abandoned buildings within the city, is to identify the problems which the cities in general suffer from. The four main categories of problems that are identified are; the issue of water and hygiene; construction fees and economical consequences; affordable housing and security and lastly the issue of accessibility to food and urban health.

Subsequently to the identification of problems, the issue becomes then to adapt design solutions for the programme which can create potentiality for a better living that the cascinas can host within their organism. Namely, the proposal for a solution for the issue of water and hygiene becomes the usage of natural resources for collecting rainwater and purifying the collected water by solar pasteurization for hygiene and other household usage. The construction fees and economical consequences can be answered by the reusage of existing elements from the historical buildings which has also a positive impact on nature by decreasing the air pollution and consuming energy and resources by obstructing the production of construction materials, plus creates opportunity to preserve heritage which has a social and cultural value. The proposal for affordable housing and security problems can be overcome by integrating social housing function to the building with shared spaces with inhabitants and also with public in general which can enhance the feeling of community and create stronger bonds between the inhabitants and the neighborhood. Lastly the issue of accessibility to food and urban health, is planned to be addressed by the agricultural activities being an inevitable part of the programme. The function can be hosted in the form of urban gardens and green spaces, afterwards can serve inhabitants starting from the cascina, the neighborhood and then the city, as a result having economical outcomes.

The design solutions above mentioned are very interconnected to each other in terms of different layers of social and economical aspects. To compose clear actions, the next step becomes to identify the classifications of the design objectives produced around the idea of permaculture which supports the main concept. Setting off from the solutions proposed, the sub-categories for the main concept of permaculture then becomes; health, technology, community, ecology, culture, economy, environment.

0.2.3

insight of the program



OBJECTIVES

ACTIONS

- | | |
|---------------------------------|----------------------------------|
| ●●● PRESERVING HERITAGE | ●● PROVIDING NEIGHBORHOOD CENTER |
| ●●● ENHANCING NATURE | ●●●● PROVIDING PUBLIC GARDEN |
| ●●●● ORGANIC VEGETATION | ●●●●● ENHANCING SUSTAINABILITY |
| ●●●● IMPROVING SOIL QUALITY | ●● PROVIDING EDUCATION CENTER |
| ●●●● IMPROVING AIR QUALITY | ●●●● URBAN MARKET |
| ●●●● PROVIDING COMMUNITY CENTER | ●● GATHERING SPACE |
| ●●●● RENOVATION OF EXISTING | ●●●● BIOARCHITECTURE |
| ●●●●● USING NATURAL RESOURCES | ●●●● HEALTH CLINIC |
| ●●●● IMPROVING GREEN SPACES | ●● PROVIDING HOUSING |

0.2.3

insight of the program

The diagram on the previous page is the representation of the foundation resource that the actions are deriving from. The objectives rise upon the main concept of horticulture which is an integrated design process that results in a sustainable, balanced and aesthetic environment. Horticulture, the branch of plant agriculture dealing with garden crops, generally fruits, vegetables, and ornamental plants. The word is derived from the Latin hortus, "garden," and colere, "to cultivate." As a general term, it covers all forms of garden management, but in ordinary use it refers to intensive commercial production. In terms of scale, horticulture falls between domestic gardening and field agriculture, though all forms of cultivation naturally have close links.

The idea of horticultural therapy started when poor people in the 1600s worked in gardens to pay for their hospitalization. Doctors noticed these patients recovered quicker and to a better health standard than the other patients did. After both World War I and II, servicemen worked in gardens to improve functioning of injured limbs and increase mental function, but also to learn new skills and to provide food.

By 1955, the first undergraduate degree in horticulture therapy was given by Michigan State University and in 1971, Kansas State University offered the first graduate program. Now horticulture therapy is used in hospitals, nursing homes, institutions, rehabilitation facilities, schools, prisons, camps, day care centers, group homes, halfway houses, homeless shelters, community centers

The idea of horticultural therapy can be applied to both therapeutic landscapes and healing gardens. The American Horticulture Therapy Association defines horticulture therapy as "a process utilizing plants and horticultural activities to improve social, educational, psychological and physical adjustment of persons thus improving their body, mind and spirit."

As a result; consequently, growing organic vegetation, renovating the existing structure of the abandoned building, using natural resources for energy needs, providing a space for public garden, enhancing sustainability as the manifesto of a way of new lifestyle, resulting gardening activities as an urban market, and considering solutions related to bioarchitecture becomes the most substantial actions which might take place regarding that the main goal is to create a space which would host practices of horticulture in order to provide a building complex, co-existing with parks and gardens.

However, it would be incorrect to not consider the remaining actions as significant, since they derive on the needs of the community and support the goal to reuse an existing structure for the better being of the society.

0.3

horticulture growing for healing

The therapeutic value of the natural environment -for physical and mental health -has been documented from ancient times through to the modern day¹. Pioneers of the occupational therapy profession recommended the use of activities such as gardening to promote wellbeing during the 1950's². A burgeoning interest in researching the value of nature- based therapy (or 'green care', 'eco-therapy') for social prescription purposes has been apparent in the last two decades in particular, with applications across a wide range of contexts.

It is scientifically proven that the association of a component of therapeutic greenery to a building is able to significantly increase the quality of life and maintain the psycho-physical well-being of those who live in it. It is no coincidence that in history there are many examples of gardens whose value goes beyond mere beauty, places to stroll, stop and relax, structured according to certain themes and moods as we would say today. A more conscious planning of these places it is able to create unique elements in the treatment of specific pathologies, in support of social unease, in the healing and in the evolution of the lifestyle of people with disabilities.

A high proportion of adults in Italy have a history of mood, anxiety or alcohol disorders. The lower than expected prevalence estimate of alcohol use disorder may be due to under-reporting or to low social harm from alcohol consumption. A total of 11% of respondents reported a lifetime history of any mood disorder, 10.3% any anxiety disorder and 1.3% any alcohol disorder. About 5% reported having an anxiety disorder in the past 12 months compared to 3.3% for any mood disorder and 0.2% for any alcohol disorder.

Overall, during the last 40 years without mental hospitals, Italy has seen a progressive consolidation of a community-based system of mental health care. The Italian experience would suggest that the number of psychiatric beds may not represent a key factor for public health indicators such as rates of suicides, involuntary admissions, and people placed in forensic facilities. The reasons for concerns highlighted, including a decreasing staffing level, a potential use of community residential facilities as long-stay residential services, and lack of community alternatives to acute inpatient admissions. This does not consider the fact that the Italian society has been profoundly changing and the needs of special populations, for example the elderly and adolescents, as well as the needs of new populations, such as economic migrants, asylum seekers and refugees, are not receiving enough consideration in current service planning and delivery.

1.AHTA 2012;Söderback, Söderström, & Schäländer, 2004;Clatworthy et al, 2013

2.Genter, Roberts, Richardson & Sheaff, 2015

0.3

horticulture growing for healing

In the book "The Sanctuary Garden" by C. Forrest McDowell and Tricia Clark – McDowell (1998), they say, "...the key to a (healing garden) is to honor and celebrate our broader human relationship with Nature and Spirit, not just plants". The proposed six design elements are a guideline for the design. They are a means to the end process of identifying the intention of the space. That is, a marriage between the garden keeper and the spirit of Nature.

Overall, the healing garden design should comfort the soul and renew the spirit – no matter if it consists of a bench next to a tree or an intricately designed landscape. Of most importance is the intention to honoring the design element and its relationship to the spirit of Nature.

1. A Special Entrance that invites and embraces the visitor into the garden
2. The integration of art to enhance the overall mood/spirit of the garden
3. The element of water for its psychological, spiritual and physical effects
4. A creative use of color and lighting to elicit emotion, comfort, and awe
5. The emphasis of natural features as grounding points – such as the use of rocks, wood, natural fences, screens, trellises, wind, sound, etc.
6. Garden features that attract wildlife and provide diverse habitat

DESIGN PRINCIPLES of THERAPEUTIC

1. Variety of Spaces. Spaces for both group and solitary occupancy. By providing a variety of spaces, the patient is given choices, thus providing an increased sense of control - leading to lower stress levels.

2. A Prevalence of Green Material- Hardscaping is minimized and plant materials dominate the garden. The goal would be to minimize hardscaping to only one-third of the space being occupied. It is through the softening of the landscape the patient can feel an improvement in her/his overall sense of wellness.

3. Encourage Exercise- Gardens that encourage walking as a form of exercise have been correlated with lower levels of depression.

4. Provide Positive Distractions- Natural distractions such as plants, flowers and water features decrease stress levels. Other activities such as horticultural therapy programs that help residents/patients to work with plants can also provide positive distractions in the garden setting.

5. Minimize Intrusions- Negative factors such as urban noise, smoke and artificial lighting are minimized in the garden.

0.3

horticulture growing for healing

Interacting with nature is essential to maintaining a sense of well-being. Through gardening and spending time around plants, individuals can reap a wide range of psychological benefits. Here are just a few mental health benefits of being around indoor plants and gardening:

Improves Mood

Human beings generally feel happier and more optimistic in surroundings with plenty of plants and nature. Consider a survey conducted at four San Francisco Bay Area hospitals. In the survey, 79 percent of patients said they felt more relaxed and calm, 19 percent felt more positive, and 25 percent felt refreshed and stronger after spending time in a garden.

Flowers also evoke positive emotions. For example, in a 2005 study, women who received flowers reported more positive moods three days later. Elderly patients who received flowers also reported brighter moods and improved episodic memory.

While you may only need to place a plant on the windowsill at home to help create a more soothing environment, you can increase happy feelings even more through gardening. Gardening reminds us of our connection to nature, and helps us focus on the bigger picture, which can alleviate symptoms of depression.

Relieves Stress and Anxiety

Consider a study published in the "Journal of Physiological Anthropology", one group of participants worked on computer tasks, while another group transplanted indoor plants. After completing their assignments, the groups switched. The researchers found the subjects felt more comfortable and relaxed after the transplanting task, rather than the computer task. The study concluded individuals could reduce psychological and psychological stress by interacting with plants.

Study, published in the "journal of Health Psychology" compared the effects of outdoor gardening to indoor reading. The study reveals both gardening and reading decrease cortisol levels. However, stress levels decrease significantly more with gardening. Likewise, the study participants enjoyed a fully restored positive mood after gardening.

Prolongs Attention Span

Gardening and being around plants strengthens attention span, which can aid concentration and learning. For example, a study published in the "American Journal of Public Health" examines the impact of green or natural settings on children with attention deficit hyperactivity disorder (ADHD). Researchers found activities carried out in green settings significantly reduce symptoms of ADHD compared to other settings. Many children can benefit from spending time in nature. According to the CDC, an estimated 6.1 million children in the U.S. have received an ADHD diagnosis.

0.4

cascina Robarello

of the neighborhood was created to save this farmhouse.

Referring to the cascina it can be said that, in general is typical of ancient rural buildings, that is, characterized from the absence of foundations and crawl spaces, from the presence of load - bearing masonry elements of bricks, with poor mortars with a prevalence of clay, for the front parts of the XIX-XX ° century, starting from which take-up elements in wood, structures in poutrelles and brick vaults for the floors of the barns, in any case maintaining the wooden structures of the roofs in channel tiles.



Aerial view of Cascina Robarello

0.4

cascina Robarello

Abandonment is widely represented, in the common sense as to give up to the control or influence of another person or agent, but also in a good part of specific literature, as a phenomenon that affects urban settlements, historic centers, but above all rural sites, both mountain and places in the plains, depopulated by emigration connected to the industrialization of the agricultural sector, where the workforce of the "labor" has been completely replaced by highly performing means of work and machineries. The same phenomenon also affects the peripheral areas of large cities where the expansion has incorporated pre-existing production activities making them incompatible with the new urban paradigms. As a result of the changes in the agricultural practices, the inevitable fate of the farmhouses become being left abandoned.

As has happened many times, the farmhouses in urban contexts had no function and therefore, once abandoned, many came down with the bulldozers and the advance of the modern. Fortunately, some have survived, adapted to host different activities by municipality, private agents or neighborhood efforts. However, a significant number is still left to decay.

This is a worrying sign that demonstrates how, in Italy, abandonment is not the result of accidental and episodic situations, but the result of genetically very different processes but which have as a common point of fall, the multiplication of situations of urban decay. - phenomenon to date unstoppable and irreversible.

It is sufficient to make a cycling excursion in the countryside to find disused rural buildings, unused sheds or other accessory buildings, in a clear state of neglect. It is not just a few ruins with a melancholy beauty, but a substantial building heritage, difficult to manage despite the recent tax incentives for reuse, but which could be an extraordinary opportunity for quality living and a manifesto against waste where there is no doubt that the result of such effort would pay back in the social and economical aspects to the society.

The Municipality of Milan has published a map identifying 160 private properties in a state of neglect and decay present in the urban area. The buildings are located in all areas of the city, from the suburbs to the most central areas, and belong to different types: productive, residential, tertiary, free area, rural, trade.

This is the first step of a wider analysis of the territory, which aims to regenerate the existing urban fabric, in a context such as that of Milan where there are many building situations that are in a state of neglect, often significantly influencing the livability of some areas.

0.4

cascina Robarello

Cascina Robarello is no exception to above mentioned decaying structures with lost its identity subsequently after losing its function as a cascina. Nowadays threatens the public safety due to time impact on the building physical integrity, as a result collapse on the roof, the security issues due to lack of inspection on the property. The building's current situation is that it is completely abandoned and caused several issues in the neighborhood due to being a space which hosts illegal occupation which reflected on the news.

The cascina is located in left side of the Naviglio Grande, on the border of the Municipality of Milan, located in the middle of via Molinetto di Lorenteggio, constituting a part of the eastern border of the Municipality of Corsico. Bordering on North with a small residential complex of discontinued use, to the east with via Molinetto di Lorenteggio, to the south with the Naviglio towpath and to the west with green areas. So, it can be said that the remains of the building is asimilated to the tissue of the Milan city which growth towards south-west. Municipal property appurtenances and the industrial complex "Perlite-Dicalite" still today active. All the pre-existing canalizations deriving from both the fountain were dismantled "Corio" both from the Naviglio (ditch Olonella), of which only the seats remain. In the Municipality of Milan uncultivated green areas and a derelict building owned by the State Railways.

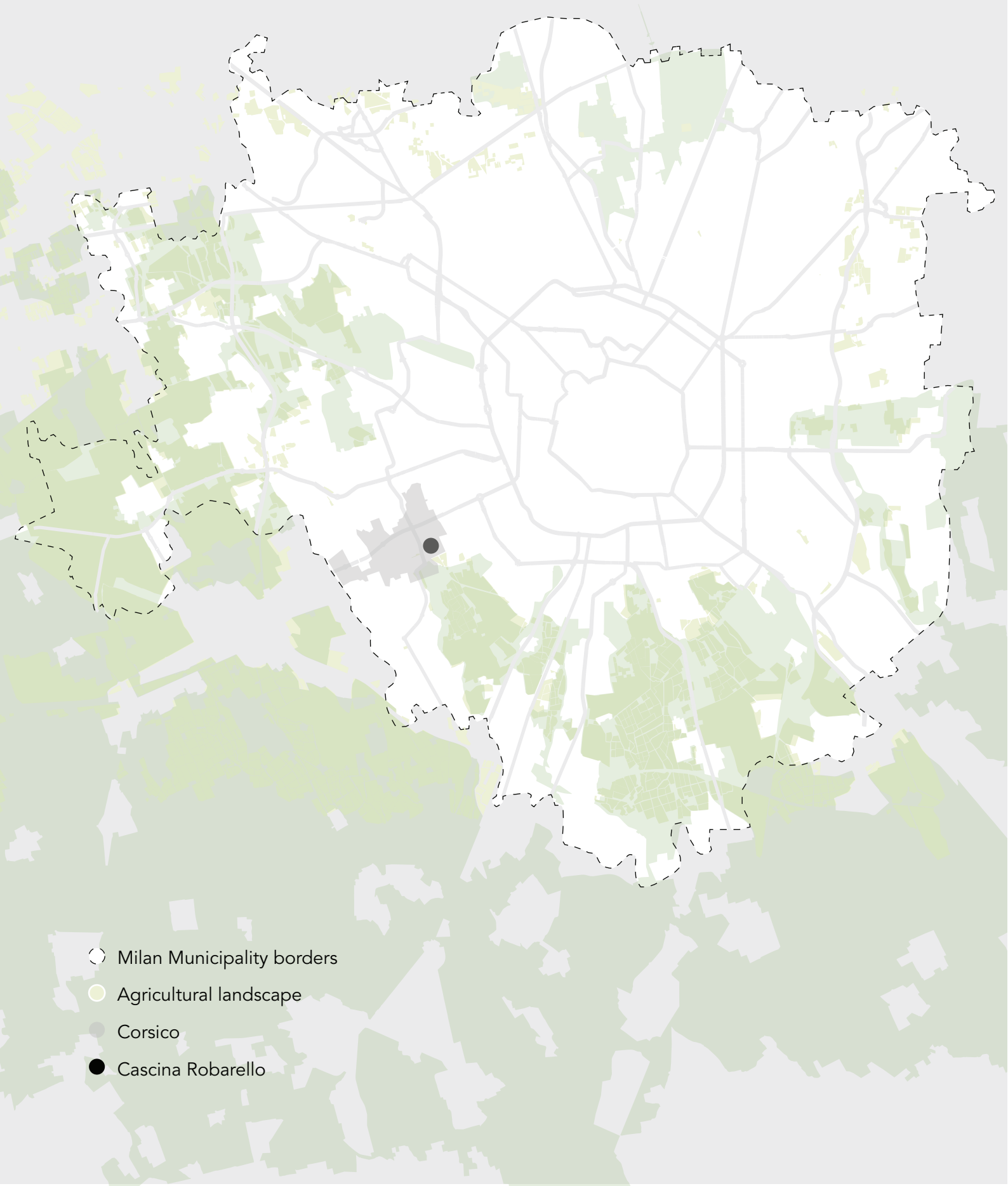
Mentioning the accessibility options, the complex is accessible from the north via the railway and pedestrian underpass of Milan-Mortara, from the south by the towpath of the Naviglio Grande, constituting the only access by the driveway as via Molinetto di Lorenteggio.

The historical origins of the complex can be traced back for the East and South portions, up to the 15th century, for the Western part, to the 16th century, meanwhile the remaining North side is a result of later execution, with particularly built taken as reference the front Southern part of the building. Additionally, all parts intended for stables, deposits and barns, are result of later execution attributable to late 19th - early 20th century, contemporary or subsequent to the sale of the Cascina from its original owners, Borromeo family to the Colombo family, who owned the property until to the last decades of the past century.

Inside, in a room on the first floor, there are some valuable seventeenth-century frescoes. The Superintendency has found that this farmhouse has artistic value and has recommended the Municipality of Corsico to save it. However, it seems that there is already a plan to pass a road where there is now the courtyard of the farmhouse. In the meantime a part of the roof has collapsed and it is feared that, with the time passes, the structure may be declared unfit for use. A committee by locals

0.5

analysis on the context



○ Milan Municipality borders

○ Agricultural landscape

● Corsico

● Cascina Robarello

analysis on the context

Cascina Robarello is located in the Corsico district, towards the South-West of Milan. In order to have an insight of the area, the analysis start from the historical development of the site.

Corsico was born founded in 13th century in the territory that would have been crossed by the Naviglio Grande canal, whose construction began around 1259 by Martino della Torre . The Torriani family was defeated by the Visconti in the battle of Desio and the Visconti became the masters of Milan for over two centuries. Corsico, which was part of the Duchy of Milan, had Tenuta Torriani (later Visconti) and the villa of the leader Niccolò Piccinino (1380 - 1444) on its territory, warrior in the service of Filippino Maria Visconti. In 1525 the Pia Vimercati Opera was founded in Corsico for the distribution of bread to poor families. On November 2, 1584, the archbishop San Carlo Borromeo, returning from a pastoral visit on Lake Maggiore, got off the Barchett of Boffalora, stopped in Guardia di Sotto: here a shrine was erected in memory. Today the newsstand and the adjacent church are in complete abandonment and degradation.

In 1706 Corsico was the headquarters of the army of Eugene of Savoy, under the orders of Joseph I of Habsburg , Emperor of the Holy Roman Empire, who defeated the last Spanish governor, Charles Henry of Lorraine. Milan and the surrounding area, with the 771 inhabitants of Corsico, therefore passed from Spanish to Austrian rule, interrupted by the French parenthesis. In the Napoleonic era (1811 - 16) the municipalities of Assago, Bazzana, Bazzanella, Buccinasco, Gudo Gambaredo, Loirano, Romano Banco, Rovido, Trezzano and Terzago were aggregated to Corsico; all recovered autonomy with the establishment of the Lombard-Veneto Kingdom in 1815.

From 1827 to 1853 Corsico was the seat of district II of the province of Milan. In 1841 the municipality of Lorenteggio was added to Corsico - then joined in 1923 to the city of Milan.

At the unification of Italy in 1861, the economy of Corsico is still mainly agricultural and zootecnical, with the birth of the first dairy farms.

At the beginning of the twentieth century the first industries of paper and glass ceramic began to be opened . During the First World War several young Corsicans were called to army. In the 1921 elections Corsico voted for communists while the fascists obtained 20% of the vote. The Fascists also used violence in Corsico and spread terror and while in the 1924 elections in Italy they won the majority with 66.3% of the votes, in Corsico they were defeated with less than 40% of the votes. The thirties witnessed a strong immigration to Corsico from Veneto and Bergamasco , so much so that at the dawn of the Second World War the population reached 8,000 inhabitants.

0.5

analysis on the context

The war had terrible effects on the population which suffered, in addition to the misery, the bombings. After the 1943 armistice in Corsico, the liberation movement was already organized in the 113th Garibaldi brigade, in the "Matteotti" and "Giustizia e Libertà" formations. The popular uprising of April 25, 1945 put an end to the German occupation and Corsico was celebrating when on April 29 the allied forces entered the Milanese.

The administration that took office at the end of the war derived directly from the representatives of the National Liberation Committee. Corsico mobilized for reconstruction. In the 1946 elections, the Communists and Socialists won with 71.5% of the vote. On June 2, 1946 Corsico expressed acceptance and said "yes" to the Republic with 73.8% of the votes. In the 1950s, the migration of southern cities to the northern part of the country began.

The increase in population brought today a need of intense urbanization and necessity for housing and services. Between the second half of the sixties and the early seventies, facilitated by the inauguration in 1961 of the Nuova Vigevanese state road, the Lavagna and Giorgella districts were built. The new neighborhoods took their name from the farmhouses present in that area since 1700.

The new built quarters were built with the construction typology of prefabrication and from the point of view of the demographic dimension, due to urgency of the need for housing. Today Corsico is a medium-sized city of considerable importance for industry and commerce, connected to Milan by a dense road and railway network.

The Corsico station was activated in 2009 to replace the old stop built in 1870 is located on the Milan-Mortara line and is served by the S9 line of the Milan suburban railway service performed by Trenord as part of the service contract stipulated with the Region. Lombardy. Between 1884 and 1966 the city was served by a stop of the Milan-Corsico-Abbiategrasso tramway, of which it formed the provisional terminus in the early years of operation. The urban and suburban public transport service is carried out by means of automobile connections operated by ATM and STAV, as well as by the river navigation service operated by Navigli Lombardia.

Since the last decades of the twentieth century Corsico has also become known nationally as it is considered together with the nearby Buccinasco, Cesano Boscone, Trezzano sul Naviglio and Gaggiano, one of the territories of northern Italy with the highest infiltration of organized crime. So in general the area lacks safety.

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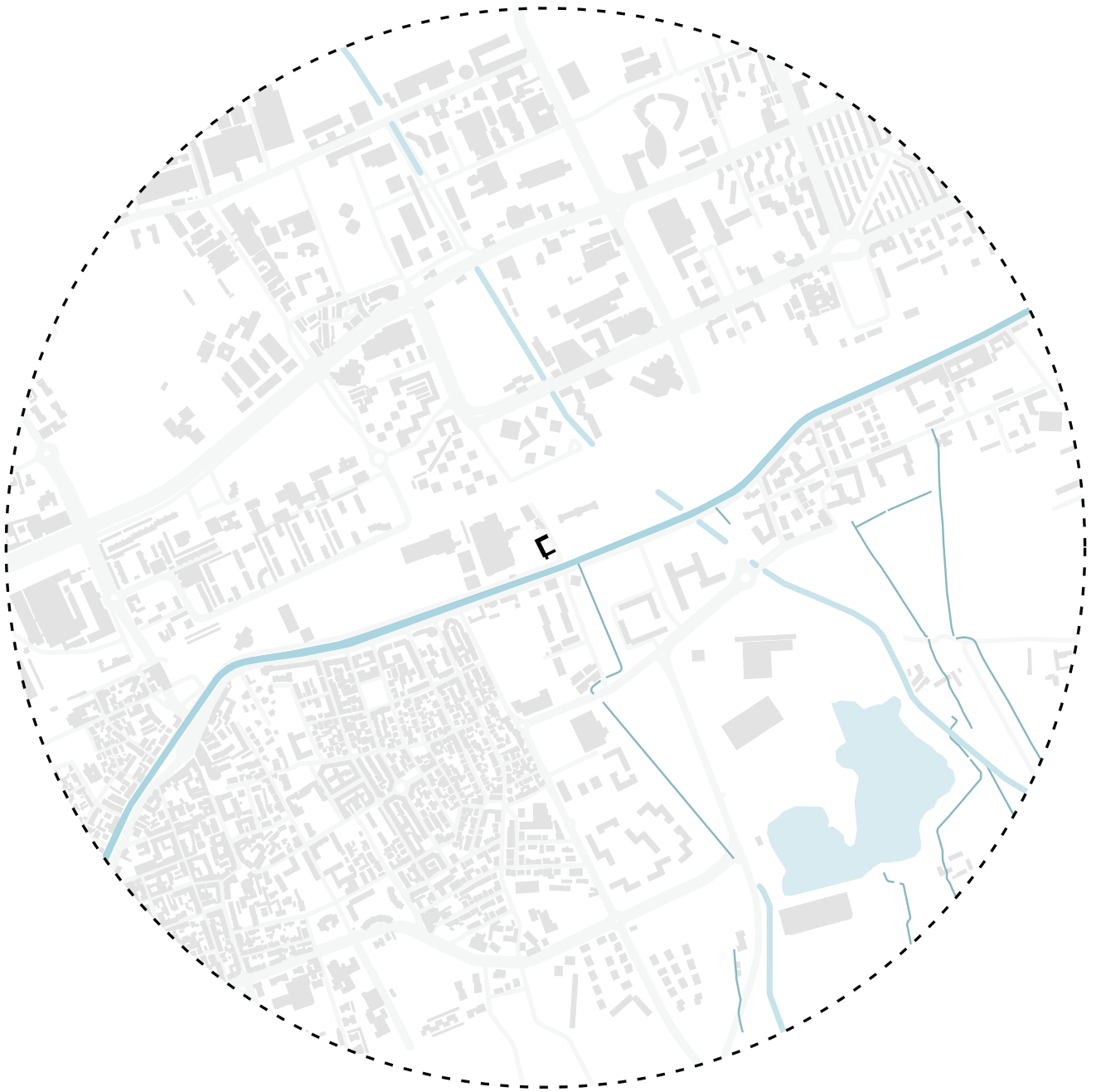
analysis on the context



- residential
- storage
- offices
- industrial
- shops
- commercial
- warehouses
- security
- education
- public services
- cultural
- religion

0.5

analysis on the context



- navigli
- river
- lake
- field irrigation

0.5

analysis on the context



- road
- bus route
- railway
- tram

0.5

analysis on the context



- active green
- public park
- private green
- agricultural landscape
- parco san cristoforo

0.5

analysis on the context

As it was mentioned earlier the increase in population brought with itself a need of intense urbanization and necessity for urgent housing and services. Between the second half of the sixties and the early seventies, facilitated by the inauguration in 1961 of the Nuova Vigevanese state road, the Lavagna and Giorgella districts were built.

In the first figure related to analysis on the context of Corsico, Analysis on the function, the identity of the built forms and activities take place within them are mapped. As it can be seen the dominant function is residential followed by industrial buildings. There are the functions to fulfill also the social needs of the society as, shops, commercial activities, education, cultural and religion. The organization of volumes differ visibly from north to south. The northern part has islands of built forms separated from each other with a more definite grid, whereas the southern part is shaped in a more organic manner, composed by smaller scale built forms, and functions are more integrated among the blocks of buildings. The reason of such distinct division might be the physical separation of the areas by the Navigli canal. When the residential buildings are to be identified from the plan configuration and the size, there are three typologies to be recognized in the area; island units which resemble the suburban typologies where the units are not working with a system of other buildings, instead located on a green space alone; the second typology to be seen is again island of apartments, where the complex consist on several houses but again does no relate to another built form and the third type is more what is seen in the city center of Milan, the houses composing a block by connecting to each other. The first two types are mostly seen on the northern side of Navigli where the third type is seen on the southern side.

Moving to the illustration on the following page, analysis on services, the spaces which are open to public use is highlighted. Although the area was subjected to an urgent urbanization, the public services were considered on the organization of the district such as the greeneries and open spaces, and some services adapted to needs of the following decades. Two types can be seen on the legend; open air spaces and activities host by built forms. Generally the built forms are positioned around an open space of their own so that they have both quality of the interior and exterior. In summary, what is seen is that the green spaces are adequate in terms of surface, however due to lack of control on the areas, the quality of the public greenery is low in terms of care taking of the plants and infrastructure and the security is also an issue to be managed. There are spaces meant for sports activities both on the north and south of Navigli, educational zones are the schools for elementary and secondary degree of education level of children. The cultural spaces are merely can be mentioned. The religious areas are distributed to each zone as the educational buildings so each neighborhood can have access to such services.

0.5

analysis on the context

The following illustration is the analysis of the zoning of population. The six levels of density are calculated by number of inhabitants divided by the area in kilometer square. The result shows that the south side of the Navigli canal and an area across is densely populated. Recalling the above mentioned typology classification of the residential buildings and overlapping it with the population result it is seen that the organic blocks hosts more inhabitants than the island blocks. The second degree of densification zones are the surrounding areas of the first degree zone. Then the areas of the industrial and commercial activities on the northern part of Navigli canal hosts less inhabitants. The area which the cascina is located and Northern side of it has the least amount of inhabitants. Overlapping the services analysis and the population zoning, the reason can be seen as that these areas are reserved for the public services. However, instead of combining activities to create a more vital urban life for the district, the current situation tends to an issue of functional zoning where it results as the underusage of the spaces which has weak connection to inhabited areas.

Finally the last illustration is representing the mobility of the Corsico district. There are three vessels of movement from the city center to outskirts of Milan which divide the area horizontally into four zones. Consequentially from south to north can be listed; first one as already mentioned, is Navigli Canal, second the railway of Milano-Mortara and third Vigevanese state road. The impacts of the division of the district is visible from the each analysis from the difference of typologies, the zoning of functions and activities, the heterogeneity of the population distribution and so on. The connectivity between the four zones is hardly managed, especially the division caused by the Navigli canal, due to inadequate number of bridges to cross to the opposite side. As well as the Milano Mortara railway, where the crossing is provided by underground or upperground passages which can constitute a feeling of unsafety.

0.6

methodology

Planning any intervention on an existing building needs a deep knowledge of its composition, its structure and function and, on the other hand, any connection between what already existing and what is new. One of the main features of the methodology presented hereby, applicable both to general and specific cases, is the integration among different disciplines that contribute to define an intervention suited to the specificity of the building. Such methodological approach consists of different stages of analysis, ranging from the study of the place to the identification of the peculiar aspects of the area and the building. Materials, construction techniques and sustainability are also under review. All information and data collected bring to a complete knowledge of the building.

The present research aims to raise attention on the rural historical heritage represented by the Milanese farmhouses by exploring the possible types of reuse, consolidation and extension, in order to preserve their existence and ensure their adaptation to contemporary needs. The theme of conservation and reuse is widely present in literature, especially regarding a construction typology as common as that of the farmhouse. In recent decades, most of the farmhouses have not been able to adapt to the new needs of the owners, ending up being condemned to abandonment and consequent structural decay. This premise is necessary in order to understand the origins of the Cascina, an essential condition when intervening to preserve and reuse a building. On the basis of the needs identified, the shortcomings raised by the users and the management of the Cascina and the potential offered by the site, a master plan and the design of a new building are presented. Finally, the research presents a solution for a building extension, in continuity with the results of the previously performed analysis of the existing building architecture, its history, the context, and the building typology of cascina in general. Based on the requirements, the deficiencies reported by visitors and management and the potentials offered by the building site, a masterplan proposal and a new building project are illustrated. The proposed solution explores the possibility to enhance the site qualities and complete the existing building thus to increase its value for the local community, with extreme respect to the original building complex.

The thesis responds to a need of renovation of the decaying historical value of Milan, Cascina Robarello, and consists in offering new housing which can be a prototype for similar cases. The program involves - new housing and collaborative services for residents, designed on the model of co-living; - new services to the neighborhood offering the creation of new aggregation, sports areas, and economic opportunities; - renovation of the gardens and courts, to make them more accessible to the community and the provision of educational and cultivation activities. Although the residential zone is offering common spaces, the public activities mainly concentrate in and around the cascina to recall the buildings's lost identity of being the core of the social and economical actions which

0.6 methodology

takes place around the complex.

Today, the term development, as defined in the first parts of the thesis, doesn't coincide with the continual expansion of urban scenarios, as it used to be until the beginning of the seventies, but it is aimed to provide a cue of reflection on how to build new models that, beyond the preservation of the existing, aim for a sustainable progress and also projects, both to the urban and architectural level, with a high degree of flexibility and aptitude to change. From this point of view the research shows how the reduction of energy consumption by effectuating agricultural activities within the complex and the taking in consideration of the thermal upgrade of the proposed houses.

This close attention allowed us to start from the available resources, optimized for our purpose, and to return, at the end, to the same environment by including the project in a closed and continuous cycle in which resources are always re-used. The most important achievement of this path is summed up in the concept of sustainable design which is not simply a "new way to operate" -imposed by ordinary problems which could also overlap the world of stylistic trends-, but the awareness that only through the attention to every design aspect, to the resources and materials used, to their life cycle or of the building, we can fully satisfy the main goal of architectural design: the achievement of quality. To this regard three key words, borrowed from the agricultural world, but easily moved into the architectural context: - cultivate: as the term refers to work the soil in order to make it fruitful, so the aim of the project is to improve the quality of life, focusing first of all on what is available; - Collect: "put together" the work done previously, in order to convert it into an effective result; - Reuse: the aim of the design is also to allow the insertion of resources into other life cycles. we can fully satisfy the main goal of architectural design: the achievement of quality.

As a result of the above mentioned considerations and the historical identity of the reused building, Cascina Robarello, the agricultural potential of the site had been re-worked and implemented into an up to date situation by integrating agricultural activities into inhabitants daily lives. The aim being the regeneration of the decaying cascina by reflecting the building's historical role within the social and functional means and decreasing of the energy consumption which is caused by the excessive food production by giving the potential to growing vegetables and fruits, another aspect of this approach had been also treated. In Italy %23 of the population suffer from stress related mental disorders and the curative effect of the gardening activities are proven to be efficient for such cases. Consequently the proposed addition of residential buildings to the cascina is categorized into two typologies; permanent stay for long periods of time and temporary stay for rehabilitating people with stress disorders by giving possibility to be part of gardening activities.

0.7

innovation and assesment

To give a simple definition cascina is a farmhouse, composed by a set of buildings to form a self-sufficient settlement, which is a typical agricultural structure of the Lombardia, partly Piemonte and Emilia-Romagna. These are the entire provinces of: Milan, Monza, Lodi, Cremona, Mantua, Vercelli and Novara . They are also present in the plain part of the Province of Bergamo, Brescia, Varese Turin; in the Brianza area of the Province of Como and Lecco.

The farmhouses host a variety of functions in the building nucleus besides agricultural elements as, stables , barns, warehouses, space for production of cheese and butter, house of the farmers, generally gathered around a large courtyard. The layout of the buildings on four sides derives from an ancient tradition, which has been kept alive up to the present day for the safety, rational organization of spaces intended for various production activities and ease of social control.

As a result of the changes in the agricultural practices, the inevitable fate of the farmhouses become being left abandoned, many came down with the bulldozers and the advance of the modern. Fortunately, some have survived, adapted to host different activities by municipality, private agents or neighborhood efforts. However, a significant number is still left to decay.

Cascina Robarello is located in left side of the Naviglio Grande, on the border of the Municipality of Milan, located in the middle of via Molinetto di Lorenteggio, constituting a part of the eastern border of the Municipality of Corsico. Bordering on North with a small residential complex of discontinued use, to the east with via Molinetto di Lorenteggio, to the south with the Naviglio towpath and to the west with green areas. So, it can be said that the remains of the building is assimilated to the tissue of the Milan city which growth towards south-west.

The historical origins of the complex can be traced back for the East and South portions, up to the 15th century, for the Western part, to the 16th century, meanwhile the remaining North side is a result of later execution, with particularly built taken as reference the front Southern part of the building.

The work carried out for this thesis was considering the re-use of the rural architectural elements relating to the farmhouses, cascinas, in the Milan area and adaptation of spaces into a proposal for a new norm of living related to horticultural practices.

Firstly, a description is given for what the cascina is and has represented in the past, explaining its evolution, the actors involved in the cascina as a company and practices that took place in

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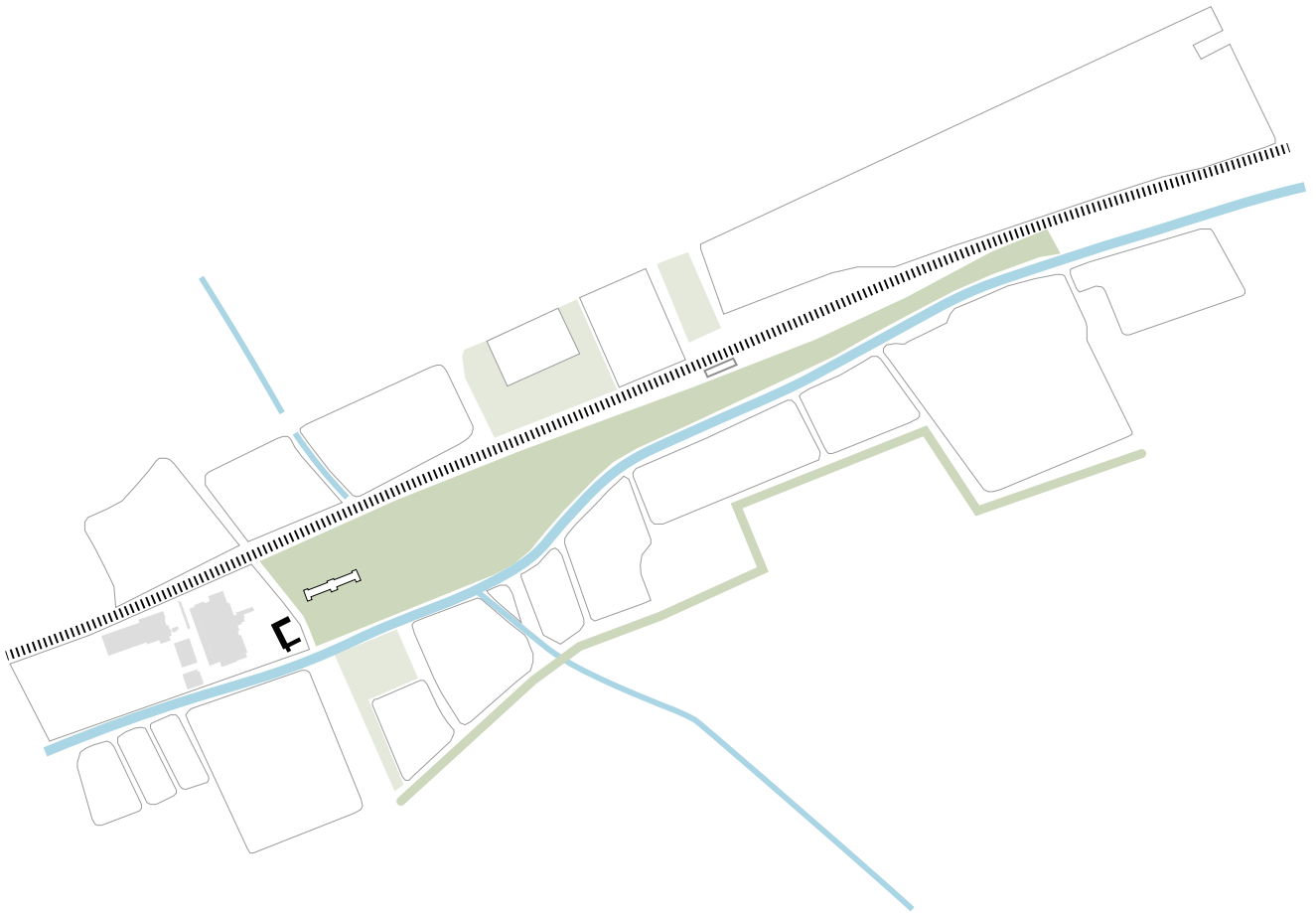
innovation and assessment

terms of the idea of co-living and production. It was necessary to make a cognitive picture of the current reality to evaluate the way we live and its impacts on the environment to find a possible solution to create a positive impact while regenerating the cascinas as architectural assets but also reviving the social solidarity to enhance a more responsible way of urban life. The project activity therefore had as its object the redevelopment of a farmhouse in the territory of the Municipality of Milan, specifically the Cascina Robarello. The idea was to create modular units of housing which can be adapted to different numbers of inhabitants around the centralised common spaces as vegetable and fruit gardens and a common kitchen that can be open to the public to provide better connections with the neighborhood and to develop a sense of community. The choices that were made were aiming to reach a self-supporting approach, so as to have independence from several points of view: the construction, management, the food and the energy to address the most crucial problems found regarding human impact on nature, especially concerning Milan.

After the analysis made on the ecological condition for Milan, what has been realized that the most effectual problem is the energy consumption for heating of the houses which endangers the quality of the air, followed by respectively agricultural activities and the traffic. Namely, the project topic of the thesis is focused on how to re-use abandoned cascinas, which there is a considerable number of in the Northern Italy, for creating an environmentally responsible prototype of co-living spaces can be specifically used for special inhabitants for temporary stay, and permanent stay, where the housing typologies are integrated strongly with greenescapes of different qualities.

0.7

innovation and assesment



-  urban block
-  cascina robarello
-  industrial surrounding
-  abandoned station
-  train station
-  parco san cristoforo
-  open space
-  agricultural landscape
-  railway
-  navigli

0.7

innovation and assesment

Apart from the historical value of the Cascina Robarello and the building's identity in terms of the practices which takes place, another consideration while analyzing the current situation is the special location of the building for the city of Milan. The scheme simplifies the strenghts and boundaries of the site, shows clearly that the cascina is located in an "island formed by the railway and the Navigli River. The green band reaching to the cascina from the Eastern side is the Parco San Cristoforo which reaches almost to the city center. On the other side of the cascina, the industrial zone begins. From the research what is clearly visible that the connection between the North and South parts of the neighborhood is very poor due to the strong boundaries cutting the map from East to West. Another issue is the vague ending of the San Cristoforo Park.

On the other hand the strenghts of the particular context can be listed as; the closeness to the San Cristoforo Park which leads through the city center. The cascina in this sense can play a role as the definite ending of the park with the public role that the building can play. Meanwhile the proposed landscape and filter the industrial area and the railway and merge the San Cristoforo park with parco ex Area Pozzi with a green path on the waterfront. Secondly, the agricultural landscape is located on the Southern side of the Navigli River, which can enrich the concept of the agricultural practices which the cascina complex will host.

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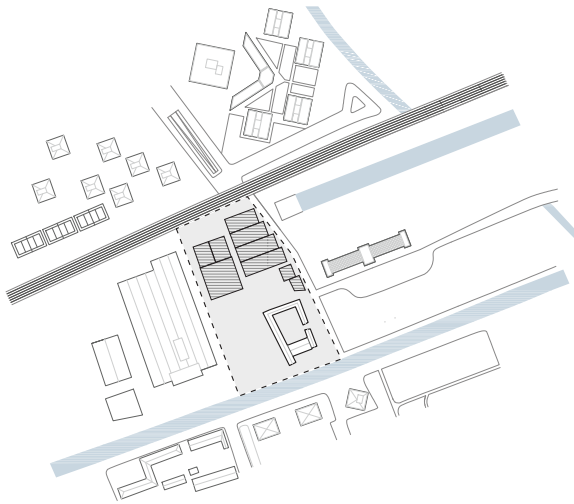
in-habitat the project proposal

project description

The project supports the importance of reconsidering farmhouses and productive landscapes as a fundamental resource to reactivate a virtuous relationship between countryside and city starting from a substantial enhancement of the identity characteristics of the places. The irreversibility of land consumption forces an urgent and real turnaround and a need of reconsideration of the potential of outskirts of the city. There are two approaches to the project highlighted in the thesis: the enhancement of the existing and the inclusion of new project figures. The system of existing farmhouse becomes the possible schedule of a landscape redesign project, in which the existing buildings, bearers of a tradition, become public spaces rethought with new contemporary architectural interventions making it possible to decline the spaces in functional terms; farmhouses can become devices for the promotion of rural reality, places of relationship, spaces and services, spaces for cultural, educational and recreational functions. Usually a state of crisis represents an opportune moment for a turning point: the historical concern that Western society is experiencing is ideal for overcoming previous stereotypes, reusing previous models, revisiting them in a different articulation responding to the serious problems in progress. With these considered the Navigli front of the plot is determined to be the public zone of the complex where the cascina is hosting the functions to enhance integration of the plot with the surrounding.

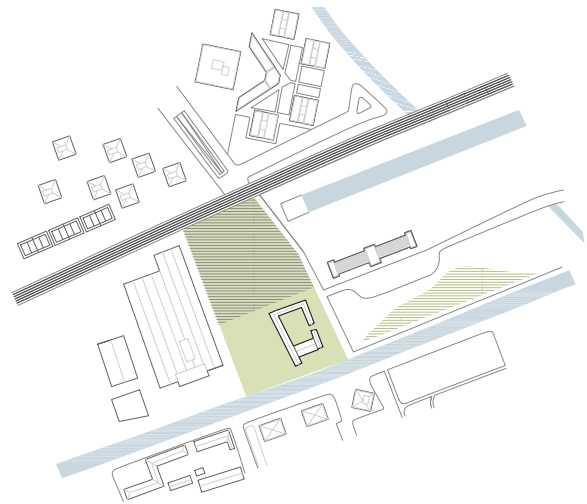


design strategy



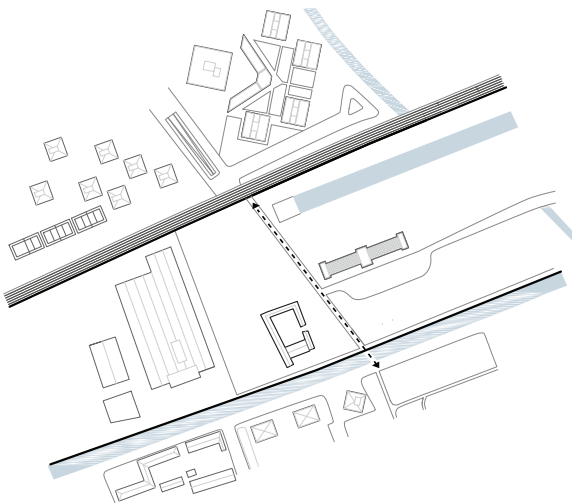
DEFINING THE BOUNDARIES

- the boundaries are set by the railway elevated road on the North, the canal Naviglio Grande on the South creating the "island-like" area
- the West boundary is the factory building and on the East the diagonal road is used to define the end of the plot
- in order to give the maximum value to the public space we decided to remove the current industrial buildings and reorganize the plot



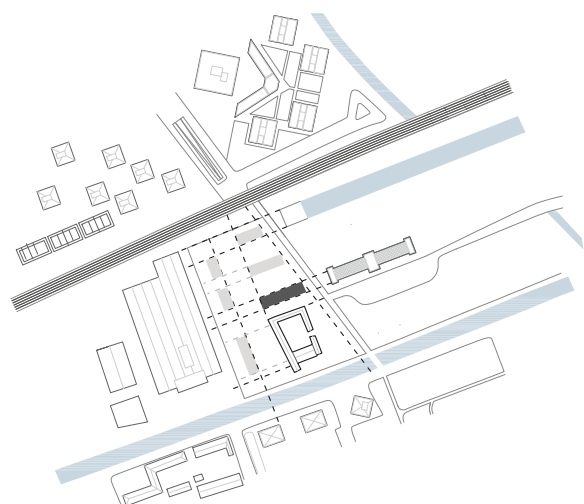
STRATEGY

- the strategy for the plot is to place the urban (residential) part of the project at the far North, where in the South part of the site there would have higher attention to the landscape
- the agricultural belt in the San Cristoforo park is transformed into the public park but it is not disappearing, rather it is changing its location to the plot around the cascina



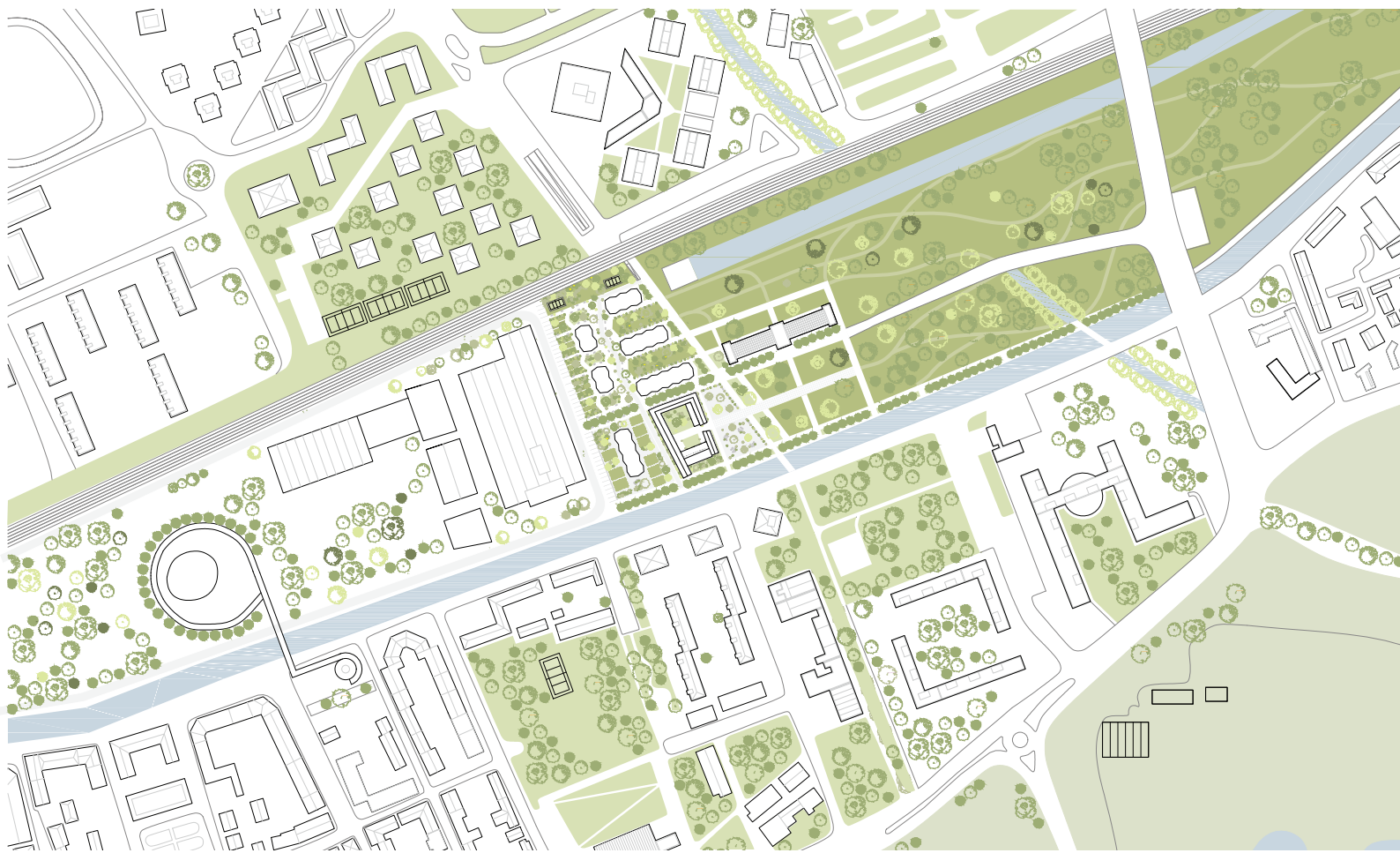
CONNECTION

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is
- the plot has an interesting almost 'island-like' position in the middle of two existing boundaries being the Naviglio river at the bottom and the railways on top
 - in order to break the disjunction we introduced a diagonal path which starts at the underground passage under the railways and finishes with the bridge over the Naviglio canal



SETTING THE VOLUMES

- the initial shape was taken from the surrounding buildings, precisely the depth of a building by Aldo Rossi, Stazione di San Cristoforo
- the volume is repeated following again the same logic creating a cluster



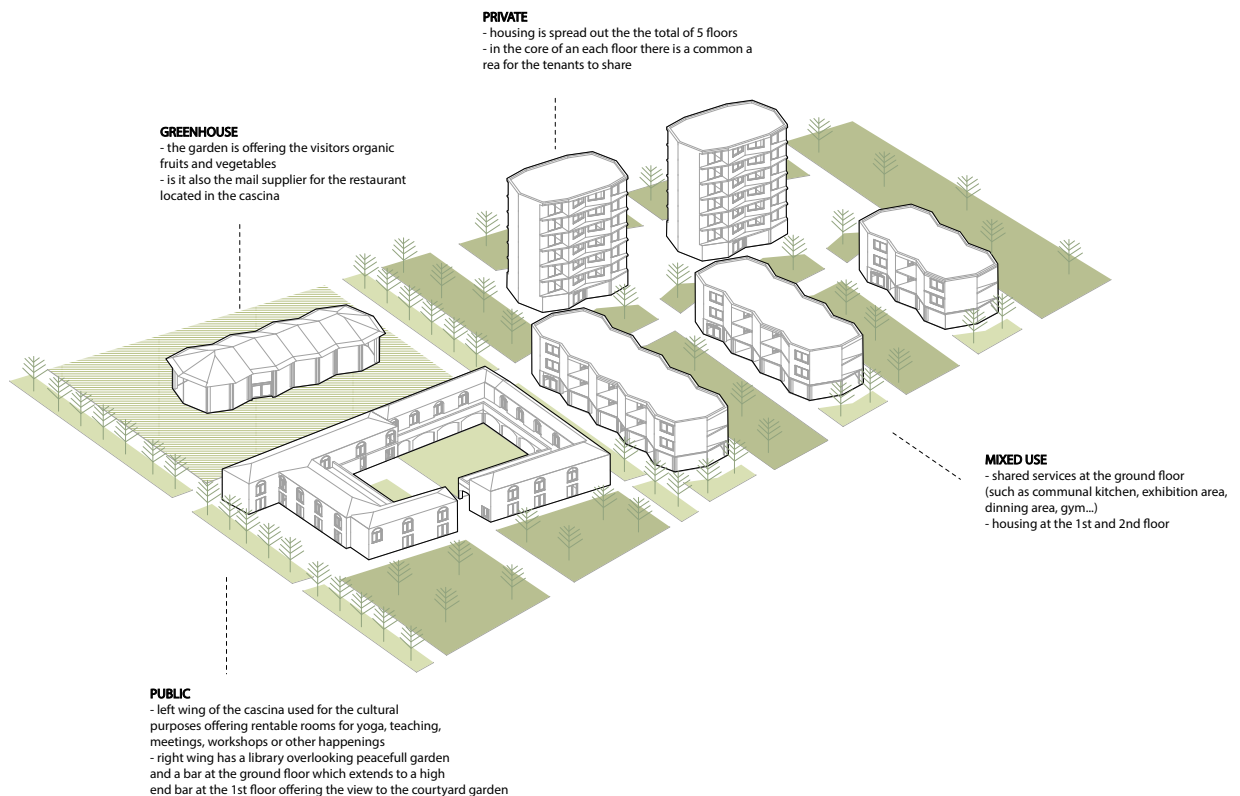
masterplan 1|2.000

0.8

in-habitat the project proposal

functional diagram

However, since this is a countryside bordering the city, the project envisages the resolution of the existing conflict between the two realities, offering a new way to experience the countryside according to urban needs. The undisputed protagonists of the reconnection of relations between city and countryside are the farmhouses rethought within a network that provides for their recovery and their requalification and re-functionalization according to the needs of the city and farms. The project then focused on the redevelopment of the Nibai farmhouse which houses both a productive reality and associations that deal with social reintegration, presenting itself as an emblem of the beneficial effects that the countryside can have for those who live in the city. Namely, the program of the cascina involves new services to the neighborhood offering the creation of new aggregation, and economic opportunities; - renovation of the gardens and courts, to make them more accessible to the community and the provision of educational and cultivation activities. Whereas the additional residential buildings are made to propose a new model of living in association with agricultural activities and common open and built spaces both for temporary and permanent housing options.





ground floor 1|2.000

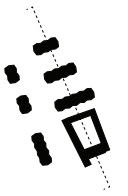
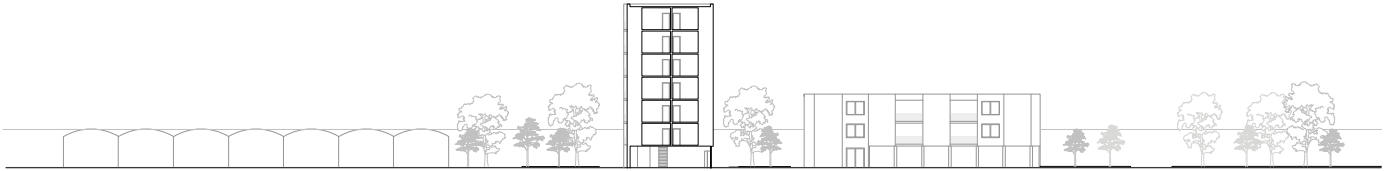
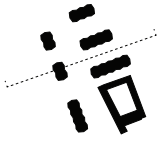


first floor 1|2.000

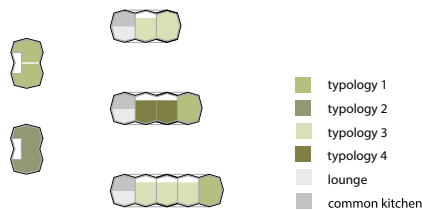
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in-habitat the project proposal

sections
typologies



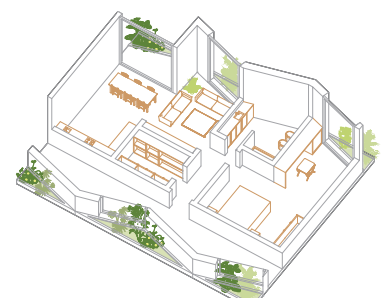
HOUSING TYPOLOGIES



The proposed housing typologies of the additional residential complex, consist on two categories; temporary and permanent.

Typology 1 and 2 are for permanent staying and are located on the towers situated on Western side of the plot. The two typologies are consisting on the same layout but the Typology 2 is made by merging of 2 Typology 1. Whereas Typology 3 and 4 is for temporary staying for people with special conditions related to stress disorder. They include private spaces for inhabitants but additionally kitchen and lounge on each floor for common use.

Each housing has a balcony to provide a stronger inside-outside relationship especially with the green elements on the facades where they are triangle plant pots following the shape of the walls.

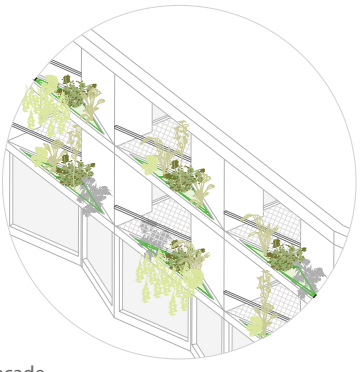


TYPOLOGY 1
permanent stay
2 people
50 m²

TYPOLOGY 2
permanent stay
4 people
100 m²

TYPOLOGY 3
temporary stay
1 person
45 m²

TYPOLOGY 4
temporary stay
2 people
80 m²



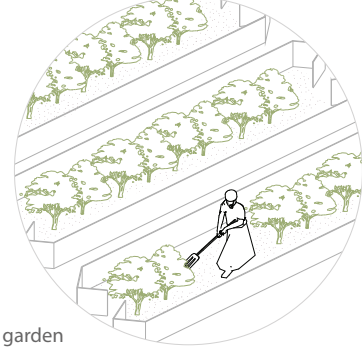
1. green facade



3. active park



2. agricultural area



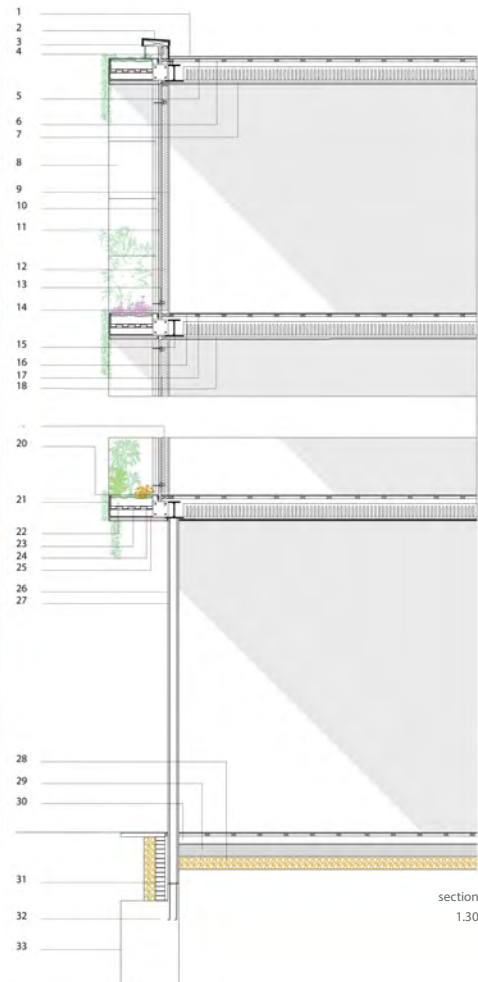
4. private garden



DETAIL



elevation
1.50



total thickness (mm):
366.4
total R value:
3.277
total U value:
0.306
decrement factor:
0.12
time lag:
10.92

- 01 roof finish
- 02 flashing
- 03 steel flange supp.
- 04 welded flange supp.
- 05 timber deck
- 06 drainage material
- 07 plaster board
- 08 stone panel
- 09 gypsum board
- 10 air space
- 11 extruded polystyrene
- 12 insulation
- 13 stone anchor
- 14 plaster finish
- 15 I-beam
- 16 floor finish
- 17 timber decking
- 18 steel plate
- 19 L-profile
- 20 steel anchor
- 21 aluminium facade frame
- 22 soil
- 23 waterproof membrane
- 24 linear sheet
- 25 drainage material
- 26 stone covering
- 27 I-column
- 28 granular drainage
- 29 rigid insulation
- 30 concrete slab
- 31 brick layer
- 32 steel anchor
- 33 concrete footing

The term 'biophilia' translates to 'the love of living things' in ancient Greek (philia = the love of / inclination towards). Although the term seems relatively new and is gradually trending in the fields of architecture and interior design. The main principle behind biophilia is rather simple: connecting humans with nature to improve well-being by integrating nature in their designs. The design of the facades integrates 3 m² green space to each module and adds up to 45 m² green area to each floor of residential building.

Buildings consume about 40% of the primary energy in the world. This means that buildings are responsible for the majority of greenhouse gas emissions. The use of high thermal inertia envelopes could be a solution to reduce energy consumption of the building. The thermal inertia is characterized by time lag and decrement factor.





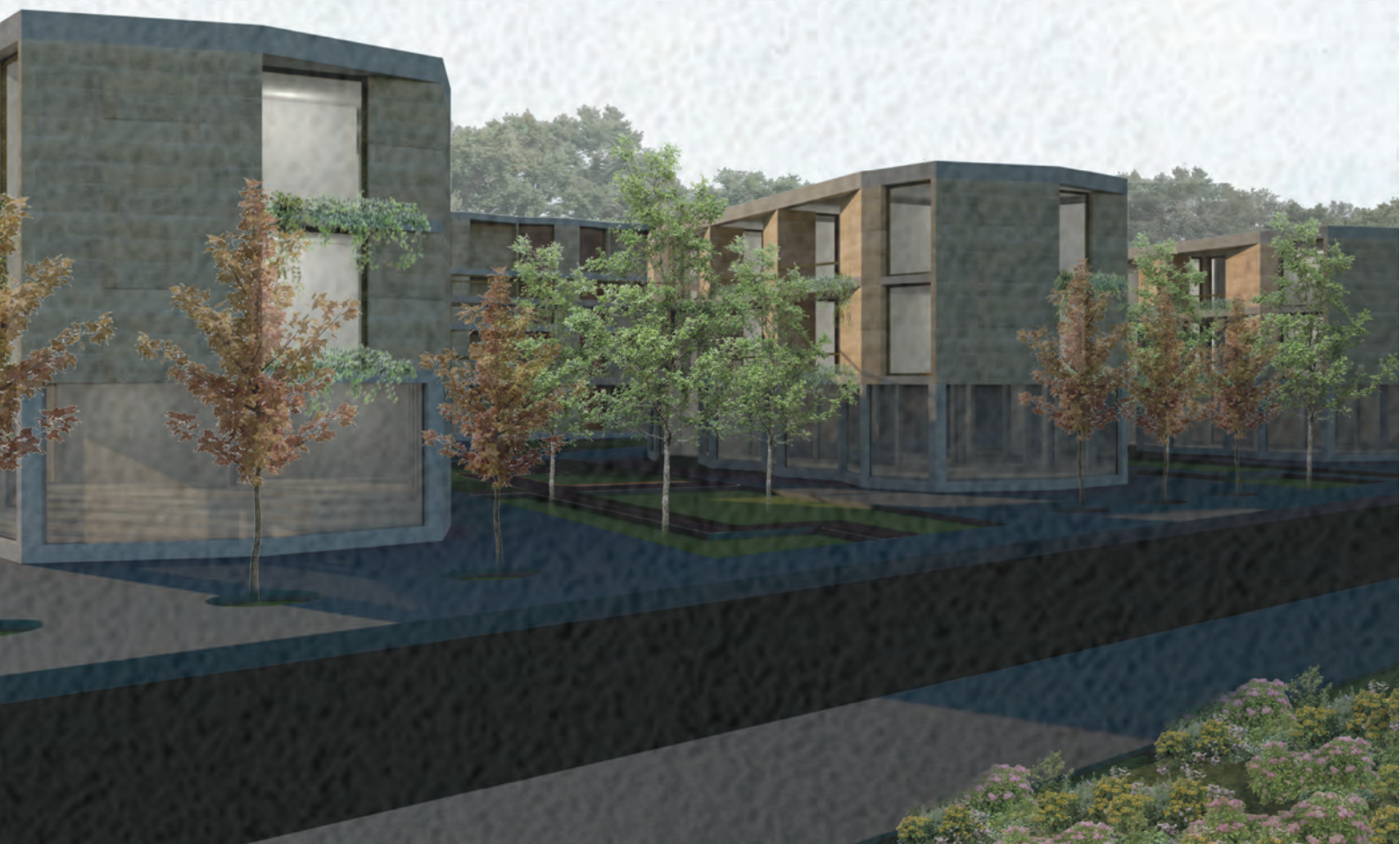


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in-habitat the project proposal conclusion

Today, the term development, as defined in the first parts of the thesis, doesn't coincide with the continual expansion of urban scenarios, as it used to be until the beginning of the seventies, but it is aimed to provide a cue of reflection on how to build new models that, beyond the preservation of the existing, aim for a sustainable progress and also projects, both to the urban and architectural level, with a high degree of flexibility and aptitude to change. From this point of view the research shows how the reduction of energy consumption by effectuating agricultural activities within the complex and the taking in consideration of the thermal upgrade of the proposed houses.

The historical identity of the reused building, Cascina Robarello, and the agricultural potential of the site had been re-worked and implemented into an up to date situation by integrating agricultural activities into inhabitants daily lives. The aim being the regeneration of the decaying cascina by reflecting the building's historical role within the social and functional means and decreasing of the energy consumption which is caused by the excessive food production by giving the potential to growing vegetables and fruits, another aspect of this approach had been also treated. In Italy %23 of the population suffer from stress related mental disorders and the curative effect of the gardening activities are proven to be efficient for such cases. Consequently the proposed addition of residential buildings to the cascina is categorized into two typologies; permanent stay for long periods of time and temporary stay for rehabilitating people with stress disorders by giving possibility to be part of gardening activities.



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