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Adaptive reuse of the industrial heritage

Best practices definition by case studies analysis

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1. ABSTRACT

This graduation thesis talks about requalification in the industrial field, offering a path that the designer can follow towards the planning and design of a project that considers all the requests, needs, obligations and potentialities that are present in the area of intervention.
In Italy, as well as worldwide in the last decades, the decommissioning of industrial buildings has become a relevant problem, with inevitable social, urban and economic consequences. Meantime, the cultural debate has created a growing attention about the question and the key role that the brownfields can perform in order to satisfy new necessities. Buildings once used to be the image of prosperity and technological innovation shortly became the symbol of neighborhood decay and blight.
This is related to the fact that the economies that before needed those structures stopped to be productive and so they become no more useful to the social environment.
The relics of industry involve obsolete buildings, sites, bounds and structures that influence with their characteristics the cities and the single neighborhoods in which are located giving them a character unique.
They provide tangible and intangible links to our past and have great potential to play significant roles in the futures of our cities, towns and rural environment.
The main problem is to make the right use of those buildings, structures and spaces: do we tear them down and build afresh or do we invest in their revitalization? All seems to offer opportunity for reuse. Done well, such adaptive reuse can contribute to the building of social and cultural capital, environmental sustainability and urban regeneration.
The case studies that accompany the first part of this research highlight a range of projects scattered all over Italy; while in the second part will be presented appropriate intervention strategies and guidelines formulated through the previous analysis. These projects take advantage of industrial spaces and places to create new and exciting facilities for the present and the future.
This study examined the key issues of industrial heritage development, which consists of adaptive reuse, in Italy. The intent was to determine as far as possible what the characteristics of successful renovation projects are in terms of factors such as building and refurbishment type, architectural and adaptable features, marketing approach and financing.

2. INTRODUCTION

Older buildings are important aesthetic, cultural and economic resources but in many jurisdictions hundreds of historic buildings have been demolished because developers and bankers argued that the cost of adapting them for new uses is too high. Still, a growing number of reputable developers are completing exciting projects featuring innovative building renovation. However, when particular development projects are presented to decision makers, generally only the developer/lender's cost analyses are presented and, therefore, they are unable to make truly informed judgments. This study examines the business of industrial heritage development, which consists of building renovation or adaptive reuse, in order to determine the characteristics of success.

In the first part of the thesis will be presented, in theoretical form the main features of brownfields in terms of potential for a functional conversion, and in terms of impacts and urban regeneration.

Next will be introduced the theme of adaptive reuse, with a focus on the process of decision-making, on the theme of adaptability and main adaptable features, and on the assessment methodologies of the adaptability level of a building.

In the second part, we will describe the case studies collected under different points of view such as: territorial area, previous uses and new intended uses, promoters and lenders, gross leaseable area, level of accessibility, urban regeneration process, time and construction costs, intervention typologies and adaptability of spaces. In the analysis phase it will be assessed the level of adaptability of each case study through FLEX 2.0 and the following Flex score will be used together with other parameters to give a final score of adaptive reuse to each case study. The parameters used to produce the adaptive reuse score will be weighed earlier using AHP technique, referring to the data held. This will make it possible to compare case studies with each other on the same scale and understand what are the adaptable characteristics that determine an effective requalification process.

Finally will be proposed the guidelines based on best and worst characteristics identified during the analysis phase, both in technical terms relating to the requalification process, both in terms of management and tools necessary for an efficient managing of adaptive reuse process.

2.1 THE METHODOLOGY

The thesis is divided into two main parts, an introductory and theoretical part, and a section of research and development. In turn, the two sections are divided into two different parts, as follow:

INTRODUCTORY – THEORETICAL

1. The first part is constituted by the introduction that explain the context from which has its origins the topic of the thesis and that unfold the methodology that was used to develop the research and the final guidelines.

2. The second part refers to the state of art in which are introduced in a theoretical point of view the subjects of "industrial heritage" with its architectural features and its potential for recovery and the "adaptive reuse" with the decision-making process that leads to its use.

RESEARCH - DEVELOPMENT

3. The third part is the more consistent one in terms of research and material, so it can be considered as an operative part. In this section are taken into account the most significant cases, differentiated and mapped by areas, and are defined the selection criteria used in collecting the cases themselves.

4. The last section can be considered the most important part as it analyzes the data collected in the first phase through groupings, comparisons, assessment methodologies and considerations, and then draw guidelines to address the management/design of recovery projects of dismissed industrial buildings.

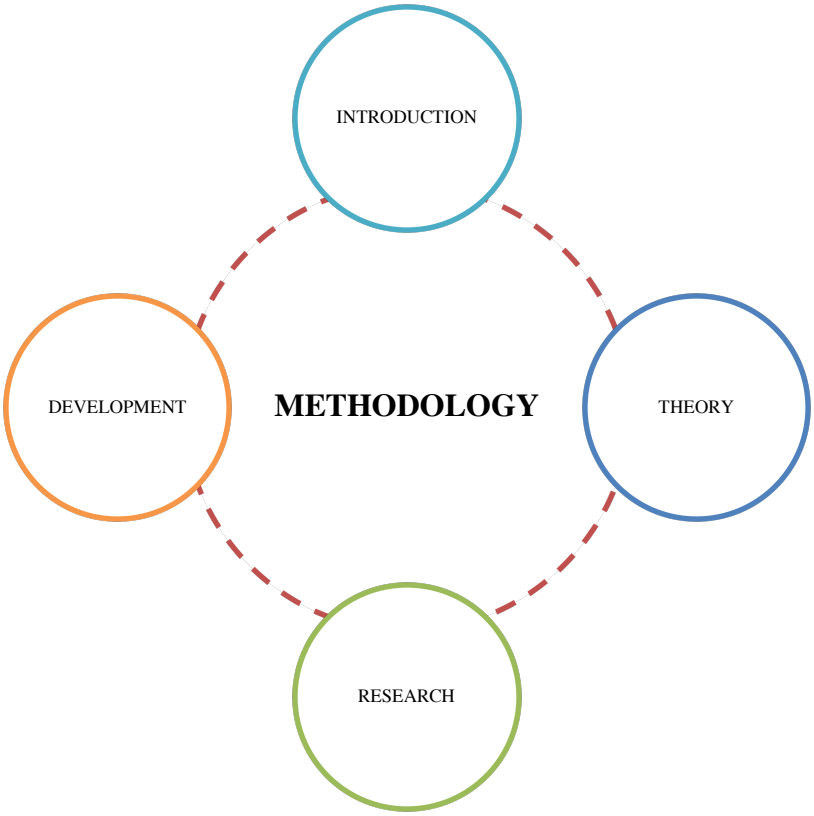

FIG.1 - Schematic description of the main sections that characterize the thesis methodology

RESEARCH

For what concern the methodology that have been applied for the research of the case studies, different paths were followed with different timing:

1. Primarily have been defined the selection criteria of the case studies in order to have guidelines to follow to get the most necessary data possible.

2. They were subsequently sought the highest possible number of case studies on the recovery of abandoned industrial sites projects present throughout the Italian territory.

3. Later they were applied the selection criteria previously defined in order to further reduce the case study sample examined, and not to examine cases not in line with the objectives of the research.

4. Then have been defined some parameters for the evaluation of different projects, that once inserted in a table, have permitted to categorize and analyze in a more rapid and

uniform way the case studies, also allowing to make quick and effective comparisons between projects.

5. As for the textual content of the thesis, only the most significant cases are shown and described in order to have a picture as varied and representative as possible without dwell too much in the description of each case study collected (in any case it is possible to see in the detail each considered project by consulting the attached table).

6. In the analysis phase are different methodologies used to assess the level of adaptability (FLEX 2.0), and consistently to compare between them the case studies (Normalization of the data, AHP technique, adaptive reuse score, radar charts).

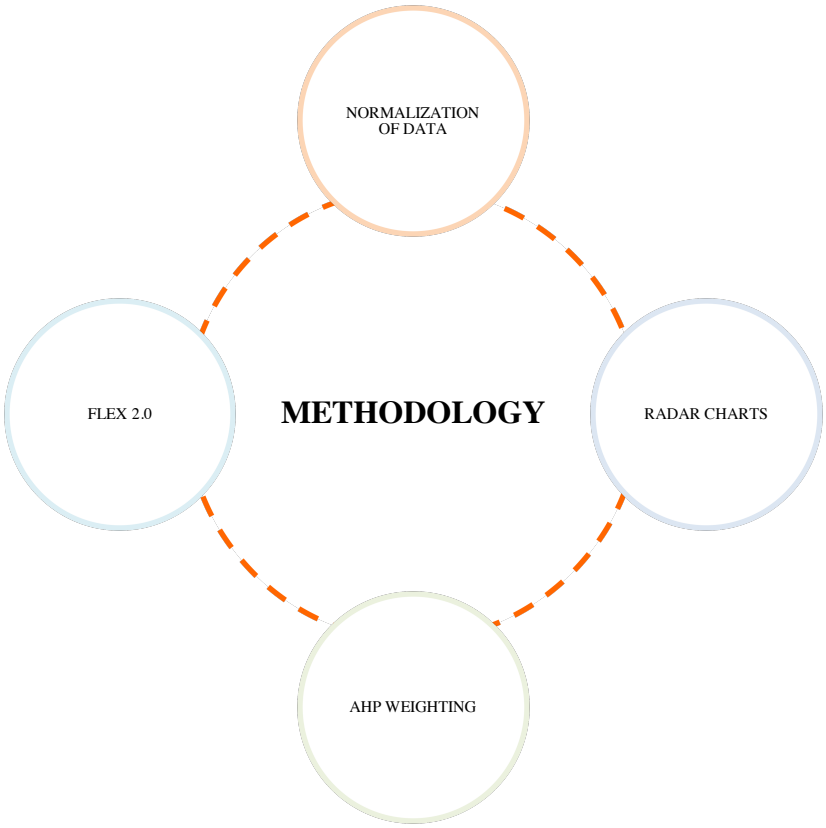

FIG.2 - Schematic description of the main analisys tools

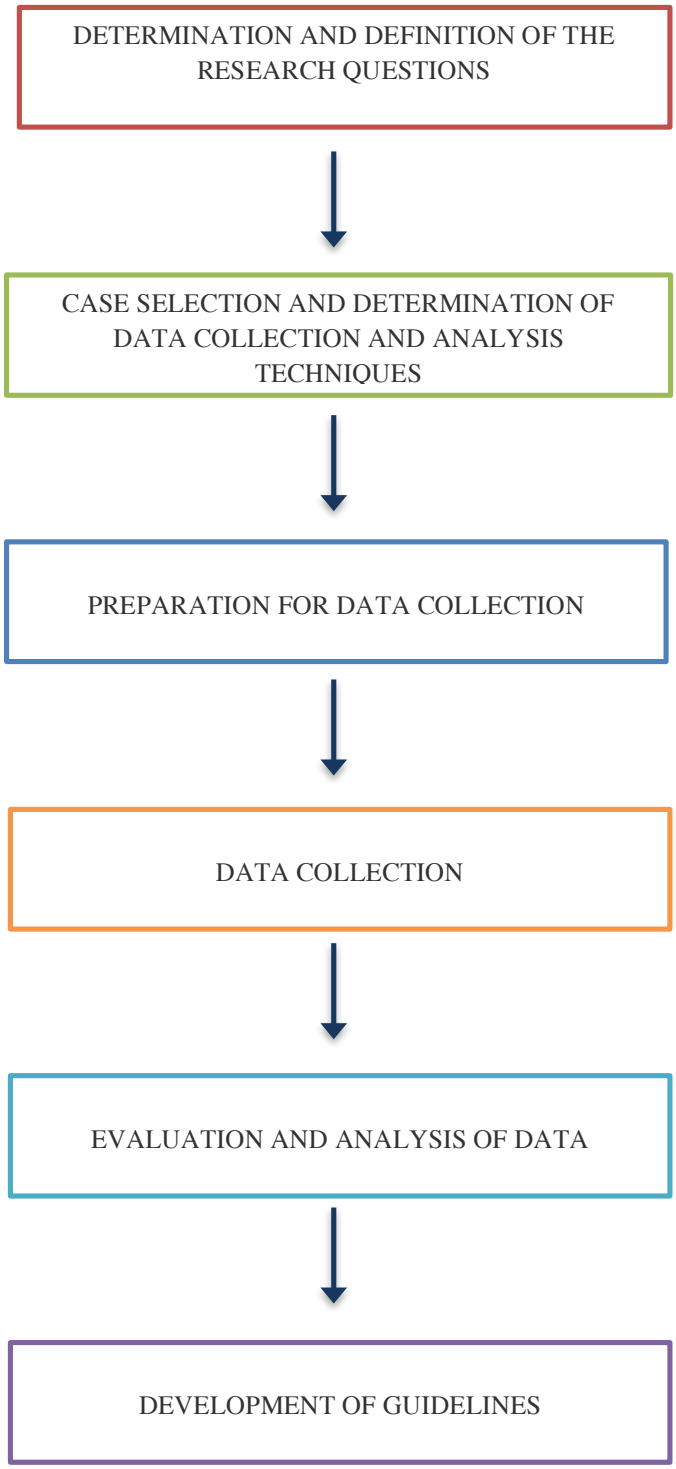

FIG. 3 - Phases in the development of the study of a case

2.2 THE CONTEXT

2.2.1 THE INDUSTRIAL DECOMISSIONING

The industrial building disposal, in his evidence of large-scale complex process, is manifested in the seventies, with clear evidence initially in most industrialized countries, by tradition like England, France, Germany and the United States, coinciding with the decline of some traditional productive sectors and the gradual transition from an industrial society linked to the Fordist model to a post-industrial society characterized by a marked outsourcing.

There are many phrases in the literature to indicate, in general, the abandoned areas and, by extension, also of old industrial sites along with the buildings upon which they insist.

Are expressions with sometimes different connotation, as "weak areas", "underdeveloped areas", "interstitial areas", "urban voids", or "liberated places", "resource containers", "malleable areas" with positive meaning refers to their transformation. In Italy, the Environmental Code, Legislative Decree no. 152 of 2006, art. 240, defines factory site "a site in which ceased production activities." The site can then stand in "uncontaminated", "contaminated" and "potentially contaminated" based on the concentration of contamination thresholds (CSC) and risk (CSR). In international parlance of old industrial sites are known as "brownfields". The CLARINET working group, established by the European Commission, defines "brownfields" as "sites that":

- have been affected by the former uses of the site and the surrounding land;
- are derelict or underused;
- have real or perceived contamination problems;
- are mainly in developed urban areas;
- require intervention to bring them back to beneficial use.

While in the US, the EPA (Environmental Protection Agency) defines them as "*real property, the expansion, redevelopment, or reuse of Which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant*."

The brownfields evidenced by their presence / absence predominance, sometimes arrogant, that industry, especially in developed cities on the Fordist model as Turin had set, according to your needs, urban development and the resulting image.

These areas to their "look" occurred first in their most problematic aspects, except for the expectations of rent related to their position, which became cause of urban sprawl, central or semi-central in many situations.

He then attempted to see the brownfields exclusively as free areas or easily releasable in territorial space areas from the market, forcing the market itself when this vision did not correspond to reality.

When these operations have failed within a reasonable timeframe, or when you have created intricate situation at the corporate level (owners failed, heirs fighting each other) the conversion of brownfield sites very long time have openly revealed their situation left to themselves and public administration who had to take charge, both times they even only level of intention, because of the negative reverb generated by their degradation of a neighbourhood more or less vast.

In general, the sale of buildings or areas has ancient origins since it is linked to the evolution of society and to changing human needs over time.

Attention also exerted on the layman has had a feed-back of interest on the part of researchers and practitioners who produced until the end of the Nineties many studies, although with the limit of poor systematization.

The most explicit tendency for the public operator, converges with the private course of action was to deal with the re-use of brownfield sites linking it to individual cases and thus occasionally and randomly not dominated by a wider vision and worried the phenomenon more generally.

Meanwhile the general economic situation had become very adverse investment in the eighties had seemed the most natural outcome of the transformation of urban wastelands: the investments in the construction sector, particularly in services.

In recent decades, in Italy, as well as in the international context, the phenomenon of abandoned industrial buildings, becomes significantly large, with social, urban and inevitable economic repercussions. Meanwhile, the cultural debate has generated a growing increasingly on the problem and awareness of the strategic role that industrial wastelands can play for the satisfaction of new needs.

Currently abandoned industrial buildings are an important part of the housing stock in Italy and worldwide, especially in developed countries traditionally. It is a housing greatly

varied for formal, typological, structural, technological, which, in most cases, not subject to maintenance, is in an inevitable state of more or less advanced deterioration.
In light of the need, ever more pressing, of a sustainable environment and regeneration of the city, there is the problem of recovery of abandoned industrial buildings, which can take on a strategic role in the process of urban transformation.

2.2.2 CAUSES, SIZE AND EVOLUTION

Various and different nature can be the causes of the industrial decommissioning, such as technological obsolescence of the plant, environmental pollution, the location, which, in relation for example to the cost of labour and sources of energy and raw materials, could not be more profitable in certain areas.
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In light of the need, ever more pressing, of a sustainable environment and regeneration of the city, there is the problem of recovery of abandoned industrial buildings, which can take on a strategic role in the process of urban transformation.
The main reasons of the industrial disposal are three:
-The radical economic restructuring, the redefinition of economic activities
-The reorganization and innovation of operating systems
-The process of decentralization and re-location
More specifically, in the industrial building case, the disposal is that phase in which, for different kinds of reasons discussed below, the original production function is interrupted and, therefore, the building is unused.
An analysis of several cases of abandoned industrial buildings is possible to identify the main causes behind the phenomenon, grouped into factors of economic and sectorial factor such as demographic crisis, technological factor and at least the decline of environmental and urban planning.
Among the economic and sectoral factors include: the crisis "product", or the exhaustion of the market by the demand for a particular good and / or the inability of the system to respond quickly to a new application with a new offer the decline of some traditional

sectors of industrial production for the benefit of rapid growth of the service sector; local competition between companies and / or market competition on a global level; the crisis linked to the availability and cost of energy resources.

The technological factors involved in most industrial divestitures as strongly linked to the growing gap between natural "aging" of the system and continuous technical progress.

In particular, these factors include: the deterioration of the building, which can affect both the elements structural and non-structural, and is a function of the technical life cycle, of the construction systems and the durability of the materials; technological obsolescence, which can relate to the production system, the facility layout, machinery.

The state of decay and technological obsolescence can also make the inappropriate building towards the protection of health and safety in working conditions.

Environmental factors can bring not only the impact of production activities on the site but also other issues such as the depletion of raw materials obtained locally (as may occur if the mining industry).

The urban factors ultimately play a key role in the disposal process: transformations resulting from the population growth can cause a relocation of the original industrial area to outlying areas in order to decongest the city center.

The same location of the factory is a strategic planning factor: the lack of infrastructure, or the failure to upgrade the existing road, which, however, had been expected in the phase of the settlement, can be lean towards moving to other sites.

We can outline the different types of abandoned items:

1. Areas and plants derived from ancient or traditional productive cultures (silk mills, pasta factories, sugar mills, mines, shipyards). Affecting all Italian regions, even outside the large and medium cities.

2. Areas and facilities resulting from industrialization phases mature:

- The first half of '900 and located mainly in the north–west of Italy.
- Large complex incorporated in the subsequent urban growth, resulting from the spill of the state presence in the basic sectors (iron and steel, chemical).

3. Large urban services or obsolete plants especially nineteenth century (slaughterhouses, hospitals, barracks, and railway stations) present in central or semi-central in most medium and large cities.

4. Areas and installations in unborn production facilities or short-term (public services), made with public funds affecting especially the south center, often cause severe degradation and neglect situations.

5. Areas and installations affected by widespread and pervasive processes of renewal and economic restructuring - production (craft, industrial, commercial). They cover many properties, medium and small size, even in a difficult position.

Wanting to outline the historical evolution of the disposal of the industrial location process is observed that the phenomenon appears significantly worldwide since the early seventies, involving initially the areas of older industrialization and mining in Central Europe basins and regions Atlantic and central United States.

Following were affected regions of southern Europe and the Mediterranean and, in particular, industrial clusters also of Italy.

From a sectoral point of view, the first former industrial buildings belong to the steel sectors, metallurgy, shipbuilding, textile and mining industry.

Often the beginning of the phenomenon is made to coincide, in the conventional manner, with the energy crisis of 1973 when, during the Yom Kippur war, the Arab countries belonging to OPEC blocked its imports of oil to the United States and European countries, with the consequences of a significant rise in fossil fuel prices and then a serious crisis of the western production system, whose main sources of energy consisted of petroleum, the largest percentage, from coal and natural gas.

In fact, the industrial decline, according to a broader view, should be understood as a spatial outcome of the changes that have affected the organizational forms of production, in the transition from Fordist production system to the post-Fordist.

Next to this radical change in the production structure, jointly and in accordance with the dynamics of interaction, have established new models of urban development, characterized by gradual decentralization processes and counter-urbanization that occurred during the two decades since the sixties.

In the evolution of industrial decommissioning it is possible to distinguish two fundamental phases: the first phase is relative to the seventies, which, as previously mentioned, coincides with the energy crisis and is characterized by the decentralization of production, and then by a dispersion of the city towards the peripheral zones.

Then a second phase relative to the eighties, in which industrial relocations is linked to the strong need to reorganize production, thanks to technological innovations that reduce the need for labour, and to close the gap through automation and computerization.
In this phase begins, therefore, that process of internationalization of the economy, where the production is aimed at a global market and there is a gradual shift in investment from manufacturing to the service sector.
This series of changes are the basis of the slow and unstoppable abandonment of a large number of industrial buildings on a worldwide scale that, for obsolete organization of the production process, and localization, are unable to adapt to the new conditions.
In the 80's you then configure the "gaps" in the city and at the same time there is a "dissemination" according to industry guidelines and unexpected rules: in crisis the traditional model of the city based on a "central space", dominant and attractor, and on well-defined hierarchical relationships between the parties, and is establishing a model city "polycentric", a "reticular complex" system, in which there are more centers distributed within the network.
In addition to the appearance of large voids followed several attempts to land-mainly real estate development. The approach is essentially addressed to the intervention planning and architectural without investigating in detail the causes and nature of the problem.
In the 90's a growing awareness of the extent of the phenomenon and we try to account for the wider problems even by comparison with other European situations with the extension of the analysis also "releasable" areas, and underused.
There is therefore buildings and brownfield sites suddenly available that problem can become an asset to rethink and revitalize the urban fabric both from the point of view of functional buoyancy space of socio-economic development and appreciation of the history and identity of the city signs existing, reversing the trend of expansion centrifuge. At the same time, it reveals the inadequacy of traditional urban planning and design methods to cope with such a large and diverse phenomenon. The main theme of urbanism and architecture is no longer that of new construction, growth, expansion, but becomes that of the existing transformation, the "building built in", "to give meaning and future through continuous modifications the city, the land, the existing materials ", searching for new methods of design attentive to the problem of relations with the context, the specificity of the place, the sense of recovery. At the end of 90s it tends to attenuate the extent of the

phenomenon either with regard to its possible explanations, both from the point of view of the problematic nature of the reuse of the areas.

The sources available in the literature about the true extent of the phenomenon at European level, are imprecise, sometimes conflicting or so to date, and only some countries have launched surveys to develop reliable estimates.

According to the report of the European Working Group CLARINET, from a survey of 2002, in Germany brownfields occupy an area of approximately 146,000 hectares, in Britain 76607, 26400 in France, Holland 11000, 14500 in Belgium, in Switzerland of 1,700 hectares.

In Italy, the date itself, only in the province of Milan, the space occupied by brownfields is estimated to be about 1260 hectares.

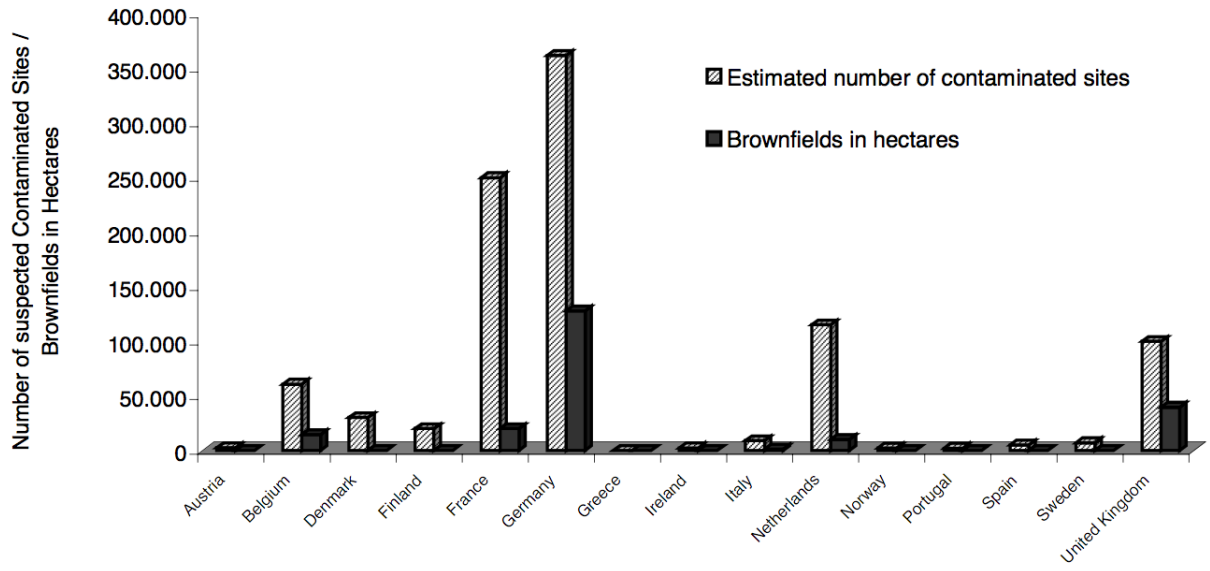


FIG.4 – Representation of the space (hectares) occupied by brownfields in European countries

3. INDUSTRIAL HERITAGE: MAIN CHARACTERISTICS AND POTENTIALITY

Industrial heritage places and spaces link the contemporary world to the work of the past. These buildings inform about economic, architectural and technical achivements, of infrastructure, of processes and procedures and the transformation of materials.

They can also tell something about the aim, progress and fall of industries and places over time. These areas and spaces remind the social organization and the labour of the people that worked in those sites.

The abandoned relics of our industrial heritage are not only the house of past industrial processes, they are also the signs of something that have characterized landscapes and areas for years and years. These buildings may have been decomissioned many years ago, their uses and production activities can have been changed many times during the years, or their ordinary use may be terminated not long time ago.

Industrial buildings that are used for the same industry during the time frequently go through substantial modifications in relation to technological innovation and they can be appreciated by the citizens of the neighborood, or dismissed as unsightly signs of blight and decay.

The heritage significance of an industrial site can be historic, aesthetic, social and/ or technical and both tangible and intangible and we can say that those structures are not so much appreciated as the other kinds of buildings. Industrial heritage can be seen in different ways by the involved actors: it can have great pontentiality or it can be seen as a problem and demolited.

Industrial heritage is characterized by continous changes and adaptation of its structures and components due to the constant change and development of activities and processes.

Changes in products and technology mean that, unlike offices or houses, it is not easy to keep using custom-built industrial places for their original purpose.

3.1 ARCHITECTURAL CHARACTERISTICS AND THE POTENTIAL FOR RECOVERY

- the types of structure that characterize this kind of buildings, usually, are designed to support heavy static loads and dynamic actions;

- the shells are often characterized by solid load-bearing brick walls that can guarantee a good thermal insultaion and in case of frame structures, the need of an energy adjustment may allow to test new systems and technologies for the passive energy savings;

- the volumes are generally compact and therefore with a low ratio between surface and volume the same dispersant;

- the rooms are large, with ample light between the vertical supports, substantial internal net height, and therefore characterized by adeguate flexibility and adaptability to new uses;

- the wide glass superficies, both vertical closures in coverage, give good natural lighting;

- interspaces are present, technical rooms and spaces specific for the housing of equipment and plant parts which may become available spaces for energy refurbishment strategies.

3.2 THE POTENTIAL FOR FUNCTIONAL RECONVERSION

Beyond spatial and construction aspects, the location of the industrial site in the urban conest is a further potential factor for requalification: the position in relation to the infrastuctures and to the urban centers.
Consciousness of these positive feautures of an industrial building allows to better understand and improve the key role it plays in urban renewal processes thanks to the many advantages that can be achieved, such as:

- a saving of resources needed for new buildings and a reduction in consumption of land as opposed to the rapid and disordered process of metropolisation that determine loss and / or degradation of land suitable for agricultural production, biodiversity and landscape quality;

- an ecological regeneration of the urbanized area through the reuse of the relevant areas of industrial buildings, previously reclaimed;

- social re-appropriation of urban spaces and the preservation of the collective memory of the industrial past and then the city's history;

- the ability to introduce new and diverse functions as an engine for social and economic improvement.

An analysis on the transformability of industrial buildings must consider, in addition to the potential for recovery, those issues that may hinder or anyway strongly condition the reuse. Preserving means selecting in the heritage of buildings and abandoned places those specific characters in which the community recognizes his identity, values and the traces of its history. It requires the act to determine a connection with the past in an urban fabric that is evolving continuously.

In the dual purpose of keeping the traces of the past and to meet the new requirements, preservation must be understood as the existing project, or how to transform operation through the critical selection of what has collective value. In this sense, conservation and modification become each other's necessary complement of the other.

3.3 HIGH ADAPTABILITY AND URBAN REGENERATION

ADAPTABILITY

Industrial buildings are highly adaptable, since they were built to accommodate technological systems and industrial machinery of big dimensions, they are characterized by large spaces internally that can be well adapted for different purposes, such as museums, libraries, spaces for shows and all of those activities that require a large amount of space and for this reason they can be considered “exclusive buildings”.
Nowadays, in the construction sector, where everyone tries to spend as less as possible, no one wants to pay for “extra” space. We are so used to be contained in narrow cost-effective spaces that these large spaces are seen and appreciated as an important resource.

This type of building, initially designed to maximize the efficiency of the workplace, make possible the fact of having a large amount of natural light that promotes the work of the people present inside.
In the conversion of these structures, this large amount of natural light can be tailored according to the needs of the new use.
The enlightenment from it can promote well-being within the workplace or social environment.
Moreover, as these buildings were built when internal conditioning systems were not yet widespread, they have been designed so as to maximize the possible advantages deriving from the natural properties of ventilation and shading, so as to create environments as comfortable as possible. Considering all these factors, can be noted that these structures, although they are a little bit special, offer good adaptability features.
In addition, in order to improve the sustainability of our environment, we have to try to reuse these buildings rather than building new.
If we take into account sustainability we have to consider and analyze all these factors that can be really important for the decision-making process, also the possibility to rebuild from new, not only sustainable technologies, such as solar panels, heat collecting vacuum tubes and wind turbines.
It is far more sustainable to reuse these buildings than it is to eject the energy required to deconstruct the buildings, to transport new materials for construction and to erect brand new buildings. The fact is that these buildings are perfectly adequate for housing a variety of programs, and if we consider their cultural and historical value are even more important.
The industrial heritage doesn't need to be demolished, its usefulness to be reimagined.

BUILDING CULTURE

Probably the great adaptability of these structures is mainly due to the fact that they are a constituent part of our real estate and cultural heritage.
If we refer to examples in the main industrialized countries, we can see how these buildings are universally appreciated for their uniqueness and if adequately refurbished they can be effective vehicles of socio-cultural and economic growth.
These architectural complexes differentiate belonging urban contest, giving unique

identity and attributes that can enhance the welfare of the community.

CREATIVE REIMAGINING

This is what gives cities character: the response of creative populations in shaping their environment.

Industrial heritage, through well inspired creativity, may be reconverted in architectural complexes capable to reanimate entire urban areas. There are many successful examples all over the world, such as the revitalization of a coal plant in Essen, Germany, 798 Art District in Beijing, the Tate Modern in London, and the loft buildings of Shoo in New York.

It's well known that the revitalization of such areas is due in several cases to artists that moved in peripheral and outlying neighborhoods to live and practice art based activities.

Artists can be considered the pioneers of this process of gentrification that tends to revitalize entire urban areas and you can say that they have done more than architects, planners, theorists and law makers together.

It seems that the main benefits given by architecture to the urban communities are not these related to high architectural concepts and theories but these that come from the opposite way of thinking and acting.

AUTHENTICITY

The authenticity of such structures is the most appreciated character by artists and it gives to the building an inestimable value. It can be considered design extremely functional that absolutely doesn't care about the aesthetic forms and that is bounded only to serve their use. The architecture of this building is honest because represents what they served for years and years. We can't find anything like this today because too many times developments are the emphasis of an architect style rather than simply housing the activities of the people in the best possible way. The result of the base function of the old is beauty.

THE VALUE OF THE OLD

Restoring these buildings following the initial model does not make the same effect that you can have instead using creativity, re-imagining the structure with a contemporary

adaptation. In this way the end result is a combination of architecture and casings from different eras which together give uniqueness and character building. The operation is therefore seen as an added value which is added to that of the structure already present and unchanged.

It is not only the reuse of these buildings and turn them into museums or general developments, but rather it comes to their revitalization in a way that makes sense. It is about creating an interesting dialogue. The development of these places is the people's lives, what they can relate to, engage, use, and build upon.

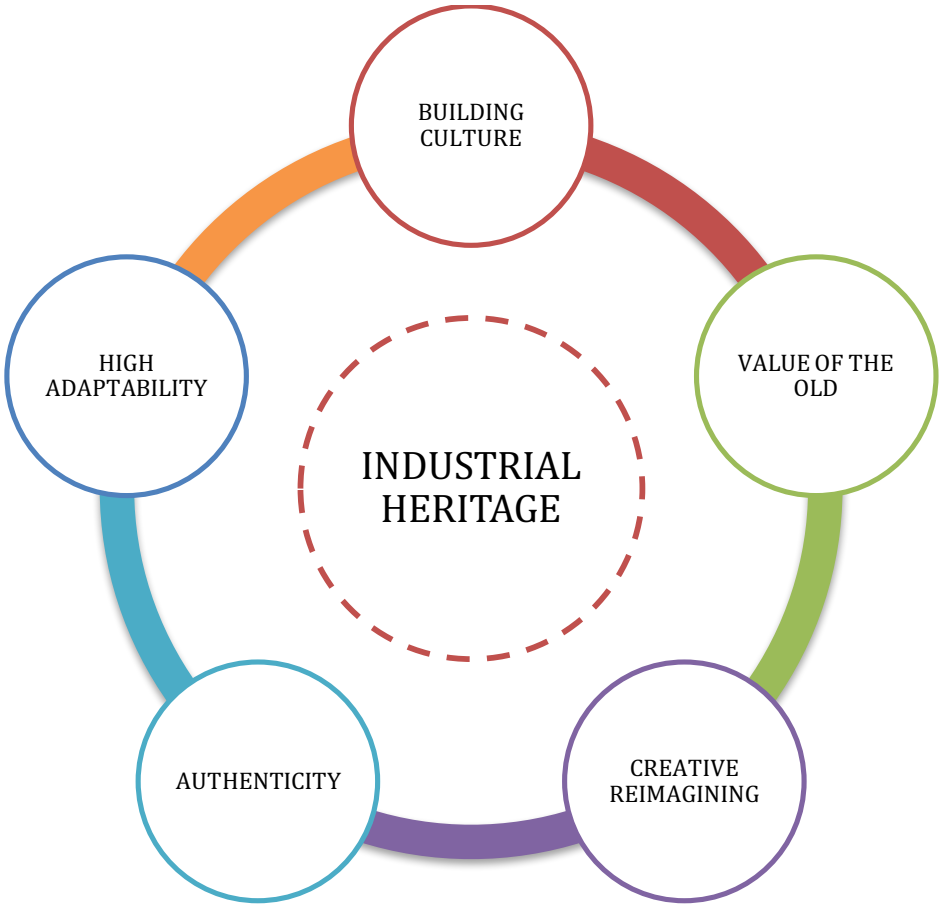


FIG.5 - Schematic description of main factors that represent the potential of industrial heritage

3.4 EXTERNALITIES AND IMPACTS

Disused industrial sites can have a negative socio-economic impact on surrounding areas.

NEGATIVE EXTERNALITIES OF ABANDONED BROWNFIELD SITES

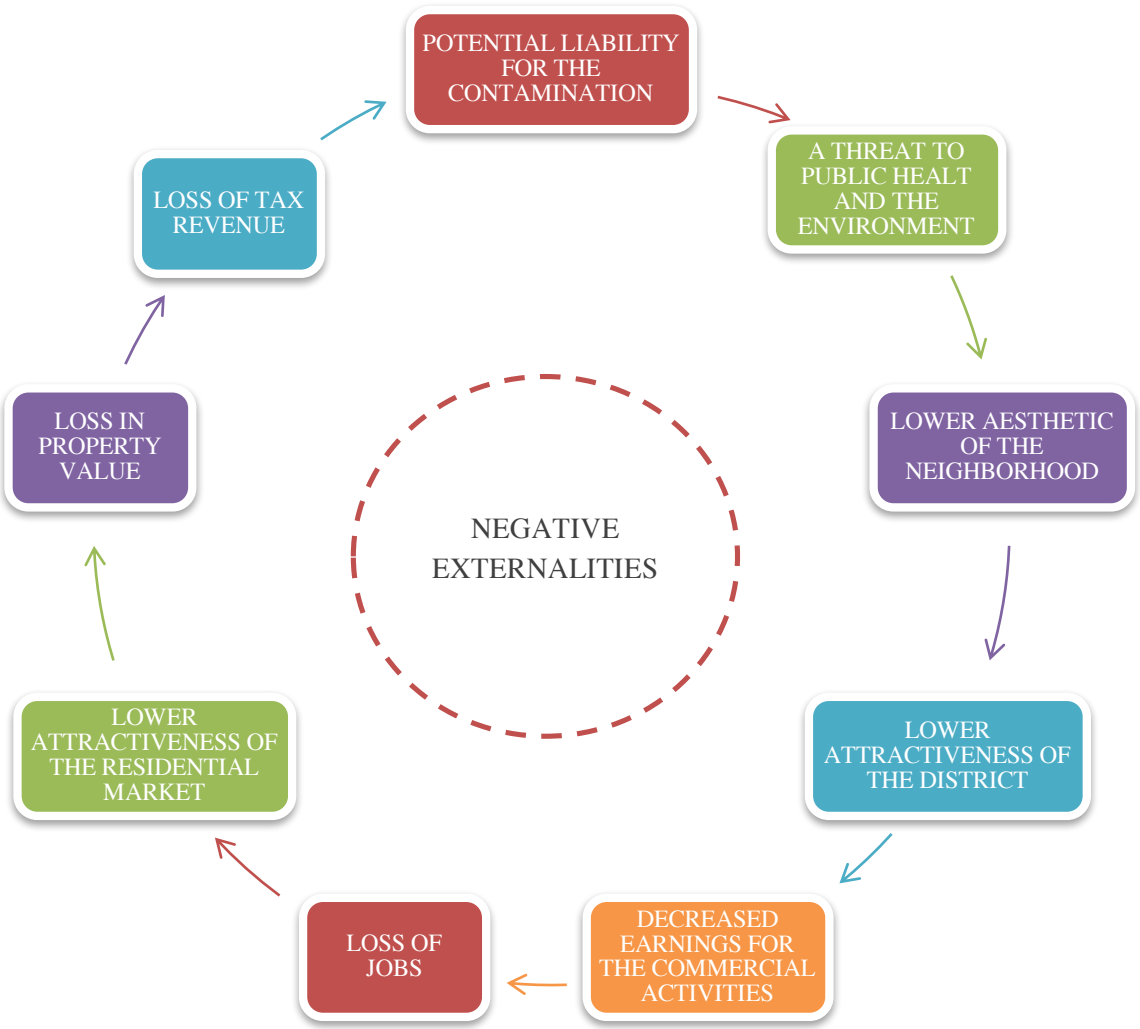


FIG. 6 – Cyclical representation of the negative externalities that a brownfield site can produce

In contrast, adaptive reuse of industrial areas can have a significant positive impact on the economic situation of the area.

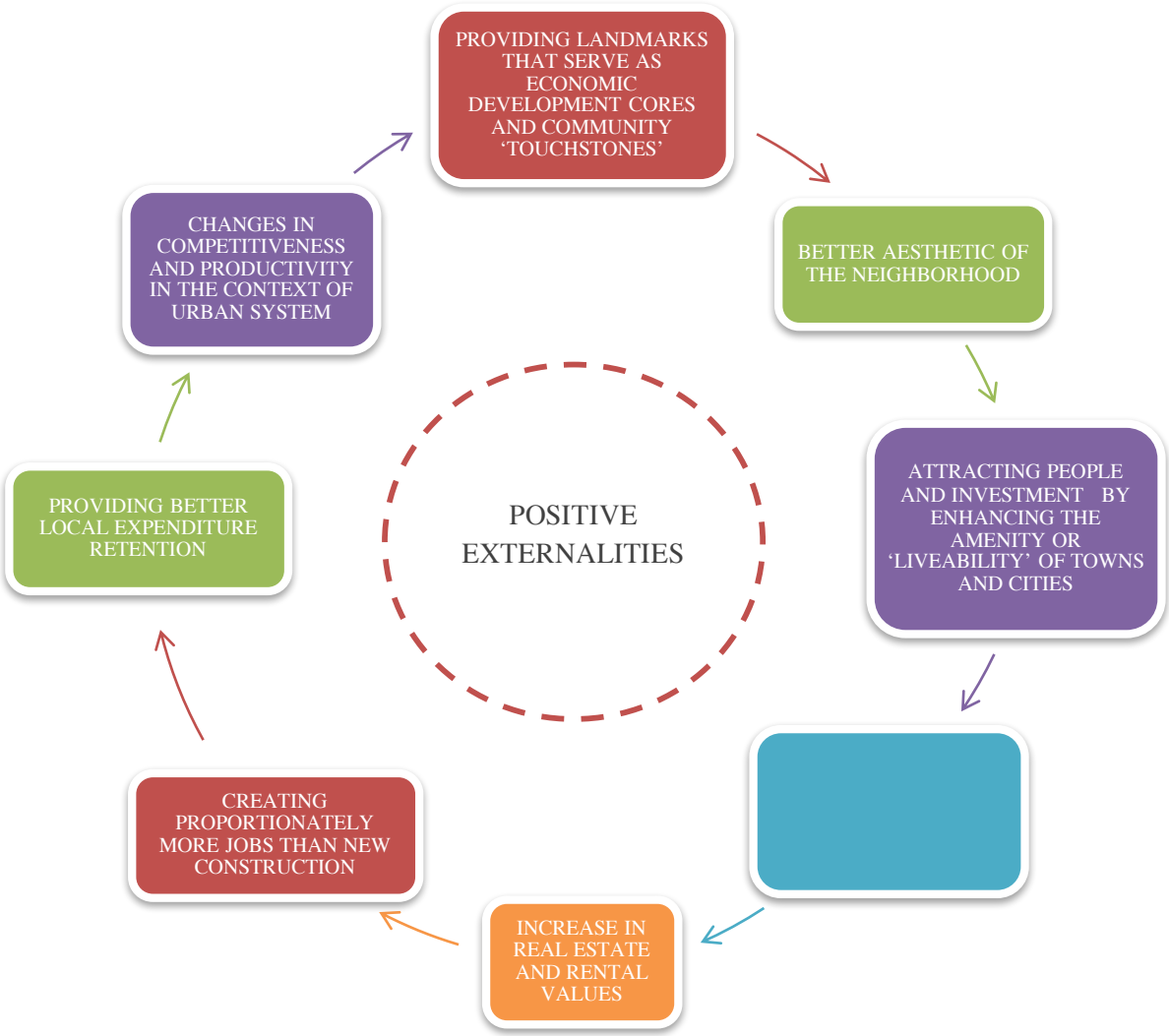


FIG. 7 – Cyclical representation of the positive externalities produced by the reuse of industrial sites

3.5 THE EMBODIED ENERGY OF HERITAGE BUILDINGS

Demolition and equivalent new construction, no matter how energy efficient, typically requires decades to equal the energy savings of rehabilitating an existing building.

The adaptive reuse of heritage buildings is more and more significant for what concern sustainability.

It can be perceived in relation to social sustainability, authenticating and sustaining communities, maintaining memory etc., and in relation to environmental sustainability.

Maintaining and reinforcing built elements gives several and different environmental advantages as shown in the scheme below.

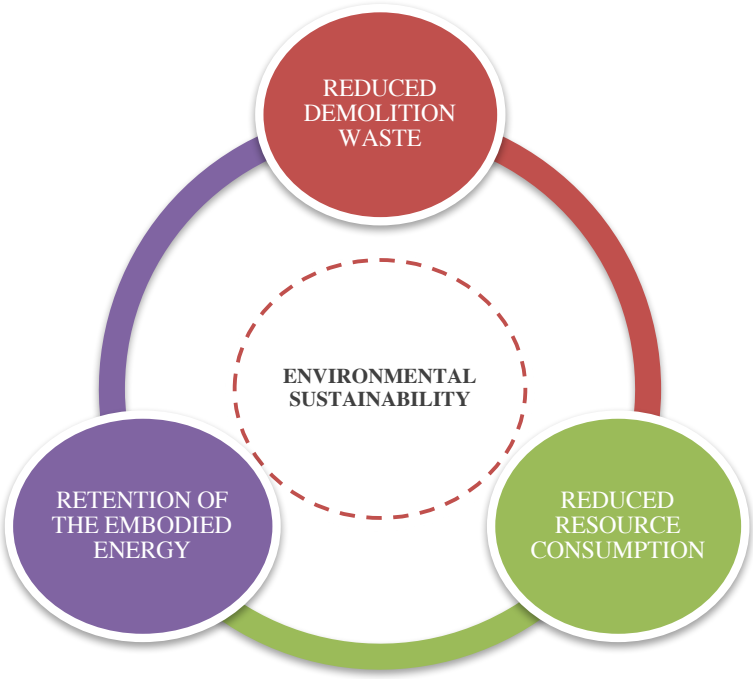


FIG. 8 - Schematic representation of the main advantages, in terms of environmental sustainability, deriving from adaptive reuse

Embodied energy is the energy and materials already used in making a building and is defined as energy consumed by all the processes associated with the production of a building, from the acquisition of natural resources to product delivery, including mining, manufacturing of materials and equipment, transport and administrative functions.

Reusing buildings retains their embodied energy, and the materials generally kept in a

building adapted for reuse are also often the most energy- intensive materials.

The reuse of building materials usually involves a saving of approximately 95 per cent of embodied energy that would otherwise be wasted.

The adaptive reuse of industrial sites is also often compatible with the installation of new environmentally sustainable design initiatives such as water tanks, solar power and insulation, all of these can add to the sustainable contribution of the project.

4. ADAPTIVE REUSE

In today's society the word recycle is on the agenda, with the aim to reduce and reuse waste materials, or unused objects, we try to give life to everything, starting from plastic bottles or glass until you get to cars, clothes and pine furniture.

Reuse is a process that modifies an object not used or not functioning in a new object that can have a different function. In several cases, such as the buildings, the structure is not changed but only the intended use.

This is what we call adaptive reuse, and concern essentially the capacity of the new use and new functions to coexist with the heritage value of the building and to respect it giving a new value for the future.

Adaptive reuse gives new life to a site, rather than seeking to freeze it at a particular moment in time. It tries to analyze the different options that stay between demolition and new use as cultural space, adding to the existing structures a new one or more than one that are able to describe and illustrate another part of the building history.

It gives a chance to spaces and sites, that contrarily would be demolished, to be preserved for future generations.

Adaptive reuse often is an instrument for the revitalization of an entire urban area or neighborhood and it is not only bounded to buildings or small sites. In this sense it can be considered a real and successful strategy for urban growth and prosperity.

Sometimes, adaptive reuse is the only way that the building's fabric will be properly cared for, revealed or interpreted, while making better use of the building itself.

Where a building can no longer function with its original use, a new use through adaptation may be the only way to preserve its heritage significance.

The adaptive re-use process must be placed exactly at that point of intersection between the existing architectural and functional conformation of the building and the new use which should be seen as an abstract concept that binds the final design project.

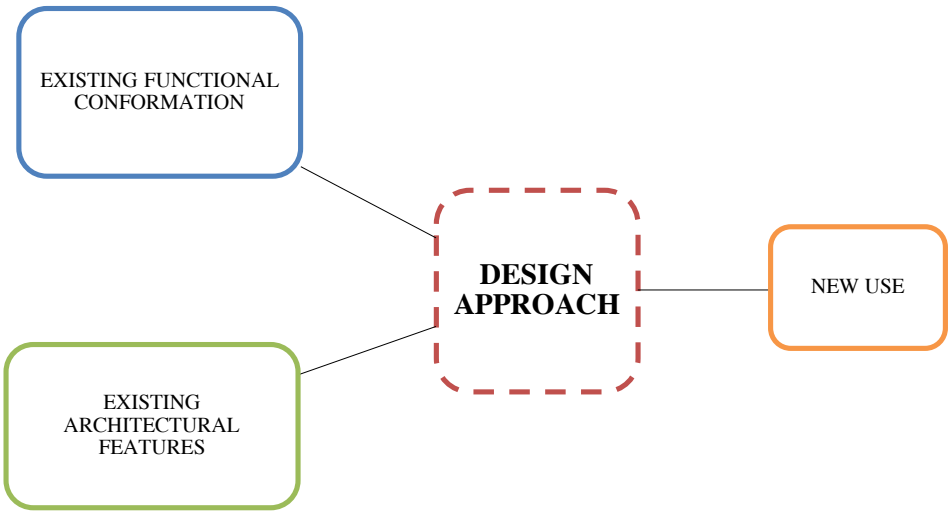


FIG.9 - Schematic description of key factors that characterize the concept of adaptive reuse

Adaptive reuse is not simply a matter of retaining the structure of buildings, this heritage needs to be analyze in different and specific ways.

Other aspects to be considered include the spatial structures and configurations, the relationship between the site and its context, significant views to, from and within the site, and traces of activities and processes. When reusing industrial heritage, the new project should also aim to retain evidence of technologies, the flows of materials and people, and work processes.

Some state agencies are making policies to manage change, including adaptation, when assessing development of heritage places. Such policies contain standard criteria to help ensure that an adaptive reuse project has minimal impact on a building's heritage values, such as:

- discouraging "faradism" that is, gutting the building and retaining its facade

- requiring new work to be recognizable as contemporary, rather than a poor imitation of the original historic style of the building.

- seeking a new use for the building that is compatible with its original use.

4.1 GENERAL EXAMPLES

The subset of adaptive reuse not only concerns the decommissioned industrial heritage but includes any type of buildings and any type of destination of use; is therefore present in all those cases in which the original function or primary activity of the building ceases to exist and is switched to a new use.

Through adaptive reuse old, unoccupied buildings can become suitable sites for many different types of use.

In Europe, the main forms of adaptive reuse have been around former palaces and unused residences of the different European royal families into publicly accessible galleries and museums. Many of the spaces have been restored with period finishes and display different collections of art, and design.

In Paris the most famous example of adaptive reuse is the Musée du Louvre, a former palace built in the late 12th century under Philip II and opened to the public as a museum in 1793. Also, in London, England, the Queen's House, a former royal residence built around 1614, has become part of the National Maritime Museum and houses the museum's fine art collection.

In this sense we can find several examples of buildings adapted to new uses as deconsecrated churches become homes or clubs, prisons have become training centers, or headlights transformed into luxury hotels.

THE TATE MODERN ART MUSEUM AND GALLERY, LONDON

Bankside Power Station was a former electricity generating station located on the south bank of the River Thames, in the Bankside area of the Borough of Southwark, London.

It generated electricity from 1891 to 1981. Since 2000 the building has been used to house the Tate Modern art museum and gallery. The Tate Modern, also in London is another example of adaptive reuse in the European continent, unlike other adaptive reuse galleries in Europe, the Tate Modern takes full advantage of the site of the former Bankside Power Station, which involved the refurbishment of the old, abandoned power station. The wide industrial space has proven to be a worthy backdrop to modern art, with the famous turbine hall hosting artists including Olafur Eliasson, Rachel Whiteread and Ai Weiwei.

PHO. 1 – The ex thermoelectric power plant of Bankside

PHO. 2 – The Tate Modern museum now

GASOMETER CITY, VIENNA

Gasometers are four former gas tanks, each of 90,000 m^3 storage capacity, built as part of the Vienna municipal gas works Gaswerk Simmering in 1896–1899. They are located in the 11th district, Simmering. They were used from 1899 to 1984 as gas storage tanks. After the changeover from town gas to natural gas between 1969 and 1978, they were no longer used and were shut down. Only the brick exterior front walls were preserved. The structures have found new residential and commercial use in modern times.

Vienna undertook a remodelling and revitalization of the protected monuments and in 1995 called for ideas for the new use of the structures. The chosen designs by the architects Jean Nouvel (Gasometer A), Coop Himmelblau (Gasometer B), Manfred Wehdorn (Gasometer C) and Wilhelm Holzbauer (Gasometer D) were completed between 1999 and 2001. Each gasometer was divided into several zones for living, apartments in the top, working offices in the middle floors and entertainment and shopping shopping malls in the ground floors. The shopping mall levels in each gasometer are connected to the others by skybridges. The historic exterior wall was conserved.

PHO. 3 – Gasometers, Vienna 1932

PHO. 4 – Gasometer city, Vienna 2016

4.2 TEMPORARY AND INTERIM USES

Temporary uses can be a cosiderable choice in order to conserve industrial buildings until a better and longer use is met.

The building in these cases is used for a short period (six months on average, although in some cases it can lead to a few years of life) and its temporary use can be seen as a true strategy to preserve the structure and for begin to reactivate the area where the building is situated. The strategic approaches will support transitioning space and present interim projects, which have the prospect of utilizing space as a secondary means, while a more primary use of space is in development.

The utilization of temporary use is being considered by many urban planners and developers as a strategic part of the urban planning process.

The type of method for implementing temporary use is predetermined and planned as part of a developmental process, and is established to use a space temporarily as a secondary use of space, while the space is in a transition period to a more primary use of space.

Primary use in this context means permanent use, and secondary use, i.e. temporary use, has the potential of developing into primary use.

Temporary environments can can be designed to adapt to the changing conditions of the city. Because their functions are continually being modified depending on the space and conditions, their design can respond to uncertain situations. Interestingly, in such changing conditions, temporary uses are appropriating the space, claiming the space, and giving the space new meaning.

By presenting possibilities of repurposing through temporary and interim uses, there is the opportunity for renewal and averting the dependence on massive (re)development, sustaining a city's heritage.

FIG.10 - Schematic description of "temporary use" during the life cycle of a buildin

MERCATO METROPOLITANO, PORTA GENOVA (MILANO)

There are examples of temporary resue in Italy, in Milan for example in the zone of Porta Genova there is an old railway storage, which has had different uses over time going from abandoned and neglected area of the city, where once took place the Senigaglia fair to become a parking with car wash. At the beginning of 2016 during the expo, has given a new face to this urban area, a redevelopment project led to the creation of the Mercato Metropolitano, that is a unique experience of aggregation in the urban context where you can find local products, local restaurants and local fast food.

PHO. 5 – Ex Senigaglia fair, Milano

PHO. 6 – Mercato metropolitan, Milano 2016

EAST MARKET, LAMBRATE DISTRICT (MILANO)

East market is the first marketplace where everyone can buy, sell or swap any kind of stuff and the space can host over 250 exhibitors.

The inspiration comes from east london markets, where you can find antiques, furniture, vintage, second hand, sneakers, vynil, curiosities, oddities and old collections.

East market location is an old engineering company,

made in the second world war, an industrial charming location with an exhibition area of 6.000 square meters in the heart of ventura design district in Milan.

PHO. 7 – East market, old engineering company, Milano

PHO. 8 – East market, temporary shops Milano

MANIFATTURA TABACCHI, FIRENZE

The Lauria Studio has designed and plan the outfits for the event IT4FASHION played in April 2016 in the ex Manifattura Tabacchi in Florence.

The project seeks to combine the languages of the industrial architecture of the place with the plots and the evocative colours of this international event dedicated to the fashion technology. The photos refer to the ramp, characterized by a coating of iron plates, burnished and slightly oxidized, leading visitors to the host through the large entrance plaza.

The draft productions involving more than 5,000 square meters in the halls of the ex Manifattura Tabacchi in Florence. The factory covers an area of over six hectares was built between 1933 and 1940 and remained active until 2000 and then be 'abandoned' waiting for an urban plan for recovery and reuse.

The Lauria Studio was founded by Daniele Lauria in 1999 and today operates in Italy and South America working on architecture and urban planning projects.

PHO. 9 – Ex Manifattura Tabacchi in Florence

4.3 DECISION-MAKING PROCESS

4.3.1 ESTABILISHING THE APPROPRIATE INTERVENTION

The disused industrial buildings, along with the areas in which they are placed, they live a continous tension between conditions of permanence and change, degradation and possible recovery, of marginalization and integration.

THERE ARE TWO MAIN CHALLENGES TO TAKE INTO ACCOUNT:

- which is the right kind of intervention?

- which are the most appropriate tools in order to have an efficient result?

THERE ARE SEVERAL TYPES OF INTERVENTION THAT CAN BE APPLIED TO THIS SPECIFIC KIND OF STRUCTURES:

- the restoration finalized, through works of adaptation, to rehabilitate the initial production activities, if there are still the market conditions for a restart;

- restoration intended to change the production activities that interested the building, for example including new functions but different from the initial ones;

- the restoration for the functional conversion, or rather for reuse with new uses;

- demolition in order to replace the industrial building with a new one.

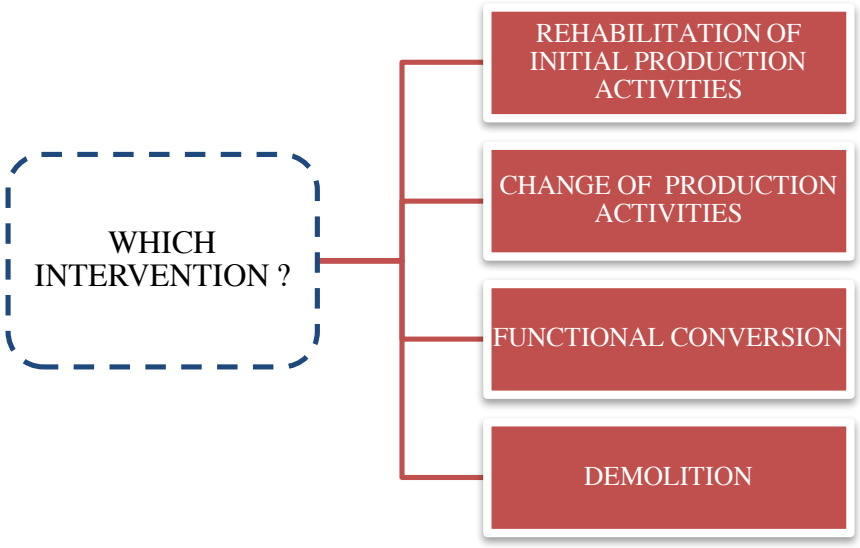


FIG. 11 - Schematic representation of the main types of intervention that can be applied to industrial buildings

The hypotheses of reuse emerge instead at the time when, after the completion of a thorough cognitive analysis of the building compared to the different expected requirements, the artifact appears not to be more suitable to the permanence of the original destination of use; even through maintenance interventions or requalification.

IT MAY OCCUR FOR SEVERAL REASONS:

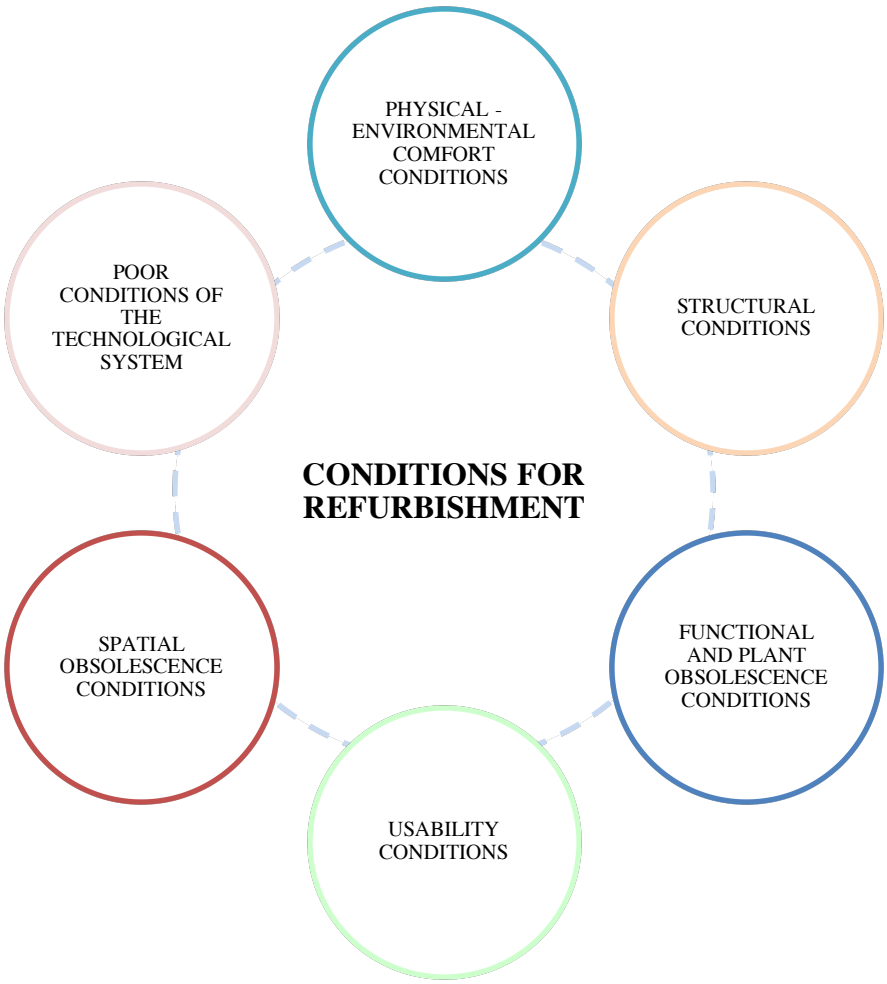


FIG. 12 - Schematic representation of the main reasons for reuse and functional conversion of industrial buildings

4.3.2 REUSE, REQUALIFICATION AND DEMOLITION

Reuse is therefore taken into account if the building presents irreversible conditions of obsolescence, or rather if re-using those certain spaces, plants and feautures, they demonstrate to be no more usable, both for the current destination of use that for similar type of destinations; if they were instead reversible it's possible to take into account requalification actions.

In the second case, requalify, not necessarily would not want to think of a different reuse. The two alternatives can indeed proceed at the same time.

To one side you can requalify plants and spaces and in the other side you can rethink to a functionality of these that is an alternative, but still compatible.

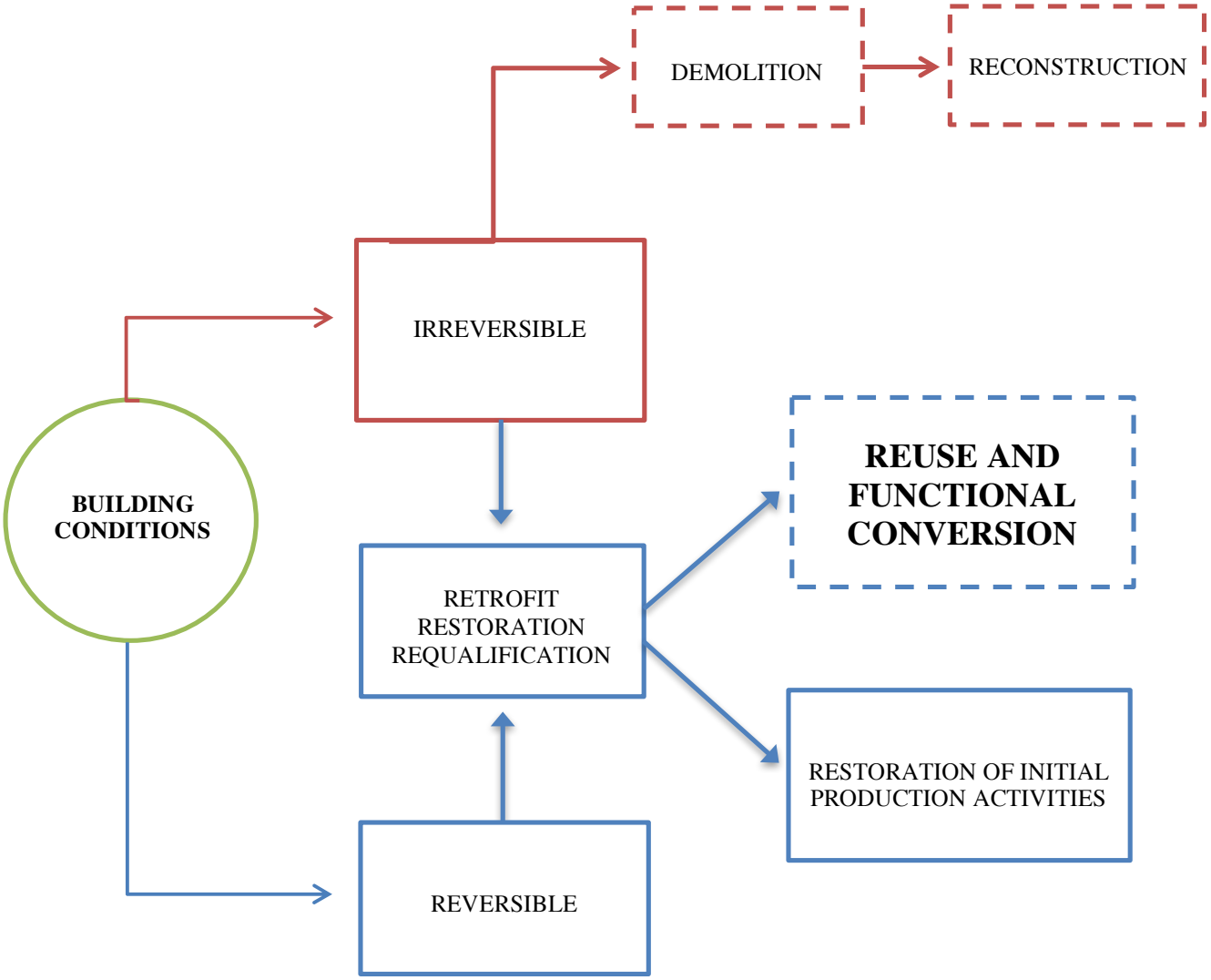


FIG. 13 - Schematic representation of the alternative paths that the decision-making process can take

In reaching the determination, there may be three different conditions for the establishment:

- Feasibility without or with moderate structural interventions;
- compatibility of the environmental system;
- environmental and technological adaptations necessary congruent, in terms of global cost, global value presumable for the re-used building (threshold of advantage with respect to replacing).

The definition of new uses, then implies the study of the characteristics of transformation, where with this concept we mean the vocation of architectural spaces, historically strenghten, to its use mutation, compatibly with the typological characters originally in the pre-existence.

The difficulty in the project change of the destination of use-reuse is precisely the definition of the new use in relation to the performances offered by the building. It must therefore be considered with particular attention the distribution system, namely: access, horizontal and vertical paths, accessibility to environmental units, pertinances, flow capacity and containability system, etc. Without neglecting that the compatibility inspection shall also pertain the location conditions and settlement needs.

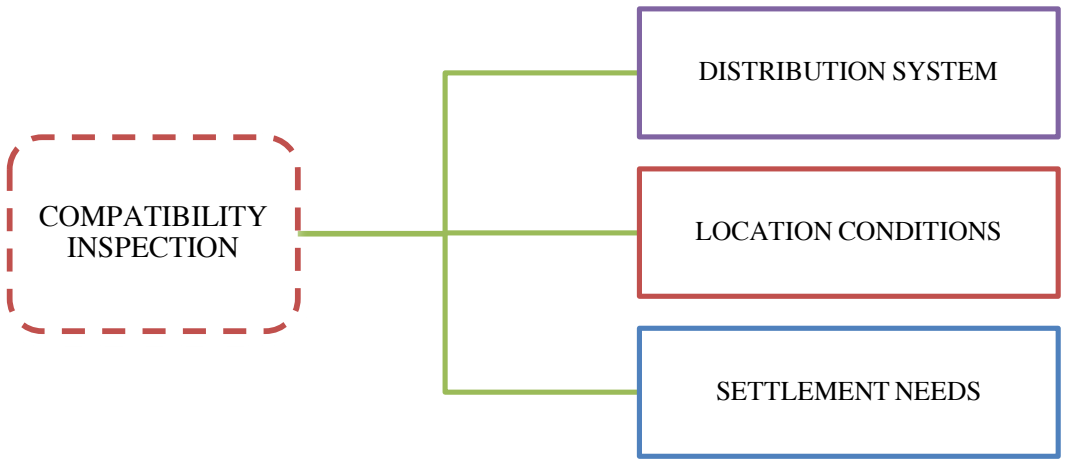


FIG. 14 - Schematic representation of the compatibility inspection in relation to the building performances

It is therefore necessary in this case, make a first study of knowledge and a preliminary draft through which operate on different assumptions to choose the best; after this you can then decide whether to continue:

1. entrusting the task of choosing to project practices, inserting compatibility as back-testing;

2. deepening the problem of choice by drawing up lists of performance, adequate and updated, for the main destinations of use that have been taken into account.

In renovation projects the central problem is instead the discomfort in choosing what to keep and what to change/transform, in relation to the required performance adjustments.
Each of these possibilities appears however as a more affordable option of the alternative ultimate demolition and reconstruction; although it must be admitted that in certain cases, demolish and rebuild appears to be the only solution to the problem, due to an obsolescence level too high and too difficult to adapt to standard levels required, unless you face major expenses.
Requalification, rehabilitation and reuse of the building stock obsolescent, it has several advantages over demolition and reconstruction; it is to have for example more rapid times of work execution, then the works themselves may also be conducted with bad weather conditions being these executed for the most part inside the structures and seem to obtain less social drawbacks compared to reconstruction.

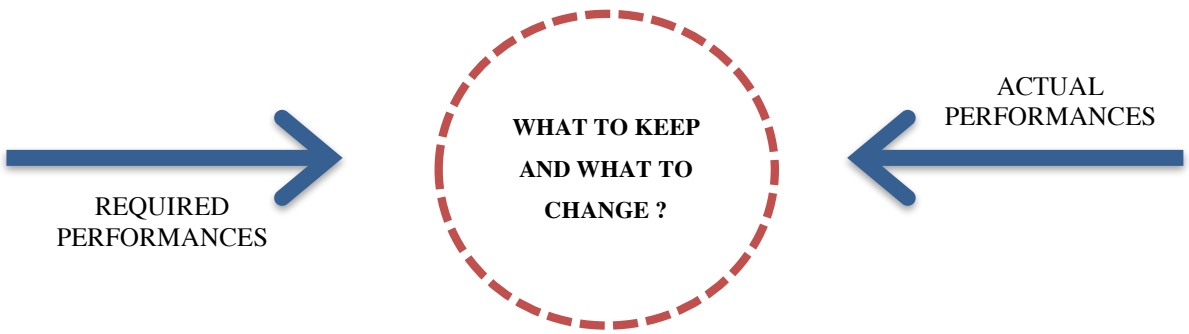


FIG. 15 – Required and actual performances

4.3.3 DECISION-MAKING AND ECONOMIC FEASIBILITY

Despite adaptive reuse in most cases seems an efficent and profitable choice, often demonstrates to be a costly strategy, mainly when the area is contaminated or envelopes are unsafe and defective.

In such cases the economic feasibility of reuse is influenced by the value of the asset, by land value and some other economic conditions.

These financial analysi may have a greater influence on the feasibility of one kind of reuse more than one other.

It's significantly as well to take into account progressively maintenance costs to budgets.

In some case incentives such as heritage bonds, grants and loans, tax incentives or property incentives may help to make development more viable.

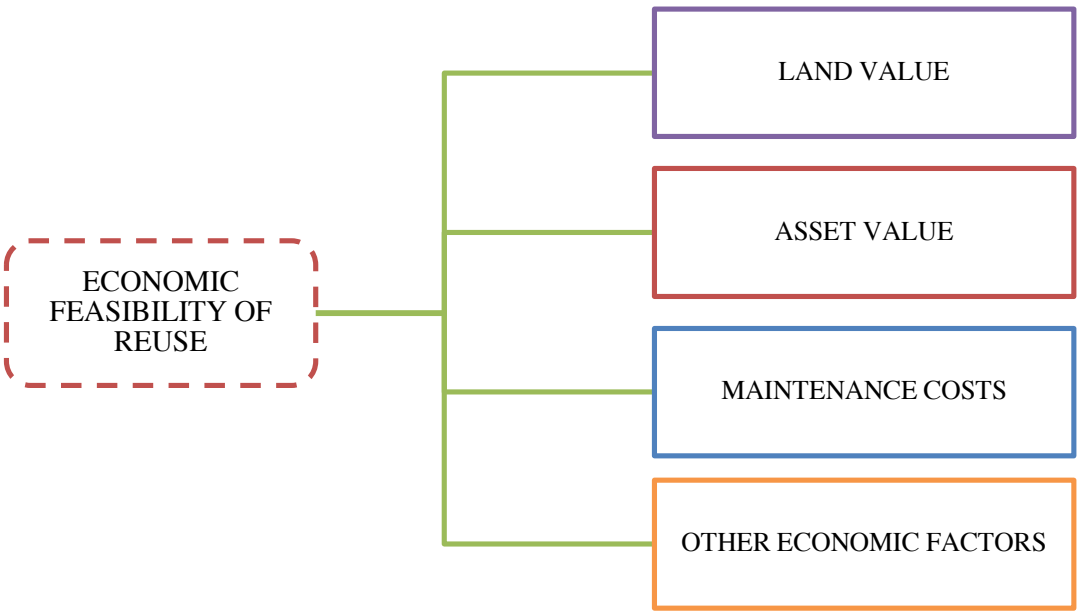


FIG. 16 - Schematic representation of the main economic factors that need to be taken into account in adaptive reuse feasibility

4.4 ADAPTABILITY: INCREASING BUILDING LIFE CYCLES

4.4.1 INTRODUCTION TO ADAPTABILITY

There are a large number of events that impact the performance of buildings over their lives, the diverse nature of human beings and their sometimes complex needs are often a catalyst for these events, which bring about various forms of change. The twenty-first century has brought with it economic and environmental drivers an era of unprecedented change in construction, these changes include: faster design and faster production to reduce client uncertainty and cost, much wider adoption of lean manufacturing approaches and increasing demand for infrastructure reconfigurable to future needs that are usually unpredictable. Buildings are often objects that exhibiting morphological change throughout their life, responding to an evolving context not static, that are left to age and be conditioned through periodic maintenance the future capacity for a building to respond to changing conditions is intrinsic to many of the initial design decisions that form the product architecture. However, one can design for future change in a way that reduces risk, future cost and effort, this is a growing challenge for designers, as sustainability and re-use become more critical. Adaptability is rarely considered in building design as a fully embodied design principle. Instead elements of adaptability are introduced periodically arising through unplanned, fragmented needs in time. There is an increasing need to include adaptability as a design principle for environmental and economic reasons to provide a building fit to current and future users in a way that allows them to carry out the diverse activities required. To recycle and conserve the earth's natural resources we have to encourage buildings that can be reused and reconfigured to changing needs, instead of being demolished at the end of its 'usable' life, with limited recycling of components. In an age of sustainability focussed on the carbon reduction, it is important that we maintain an understanding of the main characteristics which make places sustainable over the longevity of time. The creation of a more sustainable environment can be supported by adaptable design strategies that produce a level of building malleability, and which allow for a variety of changes to be accommodated. Currently, the majority of buildings are designed and constructed to suit a particular purpose at a certain time or as bespoke creations to suit a use or a function, with relatively little thought for their future use or

adaptation. Adaptability as a design characteristic embodies spatial, structural, and service strategies which allow the physical artefact a level of malleability in response to changing operational parameters over time. Looking backwards, the etymology of the word adapt can be traced to early in the fourteenth century Latin, aptus, meaning “suited, fitted” to adaptare meaning “to join”, through Middle French as adapter, to its English roots in 1610 to mean “to fit something for some purpose”. Nowadays with the term adaptability we refer to the capacity of a building to change in order to respond to the evolving demands of its users or its environment metamorphosis maximizing value throughout its lifecycle. There are various definitions of adaptability, however, the overriding message of many of these reflects the ability of a building to respond or to accommodate change, whether this is specifically focused on user needs, or some wider reaching criteria, such as the state of the market.

4.4.2 MAIN CHARACTERISTICS OF AN ADAPTABLE BUILDING

The adaptability refers to the time or to the lifecycle with the design consideration that buildings are dynamic systems that interact with a set of evolving endogenous and exogenous demands that require a capacity to accommodate change over time identifying the critical decision point in witch functional adaptation or the potentially convertibility can take place. This strategic shift reflects buildings, not as finished work removed from time, but as imperfect objects whose forms are in constant flux continuously evolving to fit functional, technological, and aesthetic change in society. Traditionally architects have been trained in the expectation to design for a relatively immediate client need with a specific set of functions identified as the starting point for a building design the adaptability of buildings is being investigated under two design strategies, pre-configuration, dealing with initial design choices and re-configuration, looking at subsequent changes in use, a better understanding of how buildings change over time is arguably crucial to informing architects concerned with extending the life of buildings. The manifestation of adaptability is a nuanced balancing of human, spatial and physical agency that is determined on a case by case analysis. The relational condition is constructed on the framework of two spectrums encompassing an approach to design: the top on (green to yellow) as a spatial approach and the bottom one (orange to blue) as a

component-based approach.

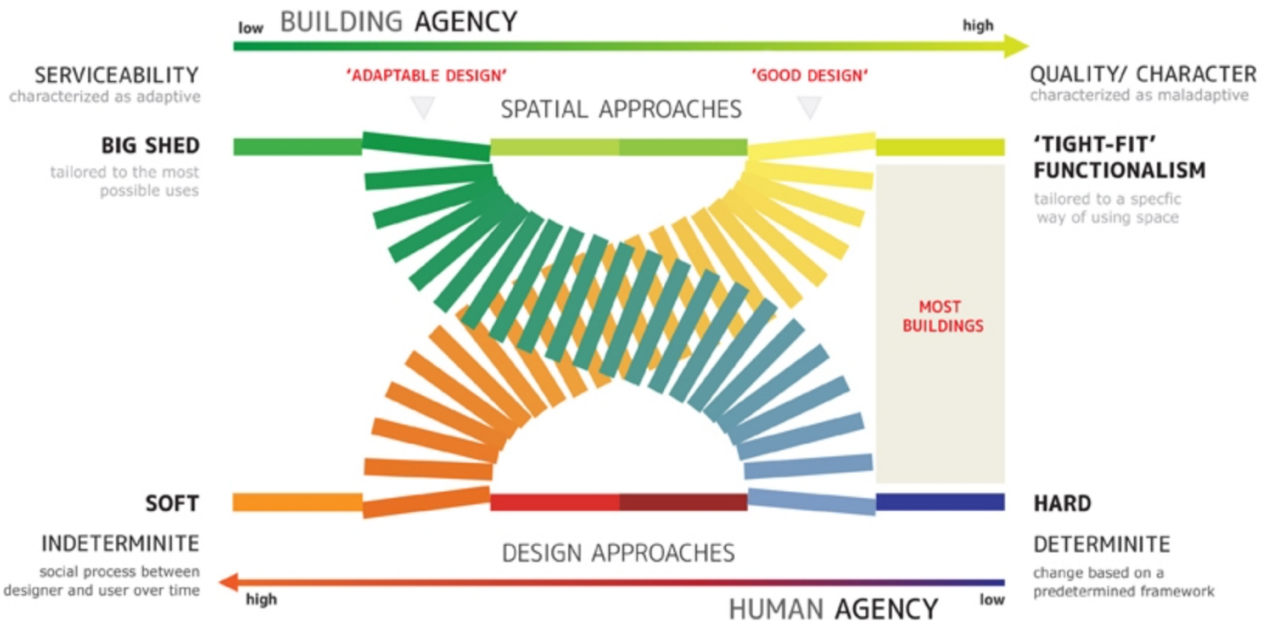


FIG. 17 – Diagram of two spectrums encompassing an approach to design

The diagram is constructed on the framework of two spectrums encompassing an approach to design, the top one as a spatial approach and the bottom one as a solution-based approach. The top and bottom arrows indicate the increasing and decreasing relationship between human and building agency in relation to the spectrums. Most buildings find themselves to the far right as a product of highly efficient methods and solutions tailored to an initial use. While what gets labelled as adaptable is often a bland, yet determinate solution and what gets labelled as good design is often a highly tailored yet more indeterminate design. It is at the intersection of the two perceptions where one can find a more nuanced and balanced approach.

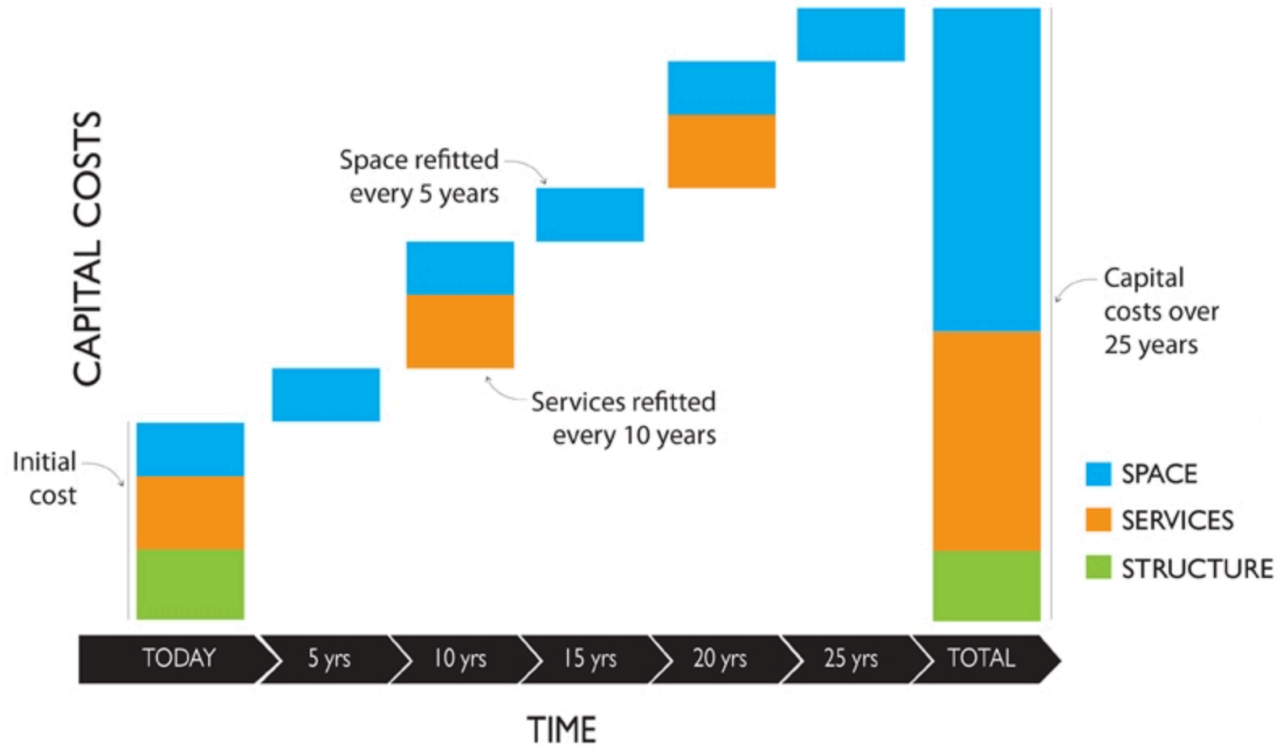


FIG. 18 - Schematic representation of the capital cost of components over the life of a building

The graphic which theoretically illustrates how the capital cost of components (grouped as three building layers) over the life of a building can be misconstrued by simply considering the initial (first generation) capital costs opposed to their reoccurring costs over time. The initial capital costs it's composed by the three layers, space, services and structure, the recurring capital costs for space plan is every 5 years and services every 10 years. The reality portrayed is that shorter cycle components have cheaper one-off costs, however given their short lifespan create more reoccurring costs accumulated over the life of a building.

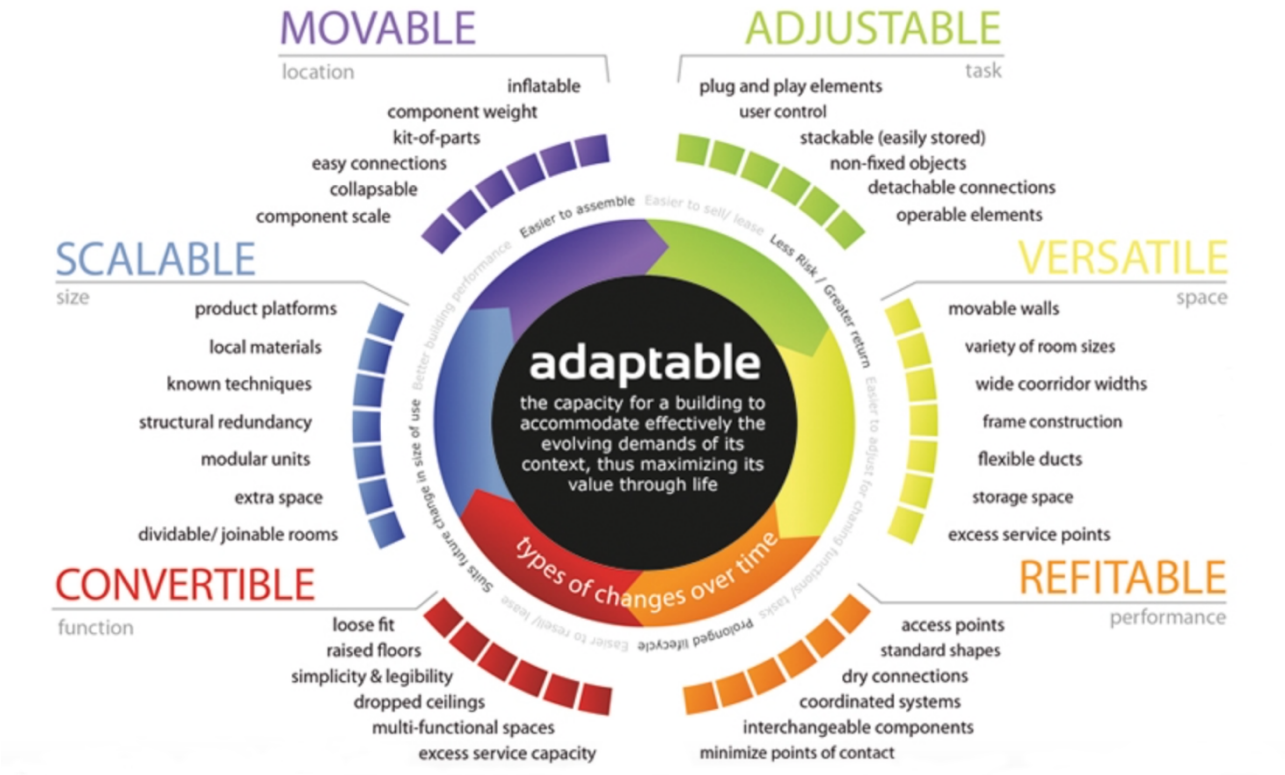


FIG. 19 - Schematic representation of the main adaptable features

The expected long life of buildings, the physical scale, the number of actors and components involved, and the symbiotic relationship with its contextual surroundings conspire to make buildings complex products in a fast changing world. The building stock with the existing building can offer adaptability of use and is a key resource that needs to be managed correctly in order for it to be sustainable as urban areas everywhere are experiencing problems related to poor use of buildings, and high flows of energy and materials. A distinction can be made between buildings that have been designed for adaptability and ones that have not. As a general perception in order to add adaptability into the design of a building there is a need to over specify mechanical and electrical plant sizing, floor area provision, structure and so on. This is combined with identifying physical aspects like durability of materials, floor height and span depth and even specific technical solutions for example moveable partitions, drop ceilings and raised floors. In addition, understanding the configuration of a building and the interactions between its

components can provide insight into how a building will endure change. The 'loose fit' approach is demonstrated as being advantageous in allowing a level of adaptability. It is shown that telecoms and computing technologies will undoubtedly change significantly and requirement for building space will change accordingly to time and progress. In the product manufacturing industry items become obsolete at such a high rate that the finished product pushed onto the market will be redesigned and improved to meet the users evolving needs, including shifts in technology and performance demands. Redesigning and releasing a new model is problematic with buildings, thus taking the view that a building is a static object delivered as a finished product is not just high-risk, but potentially catastrophic. Lack of consideration for future change, leads to high refurbishment costs, greater user disruptions, and lost opportunities along with a greater chance of the building becoming prematurely obsolete. Designing for adaptability looks to extend the longevity of a product by allowing it to accommodate changing circumstances. The definition adapted is the capacity of a building to accommodate effectively the evolving demands of its context, thus maximizing value through life suggest three existing approaches to developing an adaptable product: modular design, product platform, and mass customization. All three approaches include characteristics of modularity as a common denominator, modularity is applied as a design principle to guide the design of new products. Modularity can contribute to product adaptability and warrants consideration. The literature on adaptability often lists the interfaces between components as a critical design decision to ease future changes.

IT IS POSSIBLE TO OUTLINE SOME COMMON FEATURES OF THE ADJUSTABLE BUILDING:

- The design needs to address the lifecycle and not just the first use
- The range of solutions offered by the adaptable building must been known and carefully studied form the start
- A grid suitable to the function if defined simplifies the work, enables the components and changes coordination, gives coherence to the process and allows the growth and changes in a planned way
- A high degree of repeatability and reusability of the components will contribute to make the building more adaptable

- The use of easily maintained and readily available materials with simple construction details can make an invaluable contribution to building adaptability
- Refurbishment of existing buildings adding flexibility can have substantial benefits in terms of time, cost and assist in extending its useful life
- A service strategy allowing access, replacement, maintenance and up-date of the different parts is basic for a successful adaptable building
- It must be able to be changed over its life cycle to adapt to the inevitable evolving needs of it's end users. Buildings must remain efficient places to live and work to ensure real life-cycle value

THE CRUCIAL ASPECTS OF AN ADAPTABLE BUILDING ARE:

- STOREY HEIGHT
- BUILDING PROXIMITY, FORM AND PLOT DENSITY
- PLAN DEPTH
- STRUCTURAL DESIGN
- FACILITY CAPACITY
- VERTICAL CIRCULATION, SERVICING AND CORE DESIGN
- FIRE SAFETY DESIGN
- CLADDING DESIGN

4.4.3 FLEX: DETERMINING THE ADAPTIVE CAPACITY OF A BUILDING

The adaptive capacity of a building includes all characteristics that enable the building to keep its functionality through changing requirements and circumstances, during its entire technical life cycle and in a sustainable and economic profitable way. The adaptive capacity is being considered as a crucial component when looking into the sustainability of the real estate stock. Market developments show increased demands for flexibility and sustainability by users and owners of buildings. A direct connection can be made between adaptive building and sustainability. The longer a building can keep its functional life cycle instead of becoming vacant or being demolished, the more sustainable a building will be. One way of looking into this phenomenon is the more a building is flexible and able to adapt to changing user demands, the longer it will keep its functional life cycle. In 2014 was presented at the International Union of Architects World Congress a method to determine the adaptive capacity of buildings called FLEX 1.0 that it is base in total of 147 flexibility indicators were described with accompanying assessment values. The method combined existing knowledge on flexibility and sustainability, for the owner of a building in total 36 different indicators were formulated with associated values for assessing the spatial/functional flexibility characteristics, and 49 different indicators to assess the construction/technical flexibility characteristics of a building. For the user of a building in total 29 different indicators were formulated with associated values for assessing spatial/functional flexibility characteristics, and 33 different indicators for assessing construction/technical flexibility characteristics. The total addition finally led to 147 indicators to determine the adaptive capacity of a building from an owners and a users point of view. First of al the double flexibility indicators described for the owner and the user of the building as well, were combined together and clustering in five layers, the result is FLEX 2.0 more accessible and easy to use instrument. Flexibility indicators was reduced from 147 to 83 indicators, spread over five layers: Site, Structure, Skin, Facilities and Space plan/Finishing. A derived version of FLEX 2.0 was called FLEX 2.0 LIGHT in this method values are given for each assessment aspect of flexibility performance indicators. This lead with 17 indicators in total, a very easy and fast to use instrument to assess the adaptive capacity of a building. At these 17 indicators has been given a weight relative to the other indicators (weighting 1 - 3). Also each indicator is assessed

(assessment level 1 - 4).

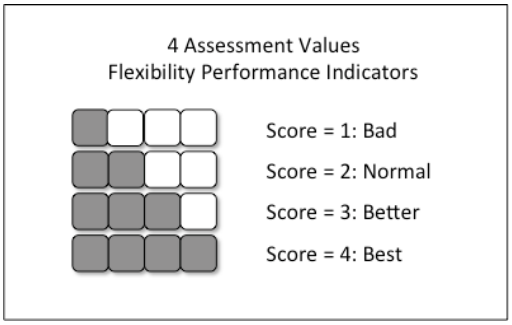


FIG. 20 – FLEX score

This leads to a score per indicator and summed up to a total Adaptability score with a minimum score17 and a maximum score of 204. In the example the total Adaptability Score is 95.

FLEX LIGHT 2.0				WEIGHTING	ASSESSMENT VALUE				SCORE
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR		Bad	Normal	Better	Best	
1. SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2. STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2	1				2
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1	1				2
3. SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurement & control	09(53)	Customisability and controllability of facilities	2	1				2
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2	1				2
		11(57)	Surplus capacity of facilities	3	1				3
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infill (fit-out)	3		2			6
	5.2 Access	14(73)	Access to building: horizontal routing, corridors, gallery	1		2			2
	5.3 Technical	15(77)	Removable, relocatable units in building	3	1				3
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting/detailed connection interior walls; hor/vert.	3				4	12

Total Adaptivity Score:	95
Adaptivity Class:	3

CLASS TABLE Adaptivity Scores	Score Range
Class 1: Not adaptive	17 - 54
Class 2: Hardly adaptive	55 - 92
Class 3: Limited adaptive	93 - 130
Class 4: Good adaptive	131 - 168
Class 5: Excellent adaptive	169 - 204

FIG. 21 – Flexibility performance indicator and class table

FLEX 2.0 LIGHT is a practical and easy to use light version of the assessment method

with a limited number, 17 of the most important indicators. For our assessment we use this type of tool to understand the effective adaptability score of our case studies. At the same time in two separate research projects this method was used for an evaluation with experts in practice. A research project is the development of a school building; the other project concerns the development of office buildings. The three different instruments derived from FLEX 2.0 are described and combined with each other to model the frame for the next version of a general and easy to use instrument to formulate the demand for adaptability on the one hand and assess the supply of the adaptability of buildings on the other hand.

FLEX 3.0 COMBINATION 3 ADAPTABILITY ASSESSMENT INSTRUMENTS				INSTRUMENT			DYNAMICS		
LAYER	Sub-layer	Nr	Flexibility Performance Indicator	Light	Schools	Offices	T	U	
1. SITE		1	Surplus of site space	x			x		
		2	Expandable site / location		x	x	x		
		3	Multifunctional site / location			x	x		
2. STRUCTURE	Measurements	4	Surplus of building space / floor space	x	x	x	x	x	1
		5	Available floor space of building			x	x	x	
		6	Size of building floors			x	x	x	
		7	Surplus free of floor height	x	x	x	x	x	2
		8	Measurement system; modular coordination		x		x	x	
		9	Horizontal zone division / layout			x	x	x	
	Access	10	Access to building: location of stairs, elevators, core building	x	x	x	x	x	3
		11	Presence of stairs and/or elevators			x	x	x	
		12	Extension / reuse of stairs and elevators			x	x	x	
	Construction	13	Surplus of load bearing capacity of floors	x		x	x		
		14	Shape of columns			x	x	x	
		15	Positioning obstacles / columns in load bearing structure		x	x	x	x	
		16	Positioning of facilities zones and shafts			x	x	x	
		17	Fire resistance of main load bearing construction			x	x		
		18	Extendible building / unit horizontal	x	x		x		
		19	Extendible building / unit vertical	x	x		x		
		20	Rejectable part of building / unit horizontal		x		x		
		21	Insulation between stories and units			x	x	x	
3. SKIN	Facade	22	Dismountable facade	x		x	x		
		23	Facade windows to be opened		x	x	x	x	
		24	Day light facilities		x	x	x	x	
		25	Location and shape of daylight facilities		x		x	x	
		26	Insulation of facade			x	x		
4. FACILITIES	Measure & Control	27	Measure and control techniques			x	x	x	
		28	Customisability and controllability of facilities	x	x	x	x	x	4
	Dimensions	29	Surplus of facilities shafts and ducts	x	x	x	x	x	5
		30	Surplus capacity of facilities	x		x	x	x	
		31	Modularity of facilities		x	x	x	x	
	Distribution	32	Distribution of facilities (heating, cooling, electricity)			x	x	x	
		33	Location sources of facilities (heating, cooling)			x	x	x	
		34	Disconnection of facilities components	x	x		x	x	
		35	Accessibility of facilities components			x	x	x	
		36	Independence of user units			x	x	x	
5. SPACE PLAN	Functional	37	Multifunctional building		x		x		
		38	Distinction between support - infill (fit-out)	x	x	x	x	x	6
	Access	39	Access to building: horizontal routing, corridors, gallery	x	x	x	x	x	7
	Technical	40	Disconnectible, removable, relocatable units in building	x	x		x		
		41	Disconnectible, removable, relocatable interior walls	x	x		x	x	
		42	Disconnecting/detailed connection interior walls; hor/vert.	x		x	x	x	
		43	Possibility of suspended ceilings			x	x	x	
		44	Possibility of raised floors			x	x	x	
				17	21	35	44	32	

FIG. 22 – FLEX example example of the table compilation

In 2015 was born FLEX 3.0 framework has in total 44 flexibility performance indicators that are all applicable for assessing the transformation dynamics while 32 of them are also suited for assessing the user dynamics of a building. Also financial effects of the costs and benefits of flexibility measures will have to be subject of further research, especially to

convince owners and developers of buildings. Some indicators probably require lower initial investments than others. The relation between the investments and the extent of adaptive capacity will have to be studied, with a better judgement about the financial consideration to invest in adaptive capacity as a result.

5. THE COLLECTION OF CASE STUDIES

In the context of this research work in order to extend the experience or reinforce what is already known from previous research, as already mentioned in the introductory chapter, is analyzed the Italian experience of design and management of the most significant projects, for better or for worse, of adaptive reuse between the existing ones and that can become a source of inspiration and suggestions for the adoption of innovative models in our regions.

For this reason, in this chapter will be defined firstly the selection criteria used in the choice of the case studies for the collection of reference data, and subsequently will be represented and mapped the main and most significant adaptive reuse projects between those that have been collected.

5.1 THE SELECTION CRITERIA PROCESS

In the collection of case studies have not been applied many selection criteria because, being already a particular theme that of the adaptive reuse of industrial buildings, we tried to gather the largest possible number of examples in order to be able to extrapolate an adequate quantity and quality of data for the research.

The case studies that have been selected at first were referring to industrial reuse, including those projects where structures have been torn down completely and therefore has been only reused the plot of land where the industry lay.

In a second moment this type of cases has been excluded as there is no reuse of spaces and surfaces, there is no adaptation to existing structures and so the design approach of adaptive reuse does not persist.

The sample, proceeding in this sense, has been reduced by about 25% and it is only made up of case studies on projects of reuse of industrial buildings in the Italian territory.

A further reduction of the sample by the 10% has been applied with respect to the case studies of which are not found adequate information in line with the parameters of the research.

After applying the proper selection procedures, the sample resulted reduced by approximately 35% compared to the initial sample, going from about 90 case studies to 55/60 realized projects of adaptive reuse in line with the parameters.

5.1.1 ANALYSIS, ASSESSMENT AND GROUPING TOOLS

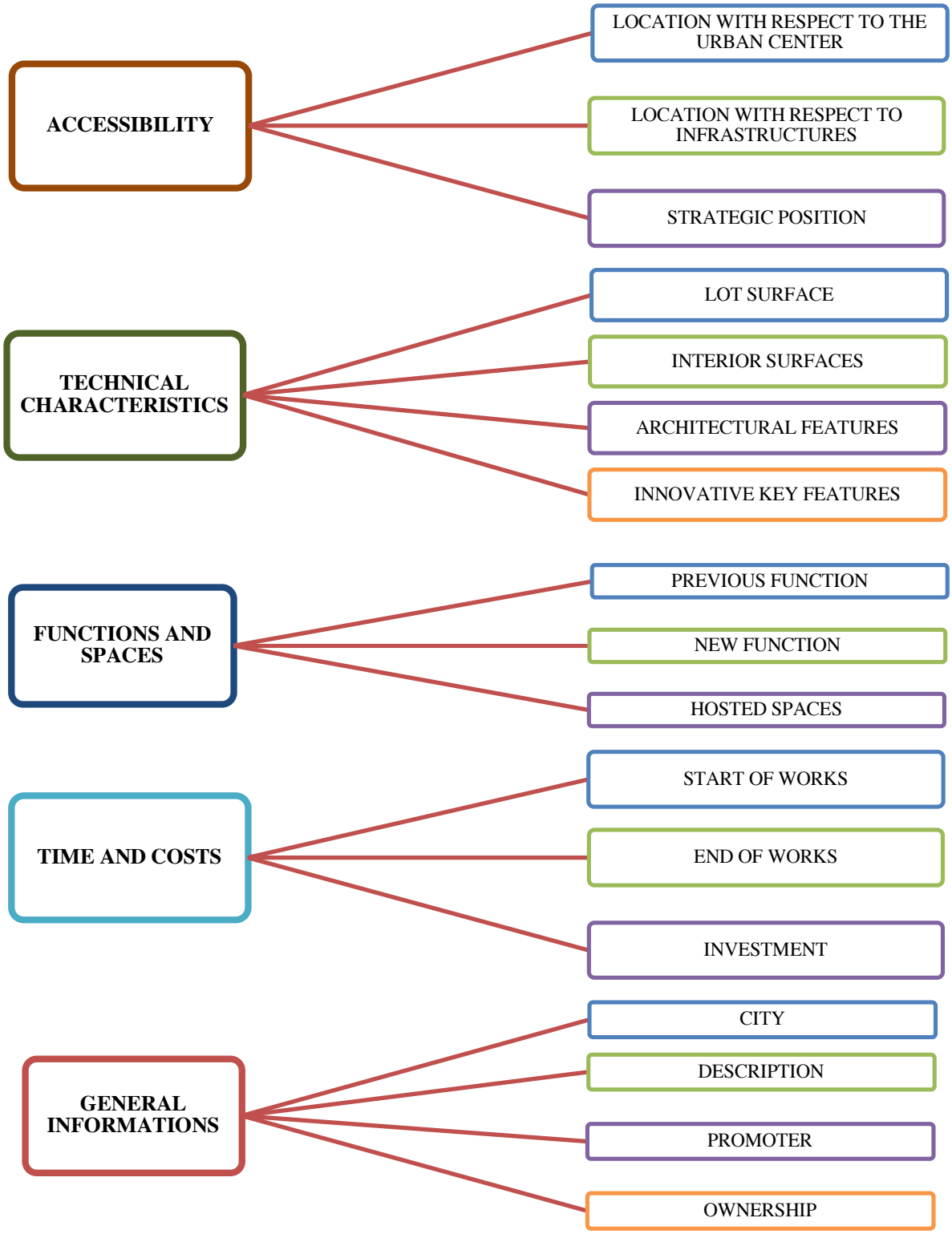
In order to analyze and evaluate in a more homogeneous, schematic and analytical way the case studies that have been collected has been created a table on which have been crossed the different cases with data processing parameters.

Vertically, in the first column, are rapresented the case studies subdivided by regions while the parameters are indicated horizontally divided into macro-groups which in their turn are further subdivided into subgroups.

REGION	N°		CASE STUDY	GENERAL INFO			
				CITY	DESCRIPTION	PROMOTER	OWNERSHIP
PIEMONTE	1	1	MUSEO DEI CAMPIONISSIMI	NOVI LIGURE -AL		REGIONE PIEMONTE	PUBLIC
	2	1	CASA ZERA	TORINO	Casazera is the living lab developed under the Ecostruendo research project. It is a prefabricated living prototype dry wood, with low environmental impact for the urban redevelopment of disused industrial buildings.	CITTA' DI TORINO E DE-GA SPA	PUBLIC/PRIVATE
	3	1	QUARTIERE AURORA	TORINO	A building constructed in the early twentieth century by a great Piedmontese architectural signature, Pietro Fenoglio, historical site of the tannery Gilardini first and then the Choccolat Tobler. The rehabilitation of the former factory Tobler took place under two seemingly contradictory paradigms, conservation and innovation, combined to result in avant-garde architecture in a still relatively uncharted territory.	DE-GA SPA	PRIVATE
	4	1	LA CASA DEI PRODUTTORI	TORINO	The headquarters of Film Commission Torino Piemonte is a structure of 9,400 square meters of total area, of which 6,000 meters are covered and 1,200 square meters reserved to service companies, originated from the reclaiming of former wool mill Cologno, a start industrial structure 900, after four years works for the recovery and the conversion of the industrial area that keep the original structural elements such as the roof to "shed" or base of the old chimney, the perimeter walls with exposed brick and original windows.	FILM COMMISSION TORINO PIEMONTE (REGIONE PIEMONTE)	PUBLIC
	5	1	MUSEO ETTORE FICO	TORINO	The new Ettore Fico Museum is located inside the former industrial complex INCET via Cigna, in the north of the city. Next to the Docks Dora, home to countless artists' studios, the MEF is part of a social context of great interest and of great multiethnic vibrancy. The MEF proposes a cultural offer with an international character through the realization of exhibitions, cultural events, seminars, round tables and meetings, aimed at affecting a large number of people concerned to modern and contemporary art, without excluding art raids ancient.	FONDAZIONE ETTORE FICO	PRIVATE
	6	1	FONDAZIONE MERZ	TORINO	Named after Mario Merz, the Fondazione was established in 2005 as a centre for Contemporary Art with the intent to host exhibitions, events, education-related activities, and to further research and explore art. The Fondazione's building, a former heating plant for the Lancia factory, a fascinating example of industrial architecture from the 1930s owned by the Città di Torino and given in concession to the Fondazione Merz. The refurbishment and restoration, supported by both private and public funds (City of Torino and Region Piemonte), has affected the whole building, defining the interior spaces and taking into account the cultural purposes the Fondazione intends pursuing. The building has an overall area of 3,200 mq, of which 1,400 for an exhibition area over three floors and including an external area.	FONDAZIONE MERZ - COMUNE DI TORINO/REGIONE PIEMONTE	PUBLIC/PRIVATE
	7	1	FABBRICA DELLA RUOTA	BIELLA	The wool factory Zignone, better known as "Factory of the Wheel", was built around 1878. It is one of the best known examples of industrial archeology in Italy, having preserved the nineteenth-century multi-storey plant Manchesterian type and the system "teledinamico" of transmission of energy. It is at the center of the trail "La Strada della Lana", linking Biella to Borgosesia. The Textile Industry Documentation Centre includes a specialized library of over 1,500 volumes and an archive consists of 58 funds from industry. In "generalist" library it is preserved about 5000 volumes. In the ground floor there are several restored and working machinery, as well as tools associated with textile manufacturing. In the conference room it is set up a didactic exhibition that illustrates the operation of the woolen mill.	COMUNE DI PRAY/BIELLA	PUBLIC
	8	1	FONDAZIONE PISTOLETTO	BIELLA	Cittadellarte is an art and creativity laboratory founded in 1998 by the artist Michelangelo Pistoletto in a disused textile mill by the river Cervo in Biella. The name Cittadellarte incorporates two meanings: that of the citadel or rather an area where art is protected and well defended, and that of the city, which corresponds to the idea of openness and interrelational complexities with the world. Cittadellarte is a great laboratory, a generator of creative energy that generates unedited processes of development in diverse fields of culture, production, economics and politics. The activities of Cittadellarte pursue a basic objective: to operationally take artistic interventions into every sector of civil society to contribute responsibly and profitably to address the profound changes of our age.	FONDAZIONE PISTOLETTO - COMUNE DI BIELLA/REGIONE PIEMONTE	PUBLIC/PRIVATE

TAB.1 - Representation of a part of the table for the processing data

5.1.2 THE MACRO-PARAMETERS AND SUBGROUPS FOR THE COLLECTION OF INFORMATION



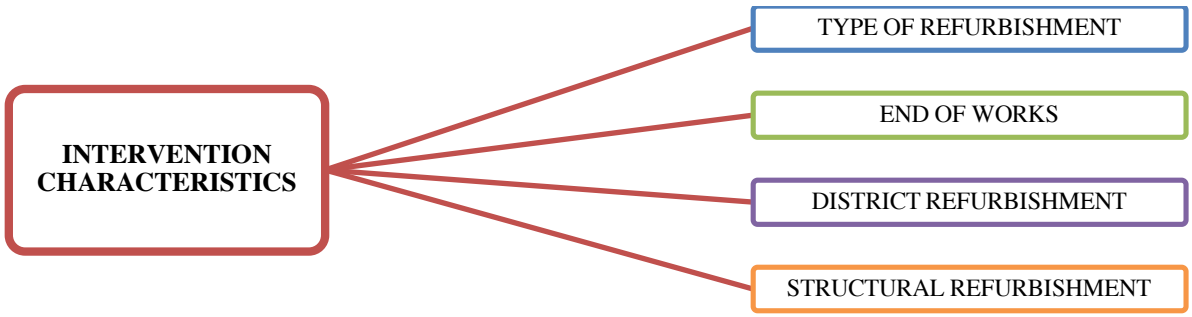


FIG. 23 – The macro-parameters and the subgroups for the collection of information

- GENERAL INFORMATIONS: a generic description of the building, its activities and the main bodies involved.

In this section are collected information about the promoters intended as funders of the refurbishment and on the ownership type, differentiating between public and private in order to better understand if one type of management is better than the other.

- FUNCTIONS AND SPACES: in this part are indicated the spaces, the associated functions and the overall subdivision of the structures.

Furthermore, are indicated the two main intended uses, before and after the redevelopment in order to be able to have a general idea of what are the main functions that take such buildings after the restoration works.

- TECHNICAL CHARACTERISTICS: in this subdivision are indicated the sizes of the lot affected by the redevelopment with eventual green areas and parks, and the sizes of interior floors and spaces. Are described, in addiction, the architectural characteristics of the building and its interior spaces, and the key innovative features that can be reference points and suggestions for future similar projects.

- ACCESSIBILITY: the information collected in this section concern the location of the building with respect to the urban centre and to the infrastructures in order to understand if the position can be considered strategic or not in relation to its accessibility.

This parameter must be interpreted differently in each case as much depends on the conformation of the territory.

- TIME AND COSTS: in this macro-group are indicated the timing of construction works and

the total investment costs in order to understand in the first place, when you ran the redevelopment and if there are positive or negative affinity with projects dating from the same time period, and secondly the amount of money that has been spent in order to have the reference figures for future similar projects.

- INTERVENTION CHARACTERISTICS**:** in this last sector are listed a series of informations about the type of refurbishment and intervention amenities.
Do we gather information on the type of retraining, functional and energy or only functional, on the impact of the redevelopment on the district, and if it is part of a process of urban regeneration or not, and on the technical characteristics of the intervention on the preexisting structures in order to understand what structures have been recovered and wich are those of new construction.
Is also specified how the disused industrial site appeared before the redevelopment and if it was required site remediation/disposal of harmful material, or was not even requested the change of destination of use.

5.2 DESCRIPTION OF THE CASE STUDIES

5.2.1 TERRITORIAL ANALYSIS

The sample of case studies consists of adaptive reuse projects spread throughout the Italian territory. Have been collected cases in many Italian regions, although it is clear the difference in thermal quantities between northern Italy and central-south, which significantly reflects what has been the industrial past of the various territorial areas.
In fact, the region with the highest number of projects is Lombardy with about 18 case studies analyzed, followed by 'Emilia Romagna with 9 cases and Piedmont with 8.

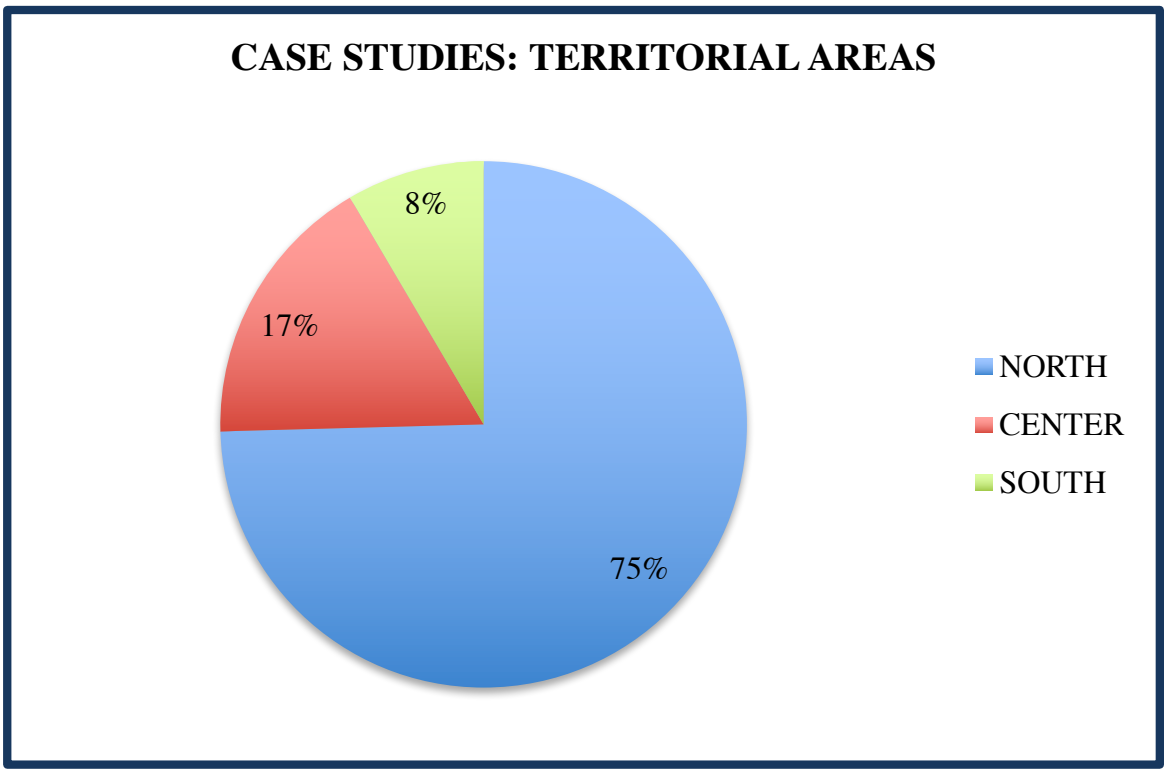


FIG. 24 – Case Studies divided by territorial areas

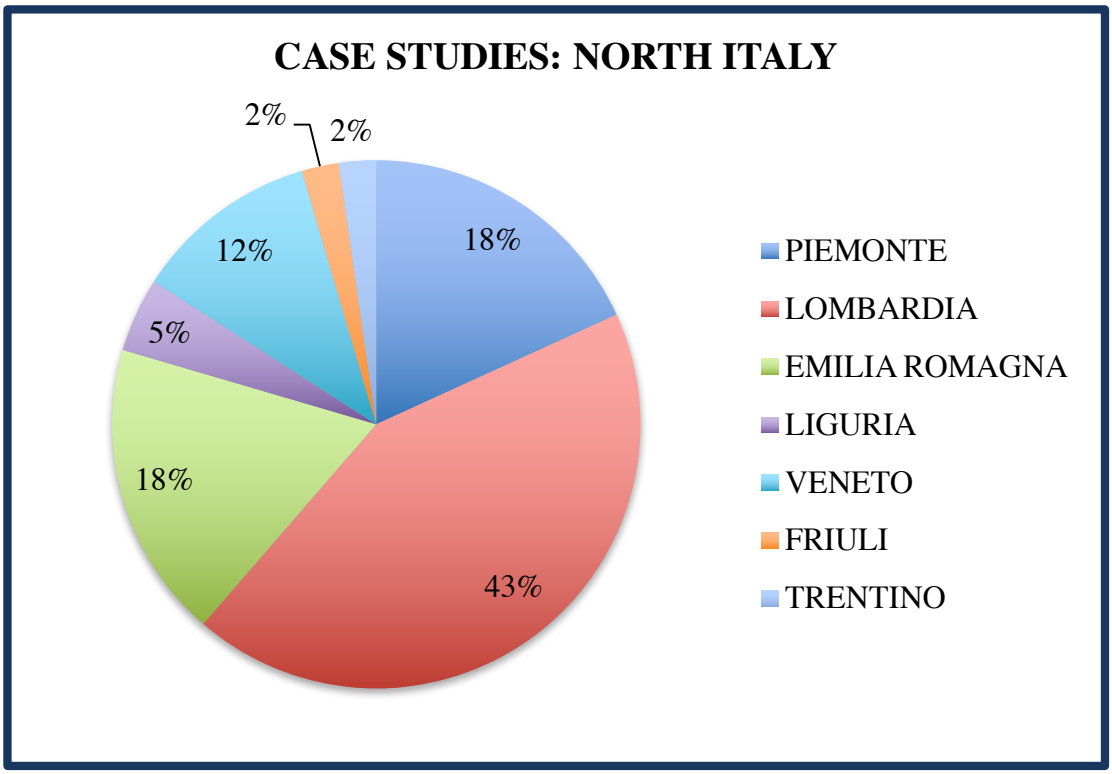


FIG. 25 – Case Studies in North Italy divided by regions

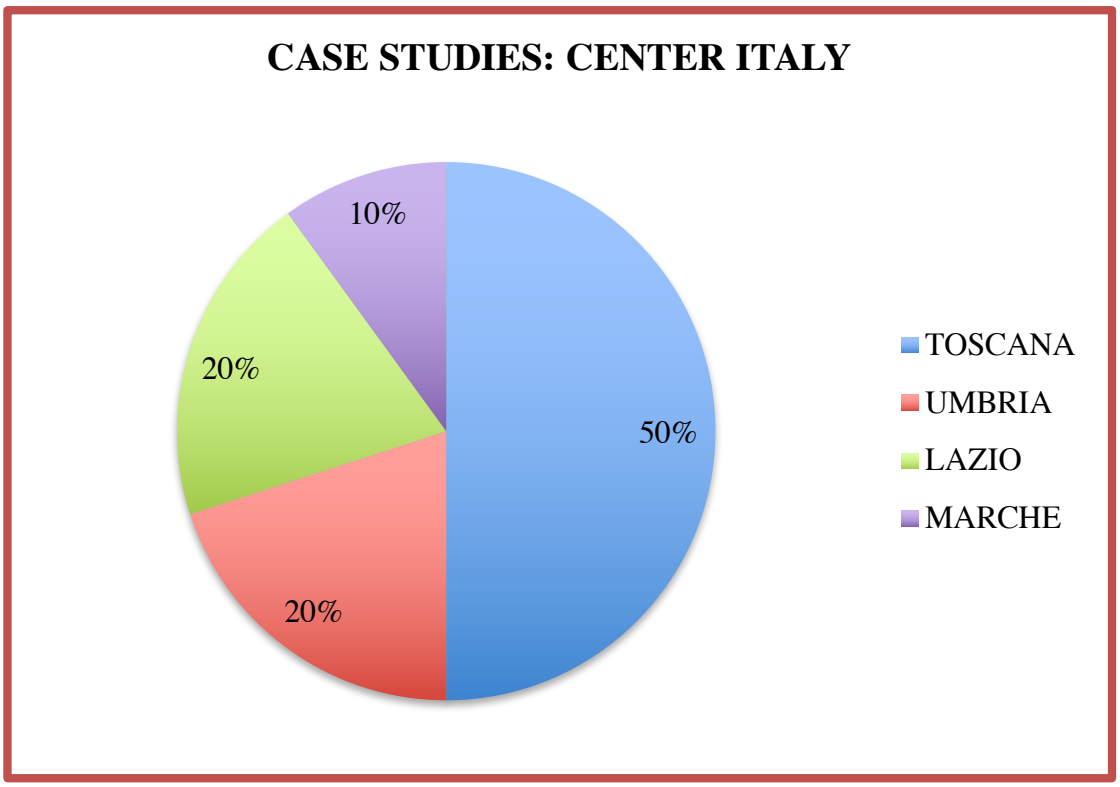


FIG. 26 – Case Studies in Center Italy divided by regions

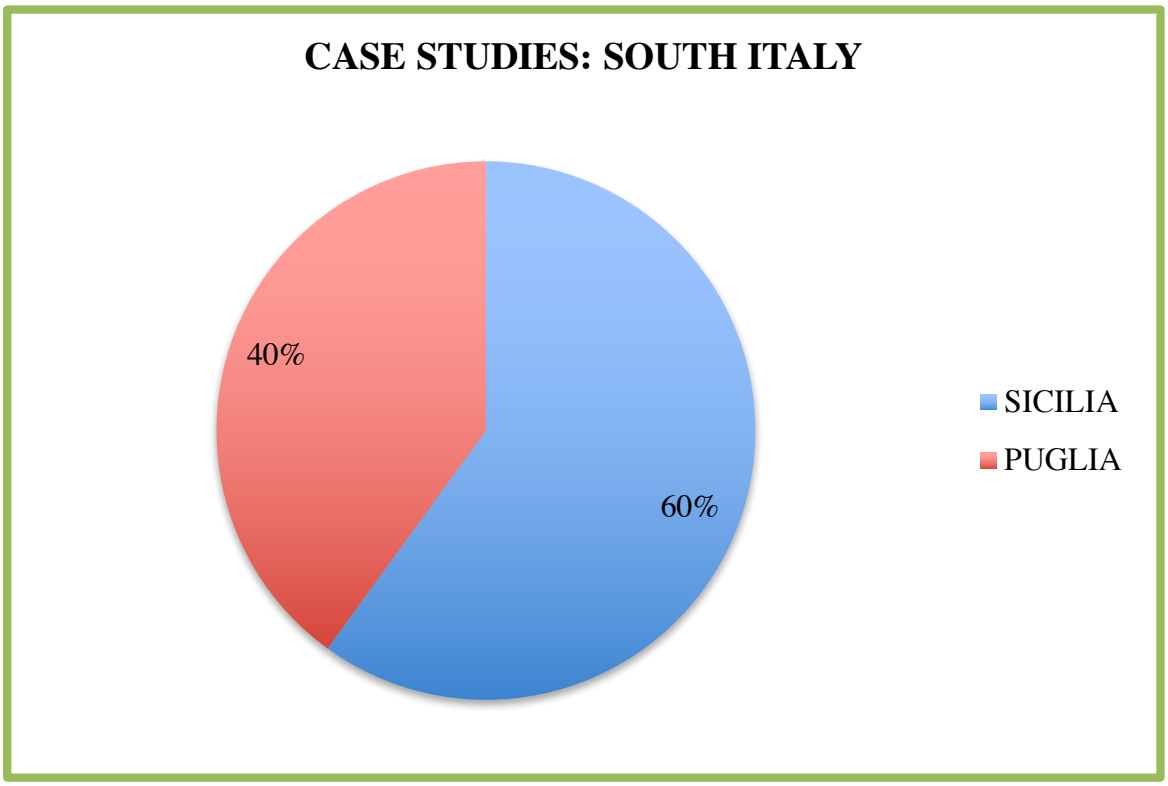


FIG. 27 – Case Studies in South Italy divided by regions

Regarding the central Italy, the region with the largest number of case studies collected is Tuscany while Lazio has only a two. No significant projects were found in Abruzzo and Molise.

In southern Italy the case studies considered are much fewer in number, in fact the only concern Sicily and Puglia. Instead were not found / analyzed data concerning Campania and Sardinia although they have a fairly large surface area and an important industrial past.

As for individual metropolitan areas, Milan is without any doubt the city with the greatest number of examples of reuse of industrial buildings (15), follows in a way significantly separated Turin (5) while in the south of Italy Catania area seems to be the most vibrant in this field.

In central Italy, the municipality of Prato is very active in the field of redevelopment of abandoned industries, as opposed to Rome, which would seem to not be interested in a decisive manner as the main Italian cities to the reuse process.

Instead in South of Italy were not found / analyzed data from large metropolitan areas such as Bari, Naples and Palermo due to lack of information.

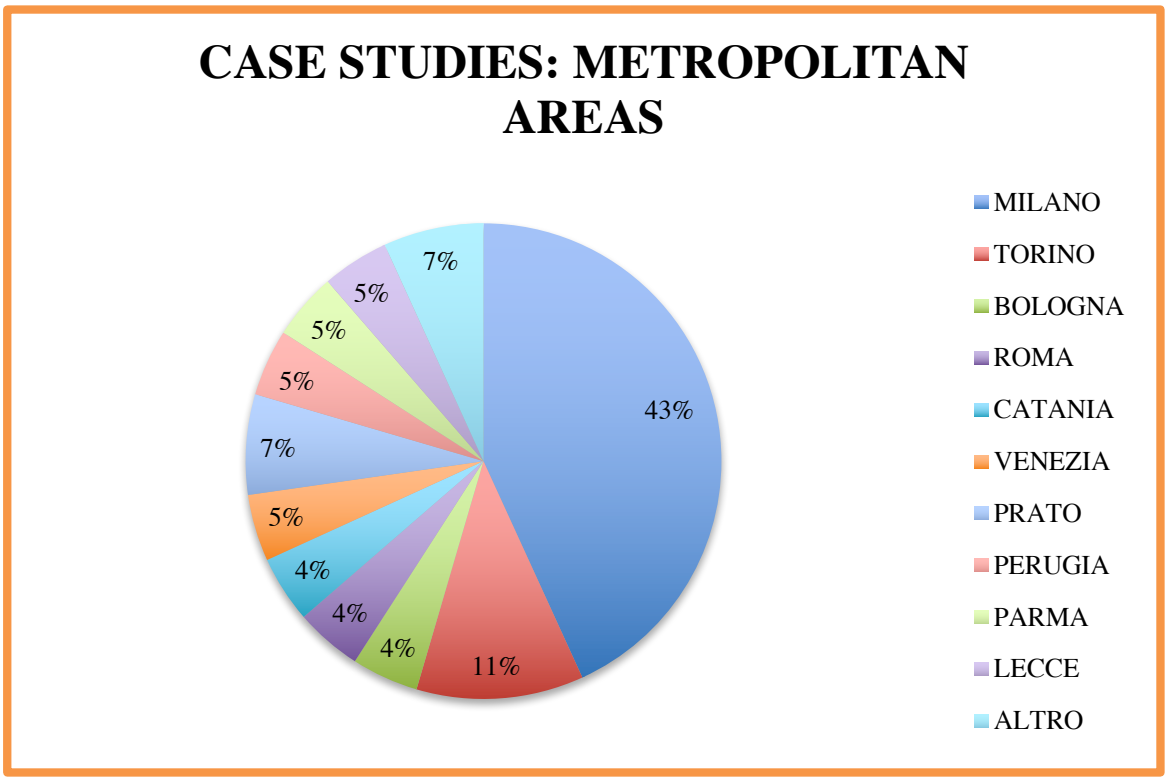


FIG. 28 – Case Studies divided by Metropolitan Areas

5.2.2 PREVIOUS USES AND NEW INTENDED USES

The sample of the data collected, for what concerns the function of the industrial building originally, outlines the territorial areas of functional and productive agglomeration in line with the industrial past of the different Italian regions.

In fact, in Piedmont, more precisely in the city of Biella and Turin, we find three former woolen mills dating back to 1800 that have been retrained and returned to their respective cities.

This type of building tends to grow on several floors, resulting very limited heights and a structural pattern that restricts partially the usability of spaces and the adaptability to new functions.

PHO. 10 – Fondazione Pistoletto – Biella, Piemonte

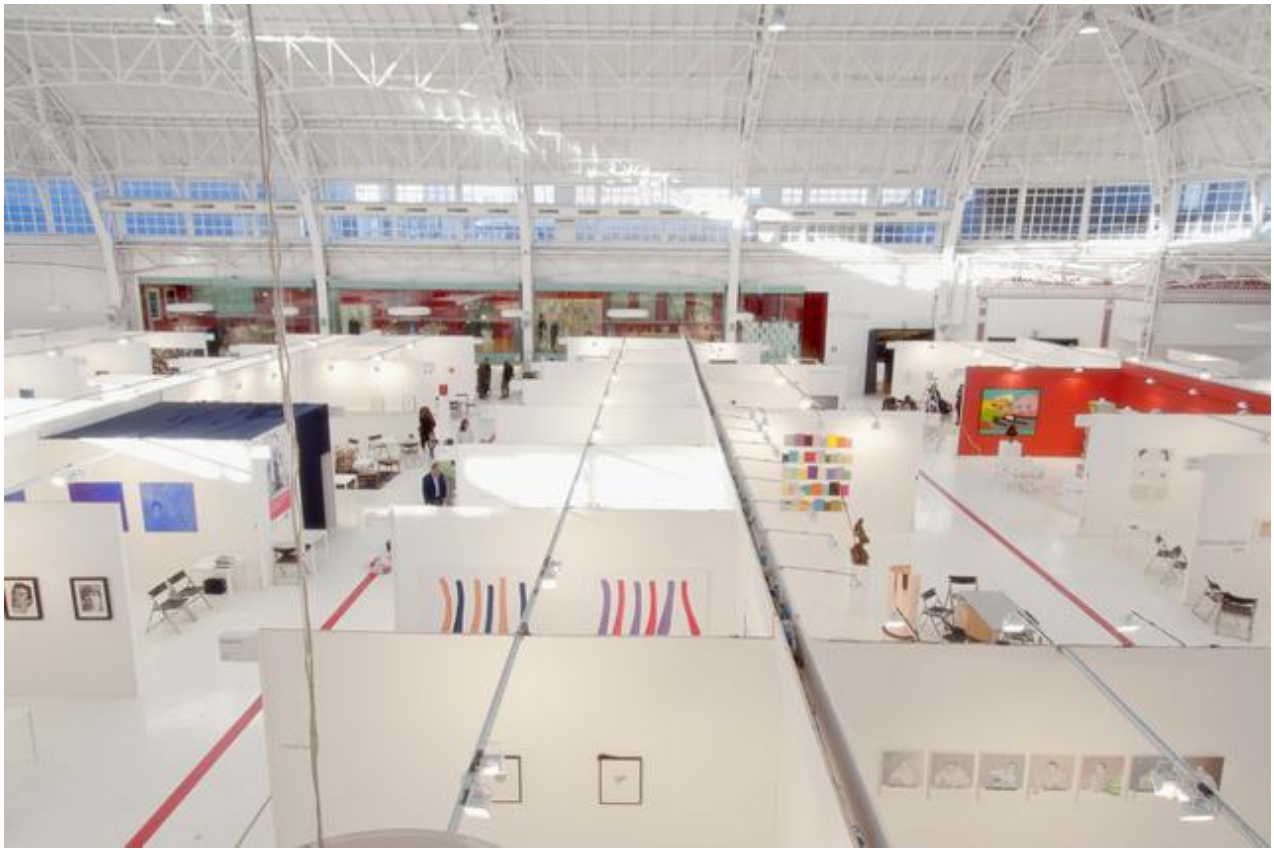
PHO. 11 – Università delle Idee - Fondazione Pistoletto – Biella, Piemonte

In Milan, in addition to large complexes of the metallurgical and steel industry, we find several examples of war industry or that in times of war have been adapted to wartime production.

Among the various examples we find the arsenal in Zona Tortona turned into fashion and craft workshops, the grain silos transformed by a famous Italian fashion designer in Fashion Museum and the Milanese refrigerators for storage and manufacture of the ice that were transformed at first in ice rink and then into multipurpose spaces for culture and creativity (2007).

PHO. 12 – Frigoriferi Milanesi – 1920 Milan, Italy

PHO. 13 – Frigoriferi Milanesi, ice rink – 1957 Milan, Italy



PHO. 14 – Palazzo del Ghiaccio, Exhibition of Contemporary Art – 2012 Milan, Italy

Moving towards the center of Italy, in our sample of case studies in the province of Prato there is a marked presence of textile factories and tanneries two of which have been converted into museums of what they once used to produce.

Architecturally speaking the buildings are very similar to wool mills Biella, with brick walls and the roof truss wood, relatively high heights and, unlike wool mills, these buildings tend to grow in length and not in height; are then obtained long but narrow spaces, thus lowering the level of adaptability of the spaces.

PHO. 15 – Textile industry – Museo del Tessuto – Prato, Tuscany

PHO. 16 – Today - Museo del Tessuto – Prato, Tuscany

PHO. 17 – Today - Museo del Tessuto – Prato, Tuscany

Finally, in southern Italy and more precisely in Catania, there are two former sulfur refineries that were transformed into multi-purpose areas: the Trade Fair Centre The Chimneys and Zo Culture, the latter offers different spaces devoted to performing and visual arts and not just.

The sulfur refineries seem to be brought to support functional conversions of this type, ie a single complex with different spaces and functions within itself.

Architecturally these industries are composed of several bodies of different sizes and proportions, and for this reason the different functions required by multifunctional centers are able to adapt in a more uniform manner to existing spaces.

PHO. 18 – Zo Culture – Catania, Sicily

PHO. 19 – Inside the auditorium Zo Culture – Catania, Sicily

If we analyze the case studies referring to new functions we can markedly see that the most carried out functional conversions are socio-cultural, in fact, the sample consists of more than 50% of case studies concerning socio-cultural centers.

The other 50% is divided more or less in equal parts between mixed use, ie buildings that contain several functions inside them (commercial, offices, residences, etc.), residential, commercial and offices.

Regarding the categories hospitality (hotels, Restaurants, etc.), institutional and Research and Development, have been collected data concerning only five case studies: a hostel, a primary school, a universitary pole and two R&D centers.

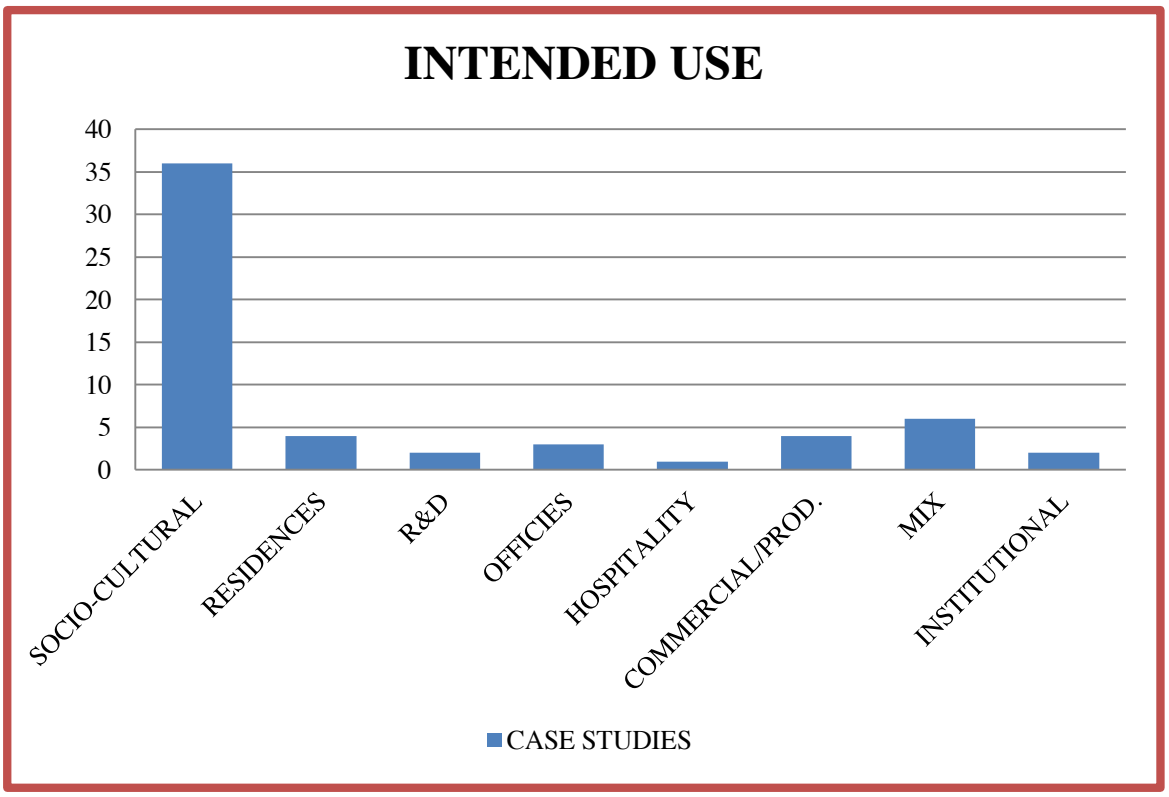


FIG. 29 – Case Studies divided by intended uses

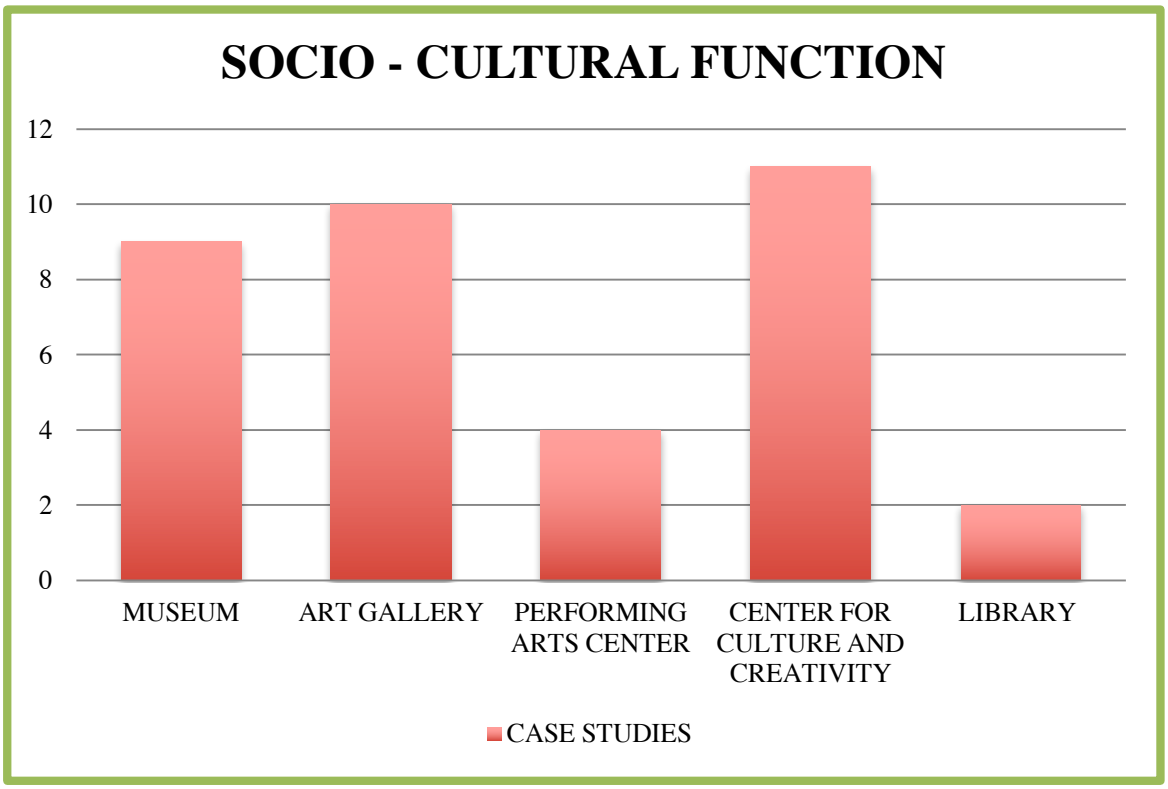


FIG. 30 – Case Studies divided by socio-cultural functions

Analyzing more in deep the socio-cultural category, it includes museums, art galleries, performing arts centers (such as theaters and auditoriums), culture and creativity centers, and libraries.

From the data extrapolated from the sample can be noted that the main areas of use are museum (25%), exhibition gallery (27%) and center for culture and creativity (28%); this last category includes buildings to whose inside there are multiple socio-cultural functions such as libraries, laboratories, offices, exhibition spaces, theaters, etc.

Less widespread are the centers for performing arts (11%), such as auditoriums and theaters, and libraries (6%).

5.2.3 PROMOTERS AND LENDERS

Another possible analysis is that regarding the different type of funding of the rehabilitation projects, distinguishing between public, private, and private-public partnership (PPP).

The number of case studies is divided by type of developer or funder between public and private almost equally (in the order 44% and 47%), while cases of PPP relate only to 9%; in the analysis that we are doing we always refer to our sample of case studies and so the number of projects founded by public, private or PPP is considered as a 100% individually.

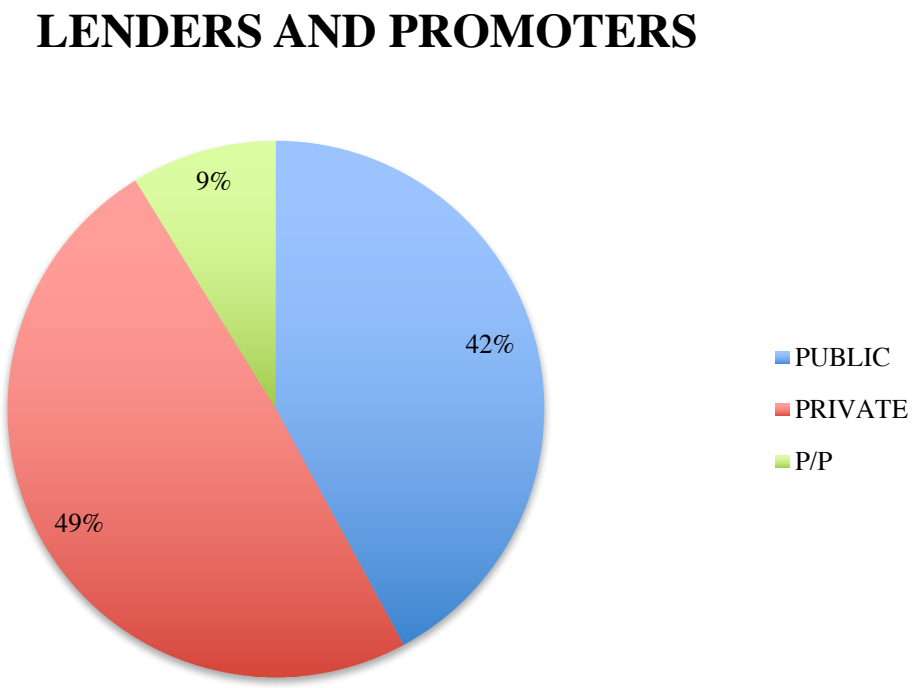


FIG. 31 – Case Studies divided by lenders and promoters

Superimposing the data at territorial level with those related to the type of promoter can be noted that in northern Italy over 52% of the interventions of reuse of industrial buildings are made by private companies, 36% by public bodies, and 12% from Public-Private Partnerships. The latter type promoter appears to be performed only in the North of Italy, in fact there is no data in central and southern Italy. This data from a certain side could

reflect the full the current situation in Italy, since the PPP is a is a form of cooperation present in Italy by not much time, and then in the center-south is not yet as widespread.

In central Italy 40% of the projects is carried out by the public and 60% by private companies, while in southern Italy all projects are financed by public bodies.
This latter finding further confirms the considerations relating to the dissemination of the PPP, in fact we could say that in southern Italy the re-use of this type of buildings is not seen by private companies as a possible investment, this is also due to the lesser amount of industrial buildings present in the territory.

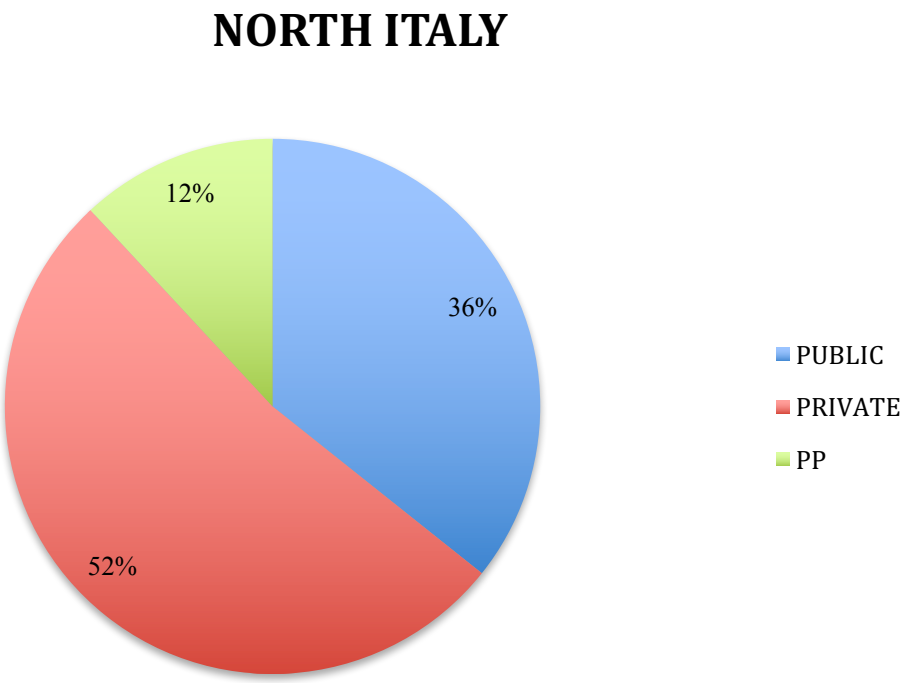


FIG. 32 – Case Studies in North Italy divided by lenders and promoters

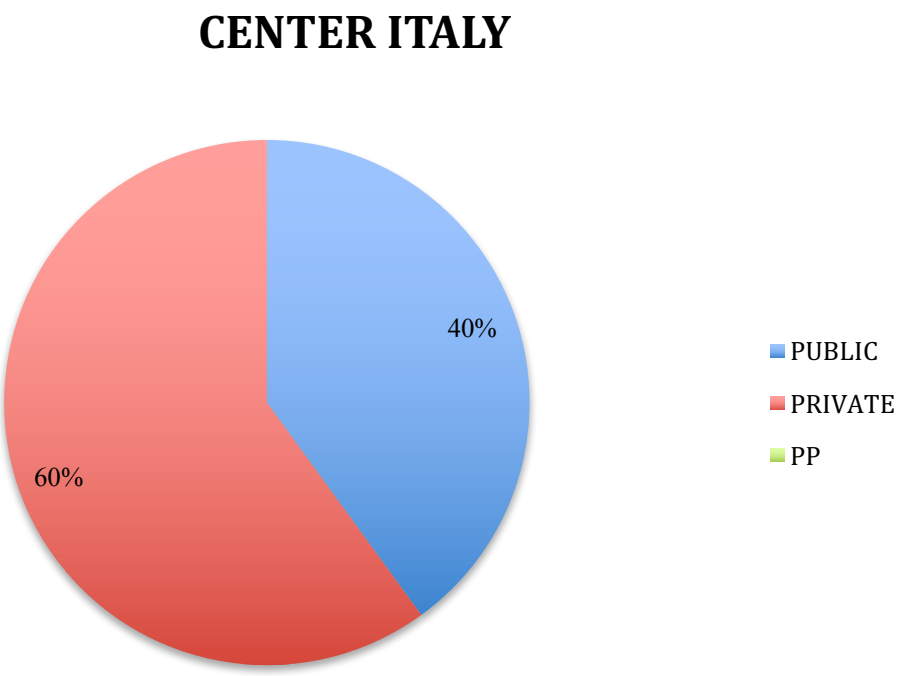


FIG. 33 – Case Studies in Center Italy divided by lenders and promoters

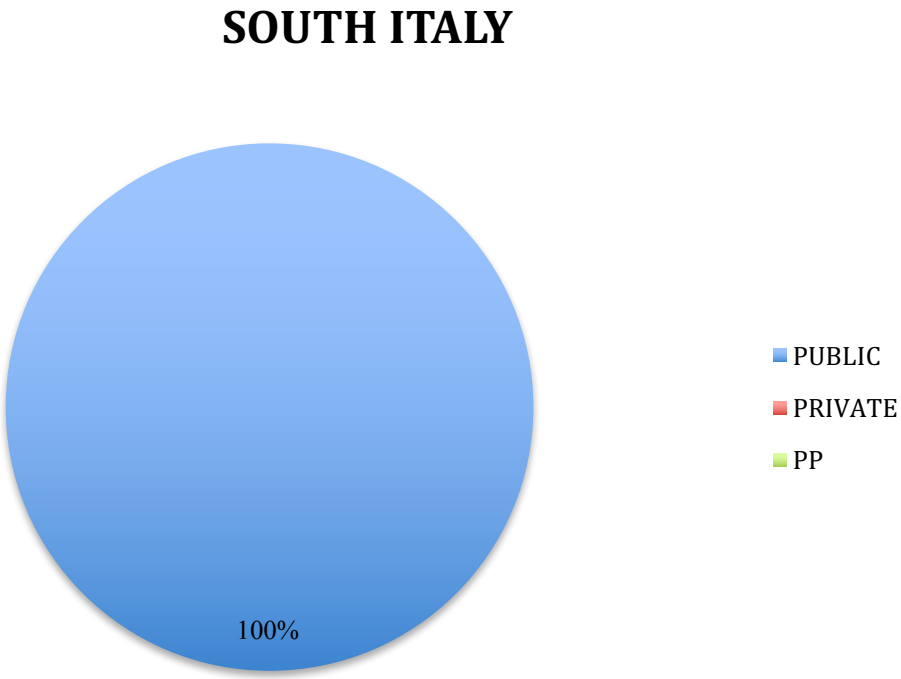


FIG. 34 – Case Studies in South Italy divided by lenders and promoters

If we relate the different types of promoters with different uses, it can be noted that the

public invests primarily in socio-cultural functions (75%) and research and development (9%); the private is also active in the socio-cultural sphere (52%), but in relation to the public is most active in the re-use for residential, office, commercial, and mixed uses (17%). The PPP instead is mainly used in the re-use for residential (40%) in relation to public and private, as the partnership between construction companies and public administrations seems to be more qualified and advanced in this field; the public – private partnership anyway is most used, referring to our sample, to the socio-cultural field (60%).

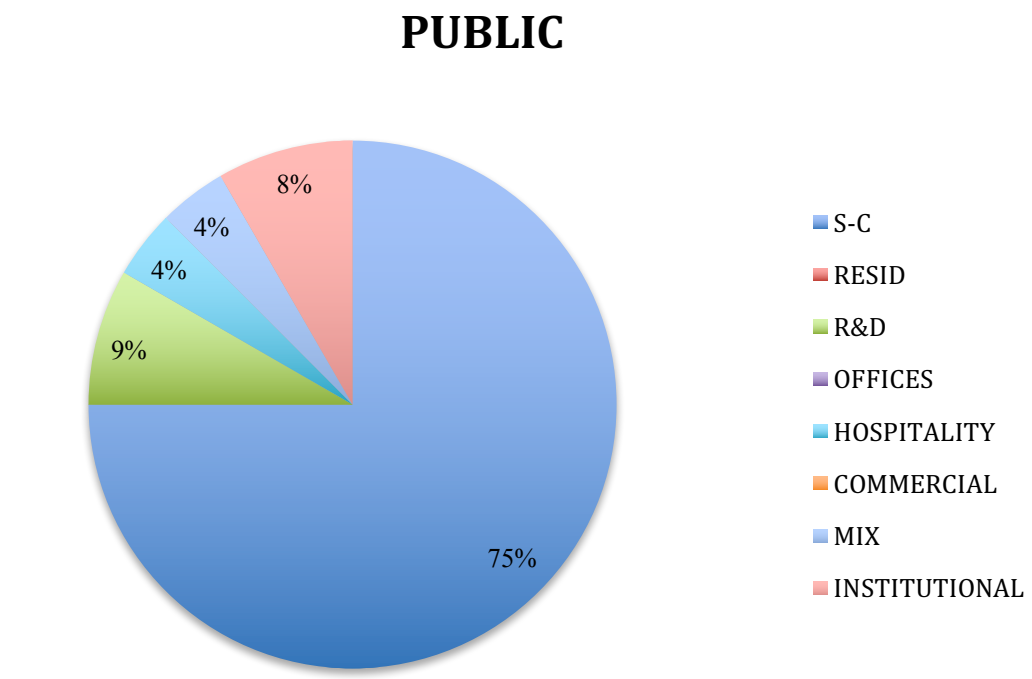


FIG. 35 – Case Studies promoted by Public Bodies divided by intended use

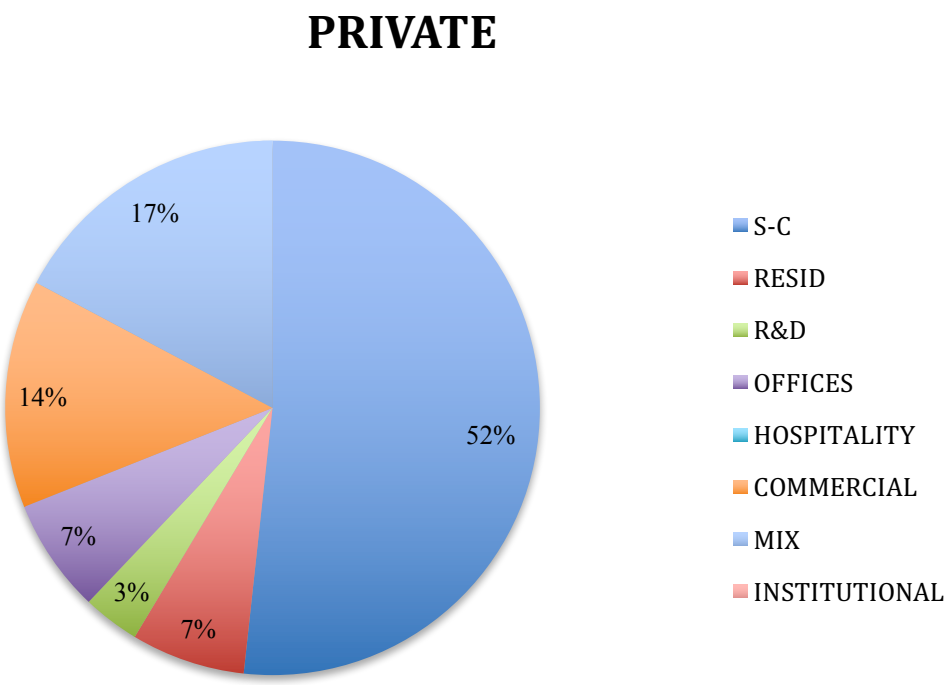


FIG. 36 – Case Studies promoted by Private Bodies divided by intended use

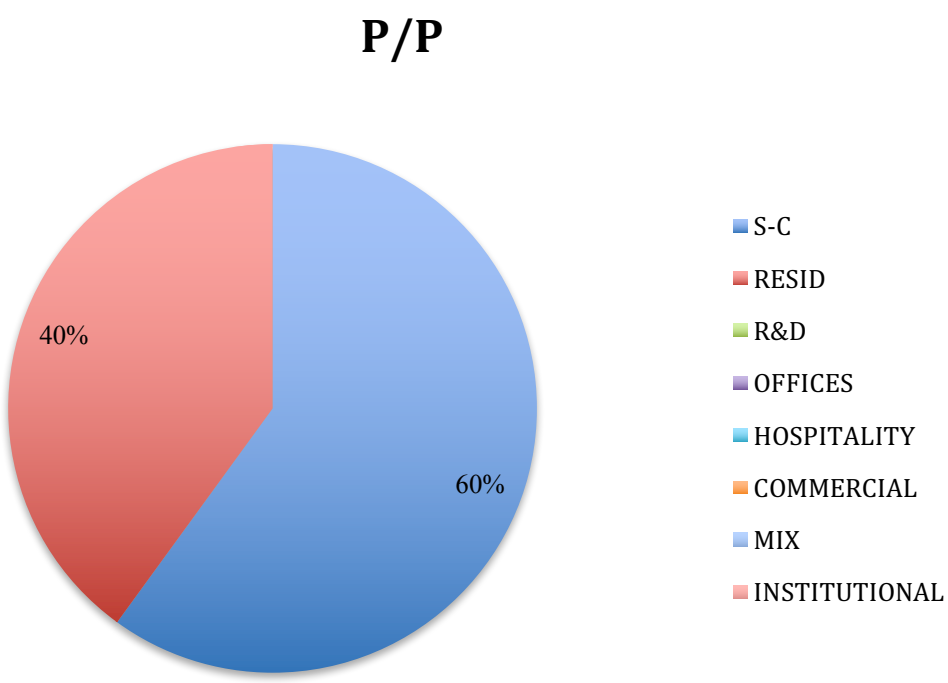


FIG. 37 – Case Studies promoted by Public-Private-Partnerships divided by intended use

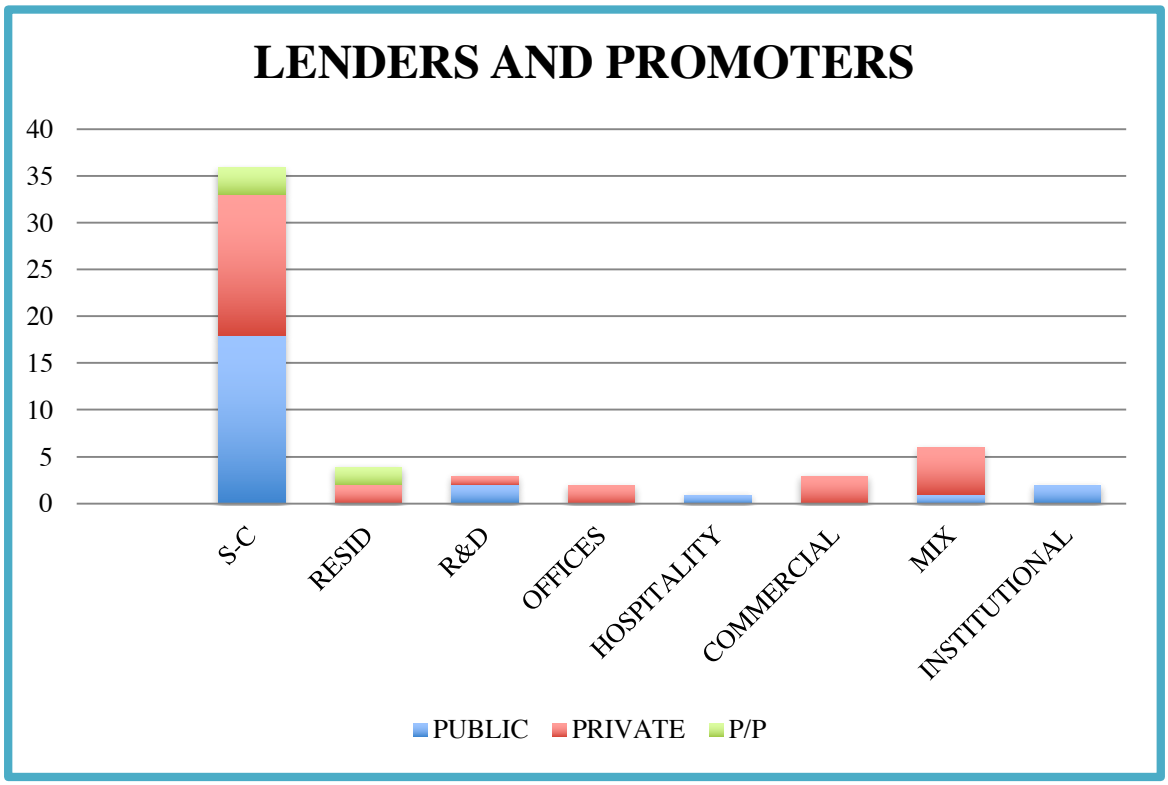


FIG. 38 – Case Studies divided by intended use and promoters

Going Better to analyze and break down the socio-cultural typology we find that public administrations tend to invest more than private companies in museums (39%), auditoriums, theaters (17%) and libraries (in line with the rationale); while private, including many foundations, tend to invest in art galleries (53%) and exhibition spaces.

With regard to the centers for culture and creativity, public and private sectors account respectively for about 28% and 27% of their investments in the reuse of industrial heritage, while the 67% of PPP regards this field (always referring to the sample of case studies collected).

PUBLIC

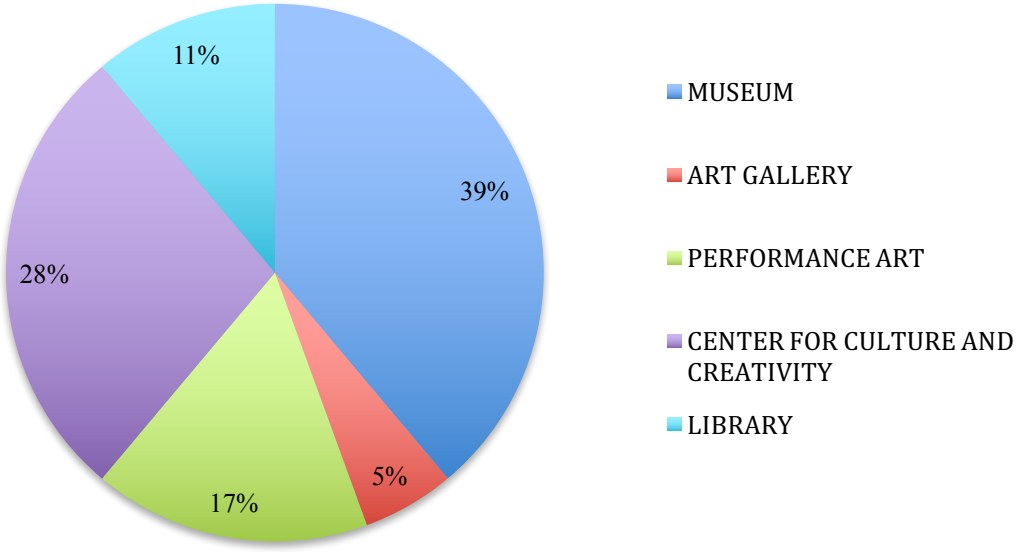


FIG. 39 – Case Studies promoted by Public Bodies divided by socio-cultural

PRIVATE

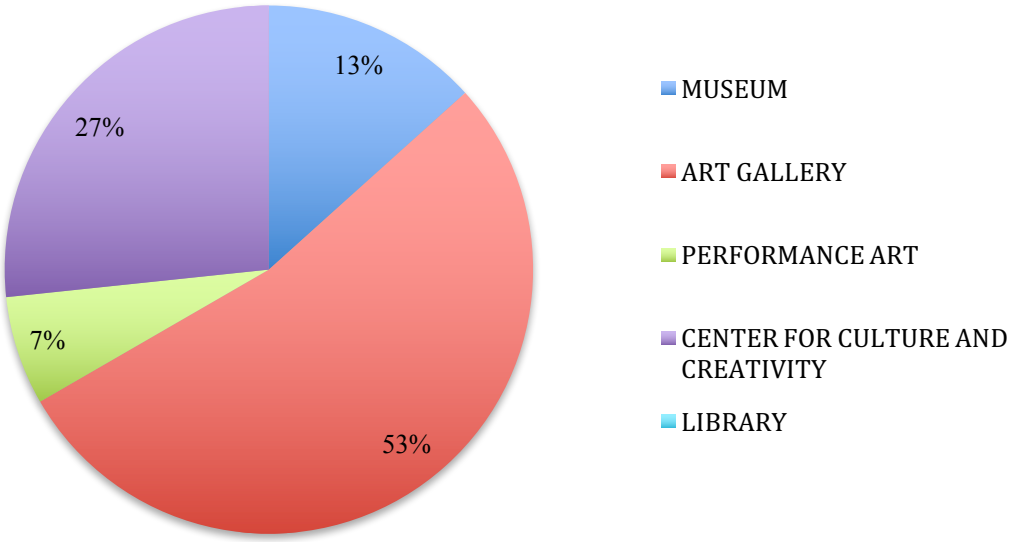


FIG. 40 – Case Studies promoted by Private Bodies divided by socio-cultural

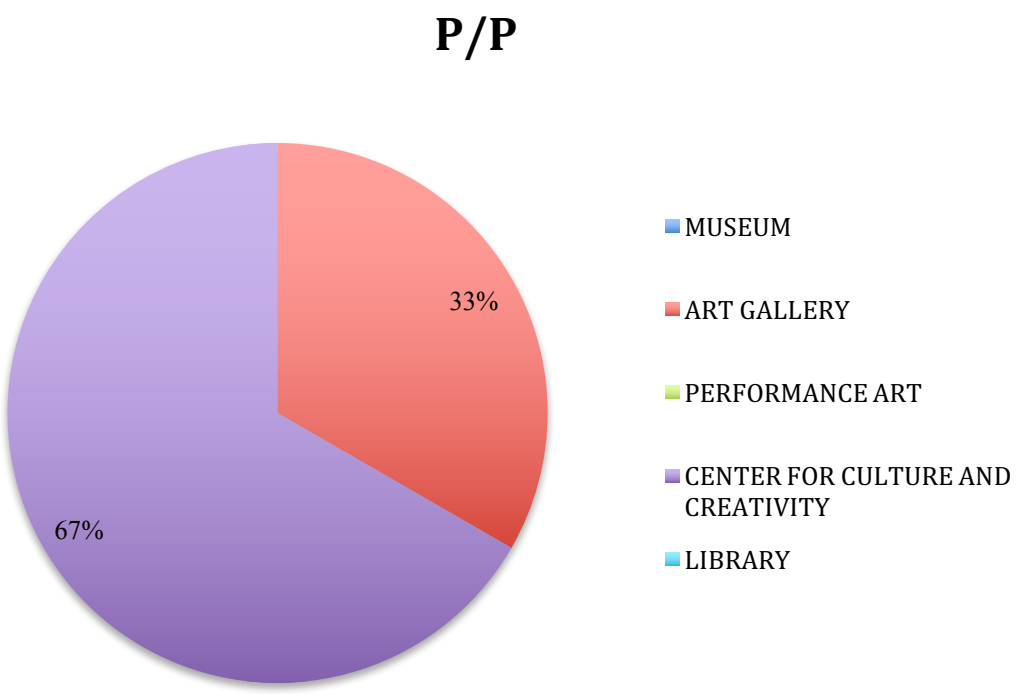


FIG. 41 – Case Studies promoted by Public-Private-Partnerships Bodies divided by socio-cultural

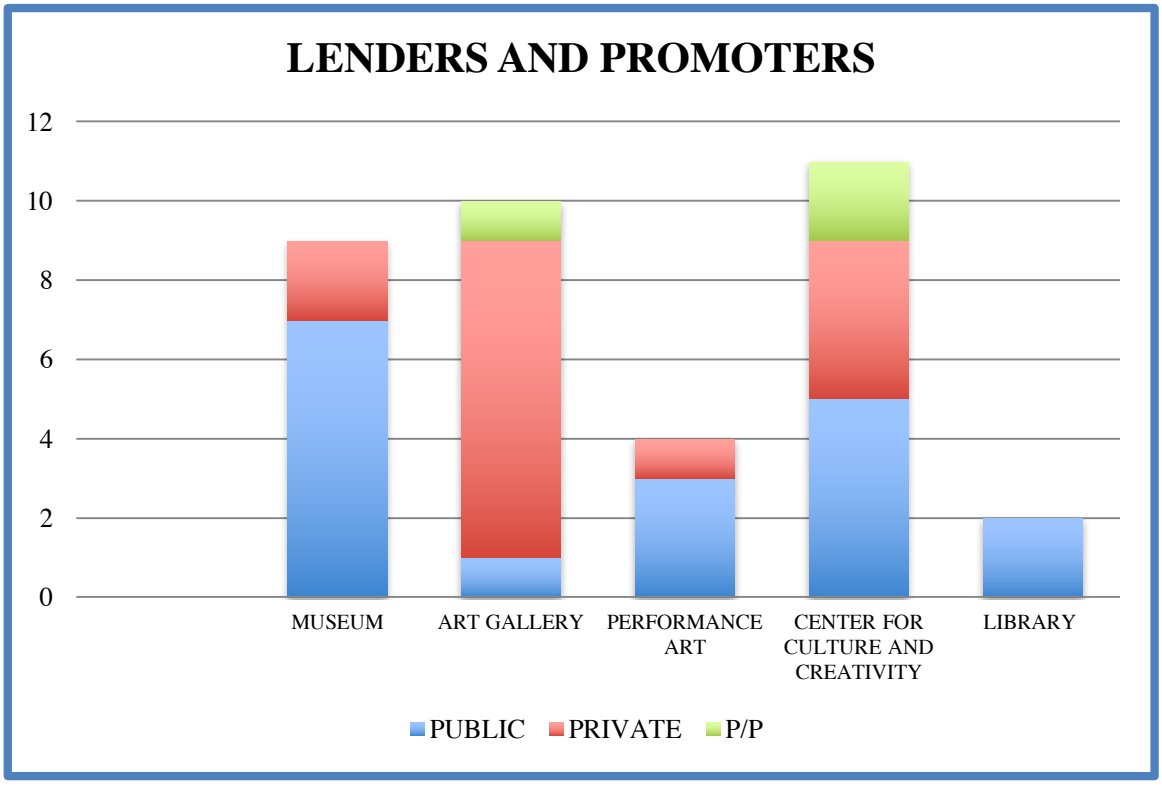
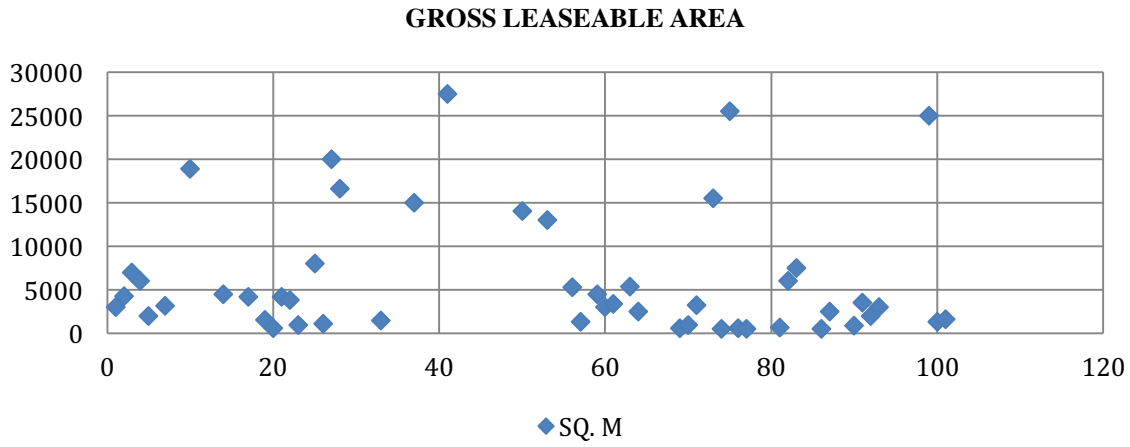


FIG. 42 – Case Studies divided by socio-cultural function and promoters

5.2.4 GROSS LEASEBLE AREA

Analyzing the gross leasable area of the case studies can be noticed that the 60% of projects is characterized by an area between 1000 and 5000 square meters (as represented in the chart below).

The median value of the sample is 3335 square meters and the most recurring value is 3000 square meters, while the minimum and the maximum value (the smallest and the biggest sized case study) are in order 500 sq.m and 27.500 sq.m and concern an art gallery in the historical center of Prato in the first case (a former textile industry) and a multifunctional center (exhibition spaces, restaurants, offices, etc.) in a former industrial complex of Milan that used to be a refrigerating warehouse.

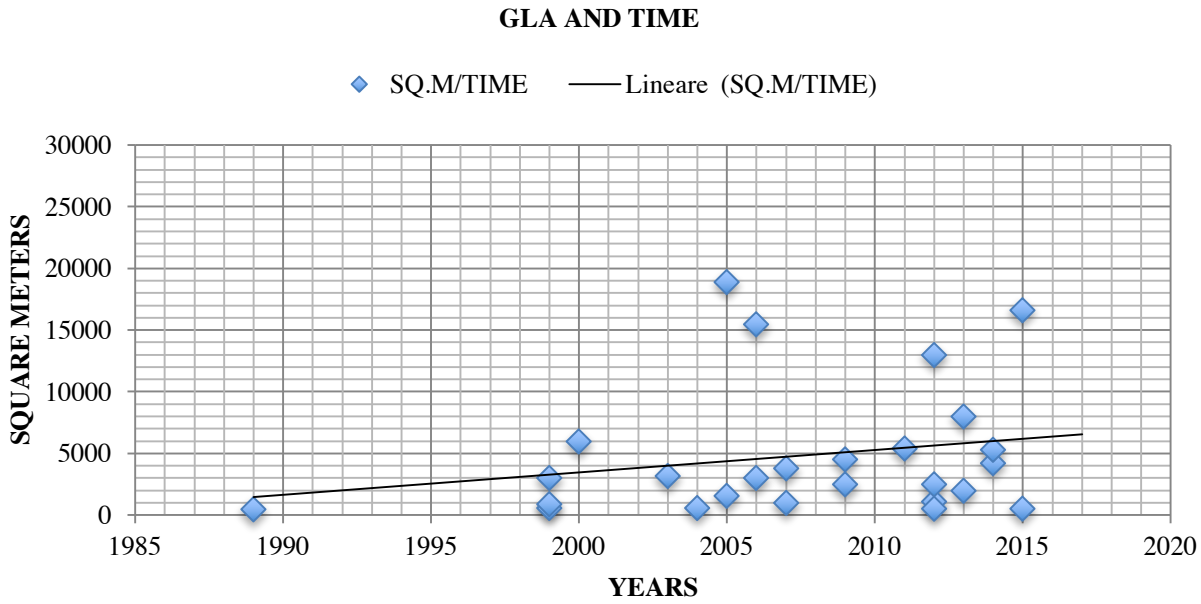


TAB.2 – Gross Leaseble Area table – Number of case studies and square meters

REGION	AVERAGE GLA	MIN	MAX
PIEMONTE	3900	2000	8500
LOMBARDIA	4.363	600	27.500
LIGURIA	9.150		
VENETO	900	508	25.500
EMILIA ROM	3400	580	18000
FRIULI VEN	3270		
TRENTINO	1000		
TOSCANA	900	500	2500
UMBRIA	6.750		
LAZIO	2750		
MARCHE	700		
PUGLIA	3000		
SICILIA	1600		

TAB.3 - Case studies average – minimum – maximum values of GLA divided by region

In the chart below is represented the behavior of the investments in terms of GLA of brownfields conversions over time and can be noted firstly that most conversions have been carried out between the years 2010 and 2015 and that there is a marked increment of GLA converted over time.



TAB.4 – Representation of the behavior of investments in terms of GLA of brownfields conversions over time

5.2.5 ACCESSIBILITY

The accessibility of the different case studies has been valued in relation to the location with respect to the historic center (km) and in respect to the infrastructures (bus-tram-subway).

The median value of the distance from the historic center of the sample of cases has resulted in 2 kilometers and the median number of infrastructures in the neighborhood has resulted in 3,5 tram-bus per converted building.

The ratio between accessibility to public transport and distance from the center (km) is found to be 1 to 2 or 2 means of transport per kilometer away from the historic center.

5.2.6 URBAN REGENERATION

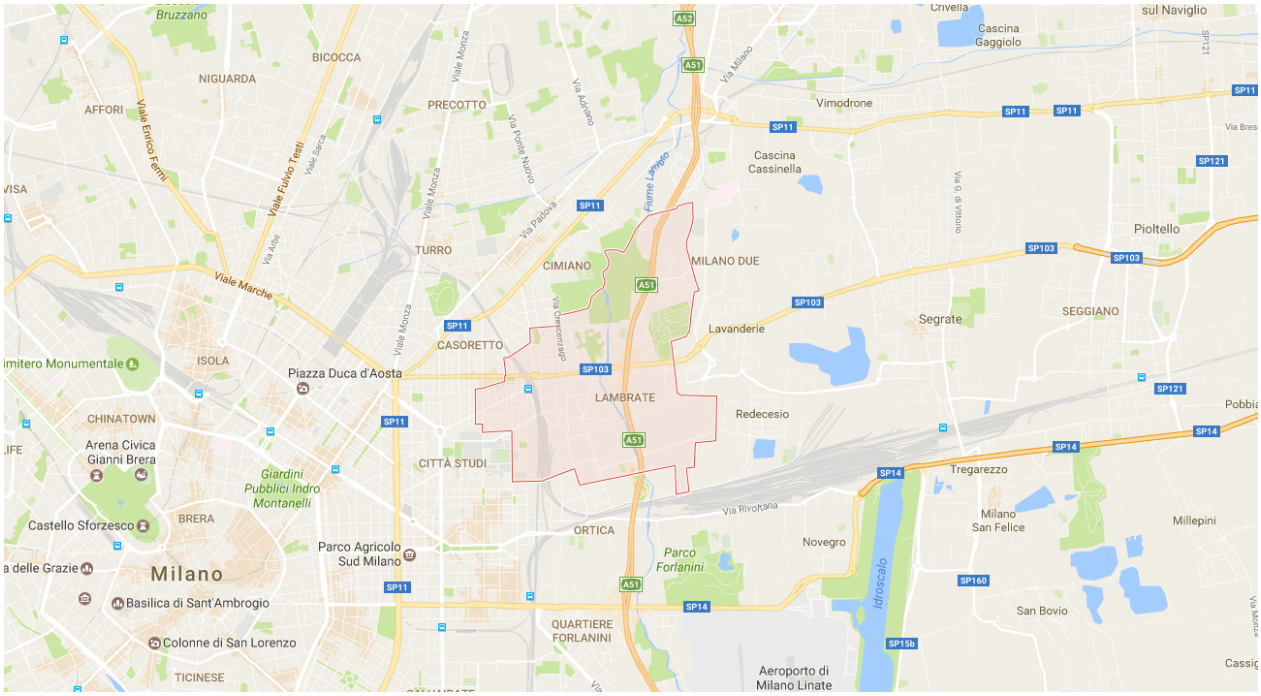
Almost the 50% (26/58) of case studies of the collected sample regards projects that has been or are part of a process of urban regeneration lead by extensive redevelopment

programs activated by public administrations plans that tend to revitalize entire neighborhoods.

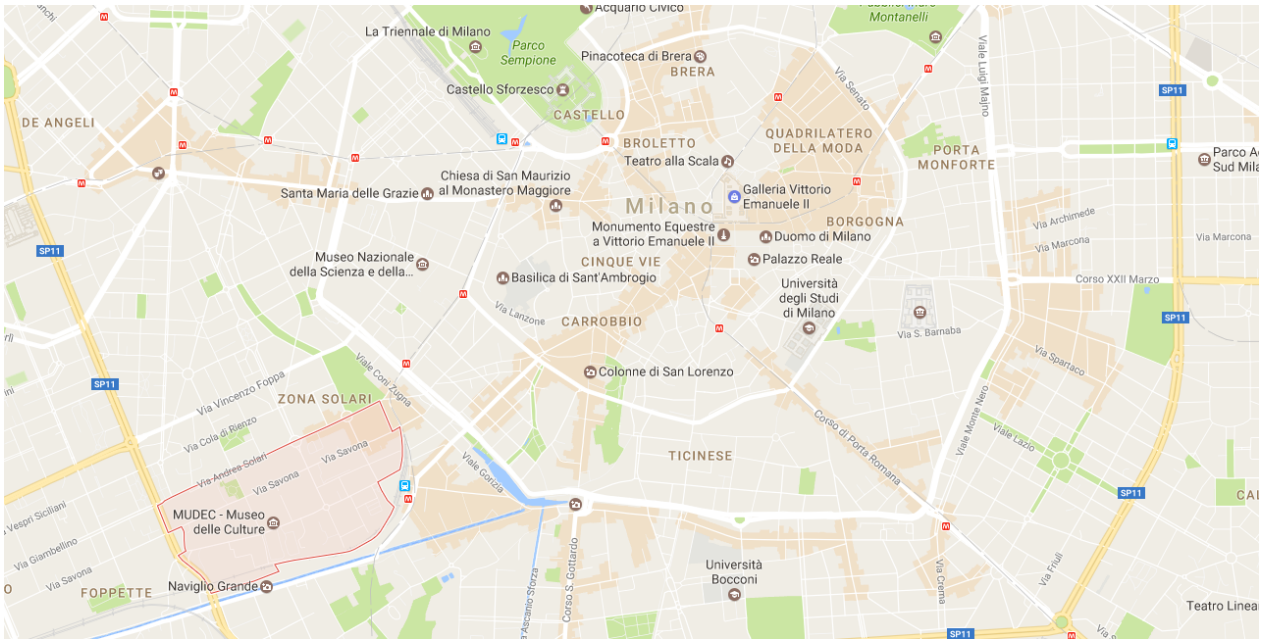
Those process of urban regeneration has also involved over time several private investors that have seen in those industrial areas a possible opportunity of investment.

There are several examples of former industrial districts, such as Lambrate District in Milan, Tortona District in Milan, Aurora District in Turin.

MAP. 1 – Quartiere Aurora, Torino



MAP. 2 – Quartiere Lambrate, Milano



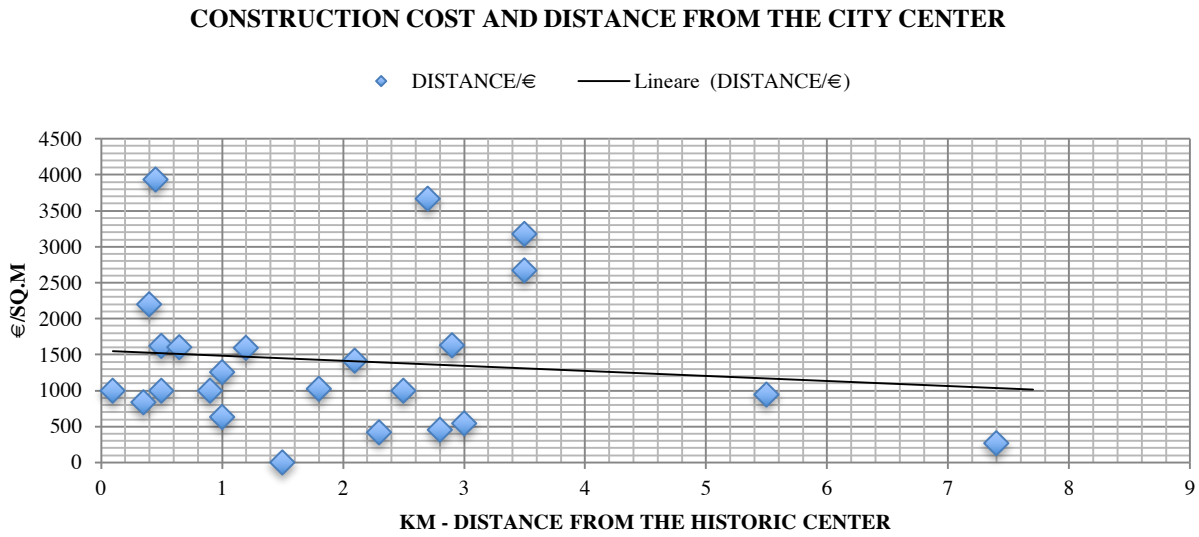
MAP. 3 – Zona Tortona, Milano

5.2.7 TIME AND COSTRUCTION COSTS

The main quantity of conversions, referring to the collection of case studies, has been carried out between 2007 and 2009, while the median value of the construction costs is about 3,6 million € and 1009 €/sq.m (it can be considered as a reference value).

The maximum unit cost (€/sq.m) that has been observed within the sample is 11.000 € in the Armani Silos case study.

In the chart below is represented the behavior of the construction costs (€/sq.m) in relation to the distance from the historic center of the city, and can be noticed that the they tends to decrease as the distance increase (in relation with the logic).



TAB.5 – Representation of the costruction costs (€/sq.m) in relation to the distance from the historic center of the city

5.2.8 INTERVENTION TYPOLOGIES

Another parameter that has been taken into account in the data collection is the intervention typology, differentiating between restoration, retrofit and new construction.

The restoration has been intended as a light intervention that do not affect the load bearing structures, instead of retrofit that has been intended as a medium/large intervention that can comprise different kinds of interventions such as structural consolidations, foundations, bearing structures and the inclusion of self-supporting structures.

While for new construction has been intended the construction of buildings by new (or demolition of some bodies and reconstruction) that are adapted to the existing ones.

In some case the refurbishment includes all the three intervention typologies such as projects interested by large built-up areas with more than one industrial body.

In the sample of case studies is resulted a number of 13 interventions characterized by new constructions and 33 interventions interested by structural retrofit, while the remaining 12 case studies has been affected by only intervention of restoration.

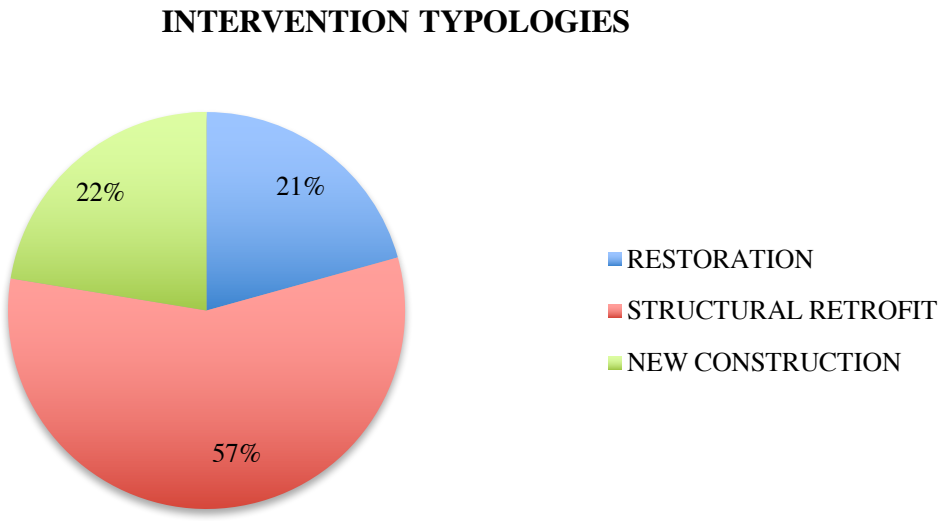


FIG. 43 – Case studies divided by intervention typologies

5.3 ADAPTABILITY AND FLEXIBILITY OF SPACES: MOST REPRESENTATIVE CASE STUDIES

Within the sample collected were detected about 20 case studies (30% of the total) characterized by redevelopment that have been set on the concept of adaptability and flexibility of the spaces, namely containing detachable, removable, interchangeable structures, with an open space and not occupied character. Have not been taken into account the case studies regarding open spaces without any kind of internal structures that subdivide and articulate spaces and functions, even if they have a high level of adaptability (eg art galleries in which the spaces are continuous and highly adaptable).

MOST REPRESENTATIVE CASE STUDIES

CASAZERA

CITY: TORINO
AREA: 4300 SQ.M
FUNCTION: RESIDENTIAL
PROMOTER: REGIONE PIEMONTE AND DE.GA SPA

Casazera is the living lab developed under the Ecostruendo research project. It is a prefabricated living prototype dry wood, with low environmental impact for the urban redevelopment of disused industrial buildings.
Casazera aims at greater degree of prefabrication in the factory and plant integration possible.
The manufacturing technology is based on precast lightweight dry, ie the mechanical assembly of laminated materials of various kinds, on a wooden frame.
Each unit or units cluster is structurally independent from the existing industrial structure in order to allow maximum flexibility in design; all surfaces that enclose the heated volume are constituted by a wooden frame externally buffered and isolated inside. The completion of the wall and ceiling packets with subsequent functional layers (thermal insulation, waterproofing, etc.) varies according to the exposure and performance requirements.
In relation to the performance level required to housing there are three ranges price corresponding to the three different types of houses:

€ 1,400 / sqm Cluster: aggregation of housing units

€ 1,600 / sqm internal Villa: internal independent unit

€ 2,000 / sqm Penthouse: independent housing units in cover

PHO. 20 – Casa zera – Torino, Piemonte

PHO. 21 – Casa zera – Torino, Piemonte

PHO. 22 – Casa zera – Torino, Piemonte

PHO. 23 – Casa zera – Torino, Piemonte

RESEARCH AND DEVELOPMENT CENTER

CITY: DALMINE (BG)
AREA: 4220 SQ.M
FUNCTION: OFFICIES, R&D
PROMOTER: TENARIS SPA

The 1908 shed, with no more industrial production in it, had a large and well-proportioned inner space, a very elegant and slim steel structure, and great zenith natural light.
The lack of use would inevitably have implied expensive maintenance with no return, a gradual neglect and possible demolition. It consequently surged as a rational option the idea of settling the new Research & Development inside the shed instead of building from scratch. Surfaces fitted perfectly and decided to go for a construction inside another construction scheme.
Has been created an inner landscape shaped by the three-floor building for researchers offices, the garden, the one-floor building for laboratories and the yard for samples preparation, all under a common roof. Has been inserted a steel and glass self supporting structure in the shape of a cube, that goes to divide the shed into different functional areas.

PHO. 24 – Research and development center – Dalmine; Lombardy

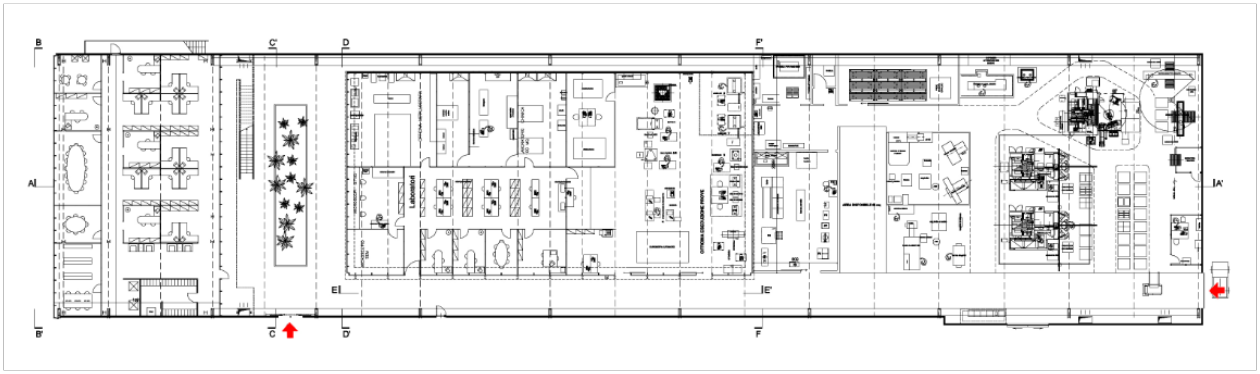
PHO. 25 – Research and development center – Dalmine; Lombardy

OPIFICIO GOLINELLI

CITY: BOLOGNA
AREA: 9000 SQ.M
GLA: 4500 SQ.M
FUNCTION: CENTER FOR CULTURE AND CREATIVITY
PROMOTER: FONDAZIONE MARINO GOLINELLI

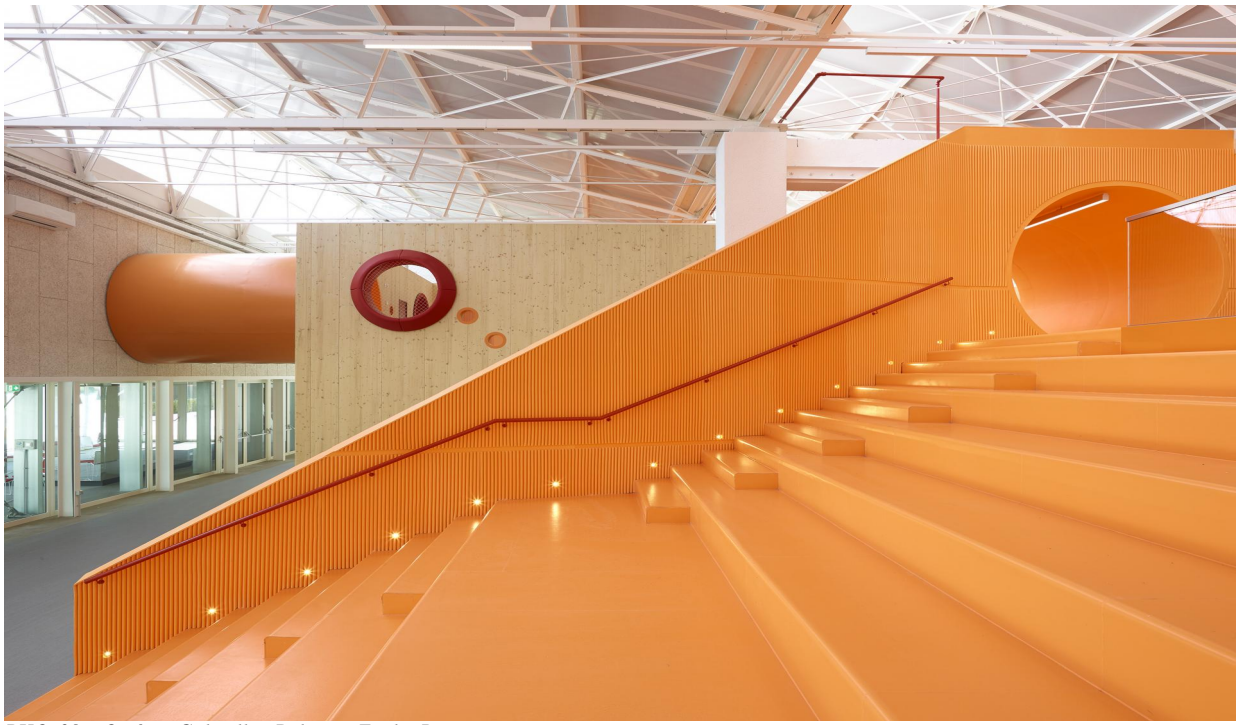
Golinelli factory is located in Via Paolo Nanni Costa 14, adjacent to the industrial area of about 3 hectares occupied until 2008 by the Company Sabiem Foundries. The citadel for knowledge and culture, which required a total investment of 12 million Euros, is 9,000 square meters and is home to around 100,000 visitors a year. The expected numbers and the cultural model make it one of the largest experimental laboratories at the end of teaching in the field of science and technology and a national and international importance of the center. The architectural design has recovered an abandoned former factory, configuring itself as an operation of regeneration and urban renewal.
The global interior is interconnected with the world through open work modes, built according to generating principles with which to contribute to encourage study and experimentation. The strategy of the unfinished: this calls for the non-occupation of the entire available internal space, allowing the Opificio to be flexible over time, since the development of the facility is not predictable.

PHO. 26 – Opificio Golinelli – Bologna, Emilia Romagna



PHO. 27 – Opificio Golinelli – Bologna, Emilia Romagna

PHO. 28 – Opificio Golinelli – Bologna, Emilia Romagna



PHO. 29 – Opificio Golinelli – Bologna, Emilia Romagna

TECNOPOLO DI REGGIO EMILIA

CITY: REGGIO EMILIA
AREA: 5400 SQ.M
FUNCTION: OFFICIES, R&D
PROMOTER: REGIONE EMILIA ROMAGNA E COMUNE DI REGGIO EMILIA

Returned 'to life' for the architect Andrea Oliva hand, the former "Officine Reggiane" milestone for the history of the city of Reggio Emilia. Built as factories (Officine Righi) of railway rolling stock and converted, during World War II, to produce warheads for bullets and guns and, later, war planes, have become now Tecnopolo for industrial research. In the "former Reggiane" remains a dynamic, since it is an open set, not definitive, constantly changing: they are part of the specific facts of the factories, roads and squares, but also abstract elements as the process industrial, visionary and avant-garde. The Shed 19 is a great cover whose figurative and typological characteristics are reflected precisely in the form of empty space and limited, for this reason, for the respect of the historic structure, the subdivision of the rooms is via independent modules both structurally and thermally increasing the surfaces available and enhancing the public indoor space. Except for the cement fiber roof asbestos, dismantled and replaced with an insulated metal cover with integrated skylights, the intervention tends to preserve as much as possible the original structure. In this sense, the subdivision of the environments occurs via self-supporting modules, thermally independent and reversible. Down the aisle of the hall, the rhythmic pattern of the original metal structure echoes the sequence of the box comprised of panels of solid wood glued cross-laminated, coupled plasterboard insulated walls (solution that makes sustainable energy requirements). "The new structures of the subdivision and distribution form a building in the building, the articulation of which is subject to the spatiality of the original hangar avoiding contact solutions, mimesis or interference." The boxes are arranged on three levels and house laboratories, offices for startups and spin-offs, meeting spaces; the variable juxtaposition between the various wooden bodies creates terraces, swings and pathways that give dynamism to the new distribution structure. A total renovation not only of the building but also of process residues, stains, written, imperfections. The structural consolidation of the foundations has allowed, then, to

distribute the plant complex system leaving unchanged the original architecture; the replacement of the roof covering with skylights juxtaposed allowed to illuminate the space below in more levels.

PHO. 30 – Tecnopolo – Reggio Emilia, Emilia Romagna

PHO. 31 – Tecnopolo – Reggio Emilia, Emilia Romagna

PHO. 32 – Tecnopolo – Reggio Emilia, Emilia Romagna

PHO. 33 – Tecnopolo – Reggio Emilia, Emilia Romagna

MINO HOSTEL

CITY: MIGLIARINO (FE)
AREA: 510 SQ.M
FUNCTION: HOSPITALITY
PROMOTER: COMUNE DI MIGLIARINO

As a part of a program for the conversion of an old hemp factory into a new city center for the town of Migliarino, the project gains a youth hostel out of a 510 m2 portion of the building. The site position is barycentric to the touristic circuits which take place during the summer, thanks to the proximity of the Po River Delta Natural Park, but the project has to count on a reduced regional funding, 270.000 € including the furniture, and a doubtful management profitability. The management aspect is a central element of the project: the economic and energy savings become the 'primary objective. The intervention is thought of as a 'passive machine' capable of conveying the natural motion of 'air to draw benefit climate, while the distribution of the plants and the morphological definition of the different environments, designed to obtain a minimization of the elements and of the technologies used, allow an elastic hospitality skills: maximum in spring-summer and during special events, reduced to 'essential in periods with lower turnout. While on the ground floor are provided the reception and service spaces, the second floor has one large room with air-illuminating surfaces on one side only. On the opposite side it is arranged on two levels four rooms with private bathroom, common toilet and a staircase. The volume, compact and well-defined, it is easy to conditioning through traditional methods. In the main space instead the air conditioning is based on passive ventilation, facilitated by the north position of the apertures and by two ventilation towers located in coverage. The fact of not being divisible into more housing units, given the uniqueness of the source of light and air, suggests an alternative solution to the dorm: as in a camping indoors, inserting autonomous cells, bounded by light casings. 'Rooms' independent not only physically but also climatically: a timely conditioning system lets you choose which 'turn'. The entire network plant is housed in inspectable wooden platform that serves as a connective tissue cell-cell. The height difference that the distinction between the more intimate space of the rooms and the common day. The movement of the perimeter of the platform creates opportunities for sitting and relaxing. The space remains fluid while allowing a multiplicity of distinct uses, while the monochromatic furnishings, and inserted

elements enhances the plasticity.

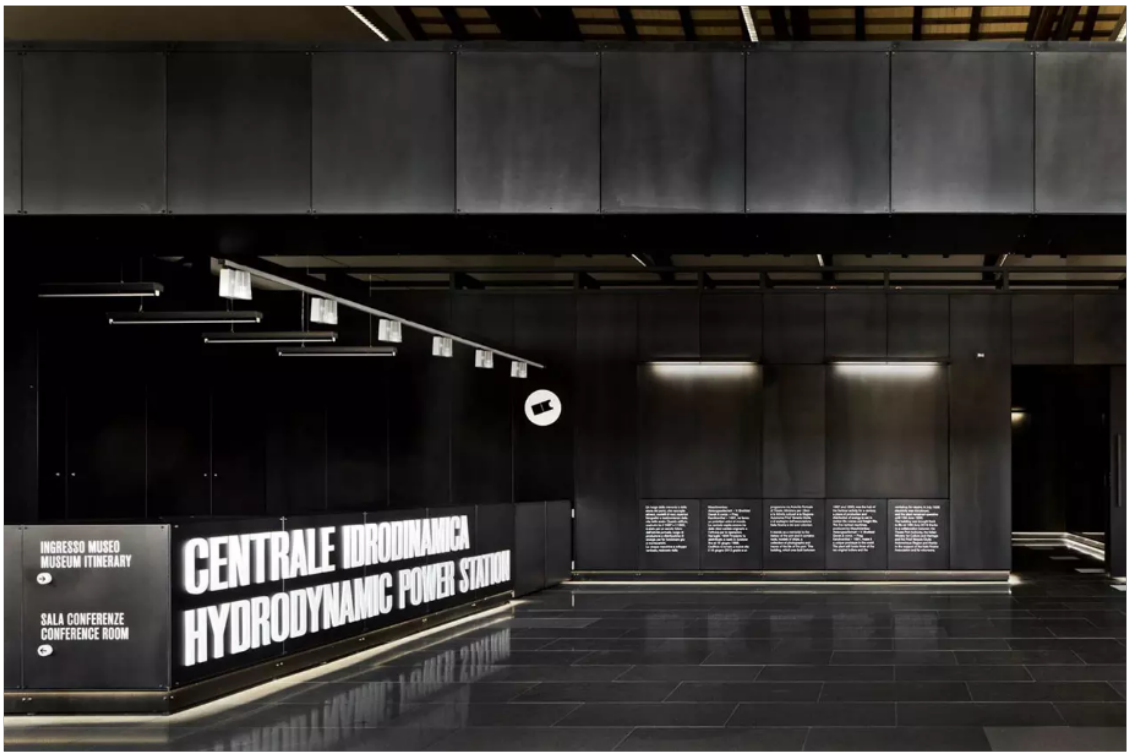
PHO. 34 – MinoHostel – Migliarino, Emilia Romagna

PHO. 35 – MinoHostel – Migliarino, Emilia Romagna

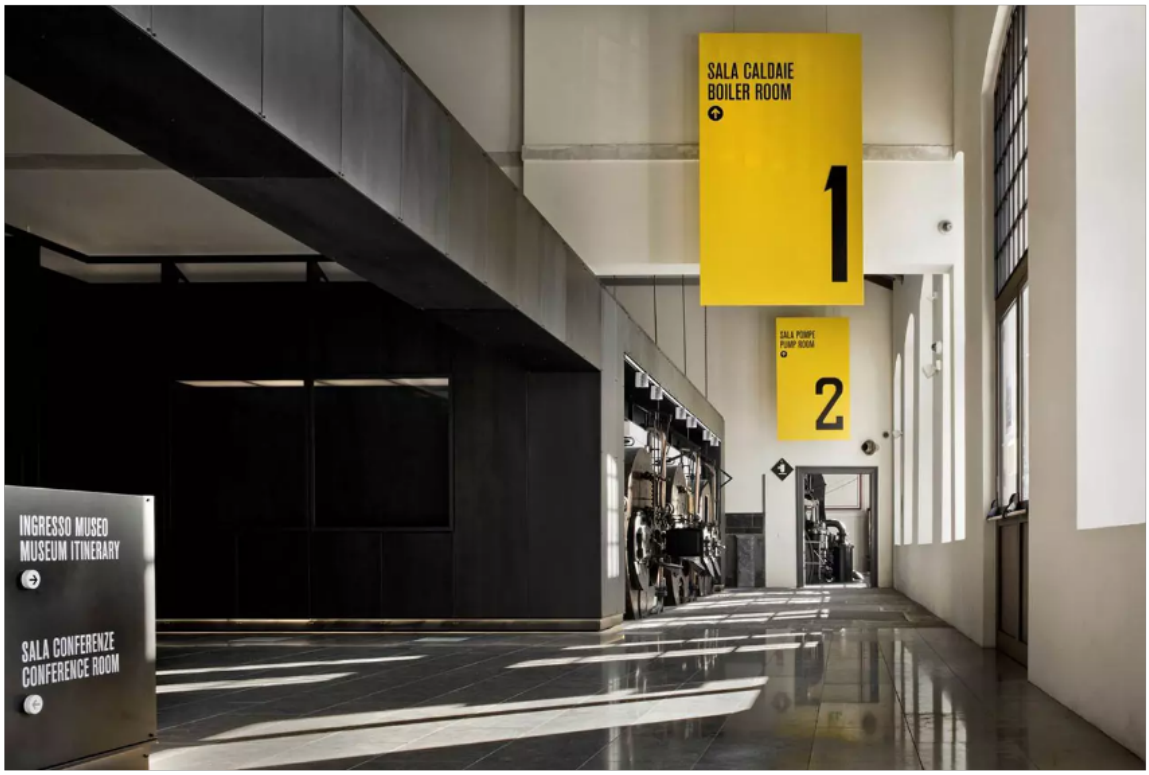
POLO MUSEALE DI TRIESTE

CITY: TRIESTE
AREA: 3270 SQ.M (THE HYDRODYNAMIC POWER STATION 2000 SQ.M - THE POWER CONVERTER SUBSTATION 1270 SQ.M)
FUNCTION: MUSEUM
PROMOTER: AUTORITA' PORTUALE DI TRIESTE

Inside the Old Port of Trieste the Port Authority established the museum center of the port inside two recovered buildings, located in the north towards Barcola and originally dedicated to the production of energy for the entire sector: the Hydrodynamic Power Station and the Power Converter Substation. The Hydrodynamic Power Station, built around 1890, was recovered in 2012. The Power Converter Substation, building constructed around 1913 by Giorgio Zaninovich, student of Otto Wagner, was recovered in 2014. The exhibition design is concentrated in the central area of the building just described. The intervention improves decisively the vocation of this space by a device made of metal frames and infill iron sheets painted. This device, recovering the spatiality original battery of boilers, refurbishes the system three environments, and sets new hosting space in the thickness of its walls: a series of display cases that contribute to the realization of a new and articulated exhibition. The power converter subastation is made up of two main parts conformed to L. The first housed the switches room and the room of the bus bars to 27,000 V, while the second part, facing the Hydrodynamic Power Station, housed a double height room with two different switchboards in low and medium voltage, still perfectly preserved. For the program this building is dedicated to house in the basement level the historical archives of the Port Authority, and at the other levels study rooms for consultation of archival material and definition of the new entrance, which develops longitudinally towards the NE. A permanent fixture in oak custom-designed, re-proposing some spatial rules in close interaction with the geometrical elements of the building and the original architectural seriality machinery housed therein, upgrades firmly the spaces, in close interaction with new typographic signals and installations.



PHO. 36 – Polo Musealel – Trieste, Friuli Venezia Giulia

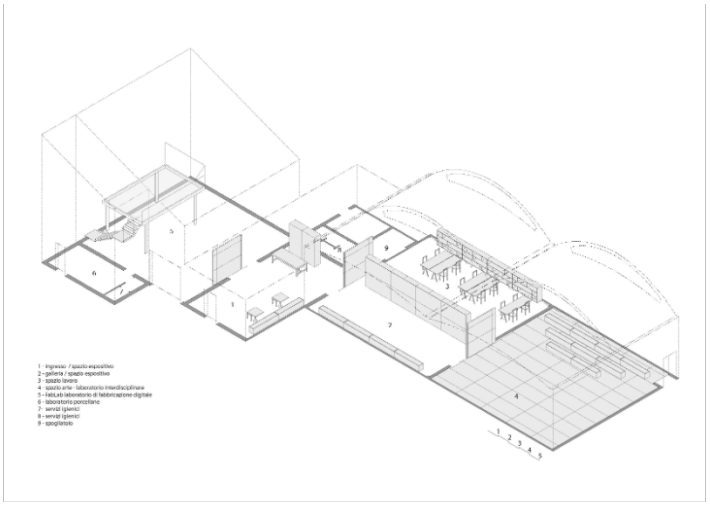


PHO. 37 – Polo Musealel – Trieste, Friuli Venezia Giulia

MTMA SPAZIO ZEPHIRO

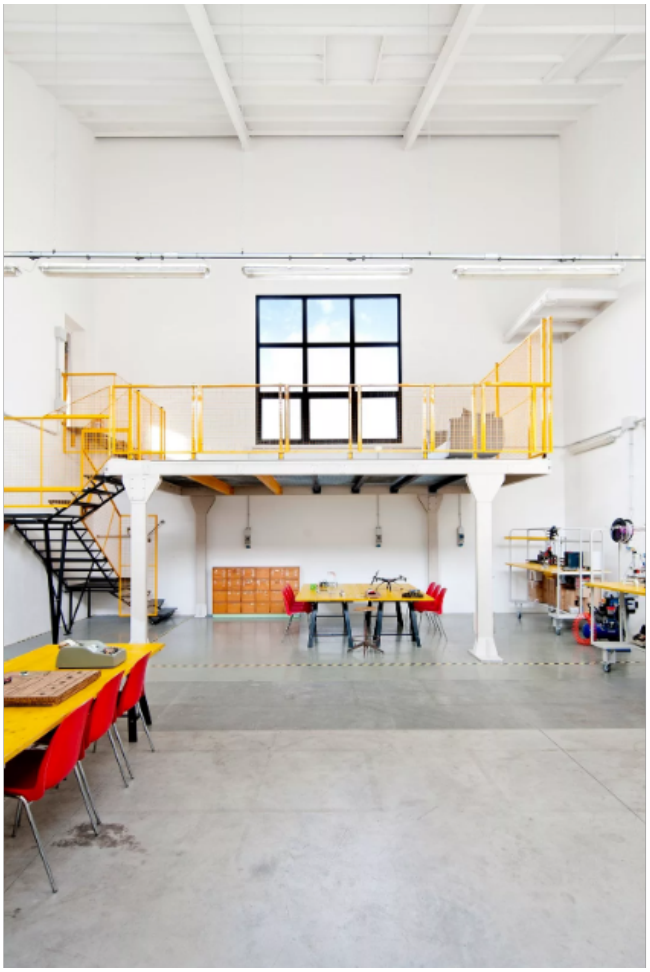
CITY: CASTELFRANCO VENETO (TV)
AREA: 550 SQ.M
FUNCTION: CENTER FOR CULTURE AND CREATIVITY
PROMOTER: ZEPHIROTORNA

In a hinge area between the city center and the periphery, Zephiro space is characterized as a place to workshop vocation, where different entities engage in the search for new interpretations for new socio-cultural models, value and business. Therefore not only a design intervention, but a process in which the architecture was the glue, the tool to converge, meet, stimulate. In the simplicity of a "shed" every need was "bare-bones." By minimizing the masonry works, the intervention respects the original architecture. It has completely redesigned the technological systems, it replaces, but leaves again exposed, trying to witness the industrial characteristic of the place. Robe, however, the interior space of a single material, wood, which creates a common thread in all environments with wooden elements that differentiate the new project functions, environments, atmospheres drawing style coherent and readable, minimalist and neutral. Multilayer panels of French pine, various thicknesses, have been used to create a unique project intervention allowing perception to articulate the new spaces through large sliding partitions between the different environments, becoming a warm floor wooden raft, defining a long vertical partition of ten meters that divides and sets at the same time. The project, through the sliding partitions, provides independent environments, intimate, that could open up and unite in a divided space that reveals the different identities that inhabit it. The only exception is for the metal-scale loft structure. In its original configuration the complex has a rectangular plan, internally drawn by a square texture of pillars. The only exception in the regular perimeter of the structure is given by a body of the building overhang that comes out of the compact shape, with a significant height compared around and very slender.



PHO. 38 – MTMA spazio Zephiro– Castelfranco, Veneto

PHO. 39 –MTMA spazio Zephiro– Castelfranco, Veneto



PHO. 40 – MTMA spazio Zephiro– Castelfranco, Veneto

PHO. 41 – MTMA spazio Zephiro– Castelfranco, Veneto

AUDITORIUM LO SQUERO

CITY: ISOLA DI SAN GIORGIO MAGGIORE (VE)
AREA: 508 SQ.M
FUNCTION: AUDITORIUM – PERFORMING ARTS CENTER
PROMOTER: FONDAZIONE GIORGIO CINI ONLUS

The Giorgio Cini Foundation created a new space for music in Venice: the Island "Squero" of San Giorgio Maggiore. A former workshop for the repair of vessels has been transformed into a modern and impressive auditorium, thanks to the intervention of Cattaruzza Millosevich and architects. The construction of the Squero dates back to the mid-nineteenth century: its structure is inspired by the great Venetian architecture, resuming the Arsenal model of which recovers design, materials, functional diagram, placing itself in comparison with the oldest Isle customs warehouse (the former Convitto) inspired, instead, to the Magazzini della Dogana della Salute. The building is brick, and measures 28.70 m to 17.70 m, with the major sides characterized by six arches. The roof, supported by wooden trusses, had been rebuilt with a major renovation in 1952. The nuts at the base of the pillars and the frame of the eaves are stone D'Istria. The work of the '52 had radically changed the nature of the boatyard, turning it into a closed building. The elevations east and west, corresponding to the minor sides, were closed with large iron frames, the arches, instead, buffered masonry in the lower part and closed with windows in the upper part. In the following years are realized within the shipyard, on the south side, a loft a.c., then closed with a further frame, and a masonry thermal plant alongside the north side. The project aims to recover the spatiality of the original shipyard, emptying the inside and releasing the large arches of the major fronts. The new auditorium had to be recognizable for design and materials from the original construction, to allow the reading of the two interventions. For this new volume it is all made dry, steel, wood and glass and comes off on all sides by the existing building, as well as from the ground, allowing water to enter the shipyard, because the whole floor slab rests on wooden beams that detach from the ground. The elements that connect the new project context are basically two: the first is the geometry of the new volume, dictated by alignment with the nineteenth-century shipyard, the second is the extraordinary panorama which overlooks the east elevation, towards the lagoon. The view dominates space of the room, thanks to a glass wall that spans the entire east front, for a length of nearly thirteen meters and still on the sides, for a

further seven meters. The room floor is lowered in the final stretch, to readjust the eastern façade, which otherwise would be too high compared to water and to hide inside, the view of the glass attachment point, with an effect of continuity between the interior space and external. The hall is clad externally with marine plywood panels, the separation between the new volume and the squero walls allows you to read again the boatyard as a large open shed. The upper part of the walls contains the ducts for the air conditioning which are connected, in a ring design, the two technical rooms positioned in a loft near the entrance, so as to integrate the systems in the overall design.

PHO. 42 – Auditorium Lo Squero –Isola di San Giorgio Maggiore, Veneto

PHO. 43 – Auditorium Lo Squero –Isola di San Giorgio Maggiore, Veneto

PHO. 44 – Auditorium Lo Squero –Isola di San Giorgio Maggiore, Veneto

PHO. 45 – Auditorium Lo Squero –Isola di San Giorgio Maggiore, Veneto

PHO. 46 – Auditorium Lo Squero –Isola di San Giorgio Maggiore, Veneto

6. ANALYSIS

This chapter analyzed the data for the case studies collected: are presented analytical methods used and the methods for the comparison between case studies and their classification based on adaptive reuse characteristics. In addition, are defined the parameters used to classify the different case studies, with subsequent considerations relating to the comparisons made.

6.1 FLEX ANALYSIS AND PROCESSING DATA

An important parameter that we decided to calculate for each of our cases is Adaptability, this parameter is derived from the ability of a building to adapt to changes and to destination use changes. To calculate it, we used the FLEX system, invented in Netherlands about ten years ago, by a group of engineers and architects, this system puts in comparison the different characteristic of a building by scoring it.

There are different versions of FLEX system, the one that most suited to our type of building is the flex version 2.0, a practical and easy to use light version of the assessment method with a limited number, 17 of the most important indicators.

The breakdown of the building assessment in this version is simpler and consists of 5 main categories divided as:

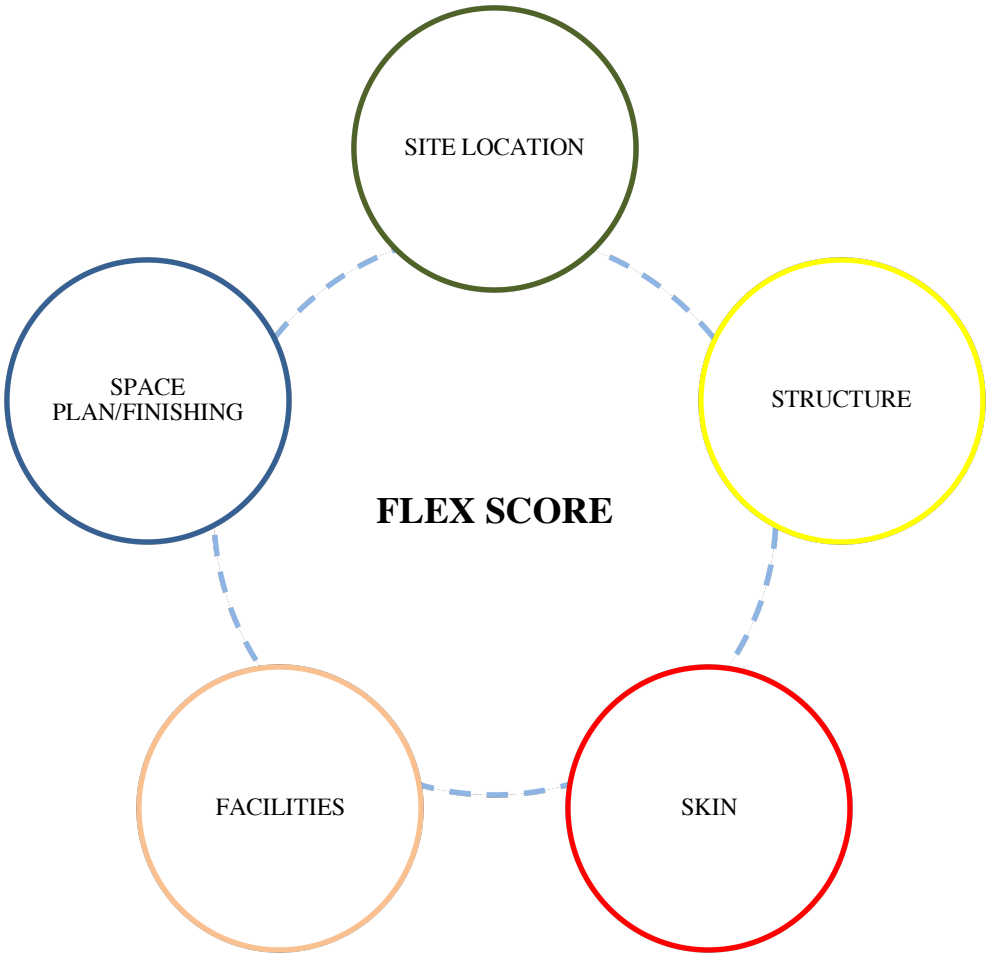


FIG. 44 - Schematic representation of the FLEX 2.0 macro categories

The first macro category refers to the capacity of a building to have free space available, more exactly is the surplus of site space, for each of our cases we consider the square meter of available space near the building.
The second macro refers to the building structure and is divided into three subcategories:

- Measurements, that takes into account the surplus of building space, free floor space and the surplus of floor height.
- Access, it refers to the building entrance, the location of the stairs, the number of elevators and the distance to the core area.
- Construction, refers to the ability of the building to resist to the load that insist on the structure, the load bearing capacity of floors and the possible to extend the building in horizontal or in vertical.

The third macro category SKIN is the ability of the building to have a dismountable

façade and the possibility to replace it.
In the third category must evaluate the dimension, the ability, the customisability and controllability of the facilities, even the surplus of ducts and shafts and the possibility of disconnection of the facilities components in the future.
SPACE PLAN/FINISHING Is the last category of assessments is divided in three sub categories:

- Functional: that refers to the distinction between support and infill that is the surplus of space between the fit and the out.
- Access: is the presence of horizontal routing, corridors, gallery
- Technical: refers to the possibility to remove or relocate unit in building and to disconnect and detailed connection of the interior walls in horizontal and in vertical.

At these 17 indicators has been given a weight relative to the other indicators (weighting 1 - 3) and also each indicator is assessed (assessment level 1 - 4). The score one correspond to bad and four is for best. This leads to a score per indicator and summed up to a total Adaptability score with a minimum score17 and a maximum score of 204.
We applied FLEX 2.0 for each case study getting 58 total adaptability score and the corresponding class, that are 5 divided from not adaptive to excellent adaptive.
The worst figure of our analysis is “Bagnada eco-museum of mining” located in Lombardy, this result is due to poor possibility of adaptation of the building, the Flex analysis point out the low capacity of adaptability, with no possibility of available square meter or a low storey height or presence of free space, there is no free building but of course it is a mine and low heights and narrow passages are allowed, after these results we can conclude that do not allow a reuse different from that of the museum.
Instead, the case study that obtains the highest score is the “Tecnopolo of Reggio Emilia”, the strong features that characterise this building are the presence of expandable site space, the surplus of free floor height, the day light facilities and the customisability and controllability of the space and of the facilities. These results were obtained thanks to the great capacity of adaptability of the building due to the accurate planning of the architect Andrea Oliva.

6.2 NORMALIZATION OF VARIABLES AND CRITERIA FOR CASE STUDIES COMPARISONS

The development of the proposal for guidelines is made through comparisons between two or more case studies by using radar charts made up by predefined variables resulting from the collected data.

Through the use of comparisons in radar charts is possible to:

- examine which observations are most similar (weaknesses and strenghts);
- analyze if there are clusters of case studies;
- examine the relative values for a single data point (e.g., case study 2 is more adaptable and accessible but more costly etc.);
- locate similar points or dissimilar points;
- define the outliers if any.

The exploited variables are derived from direct data (collected, normalized and not processed) and indirect data (generated from the elaboration of collected data).
The values of all variables were computed on a scale from 1 to 100 (normalization) in order to observe the radar chart in a reasonable and uniform manner.

The parameters used in our analysis are:

- Construction cost;
- Construction time;
- Gross Leaseable Area;
- Quality of Location and Equipment;
- Adaptability;
- Layout of spaces and functions;
- Predisposition to refurbishment.

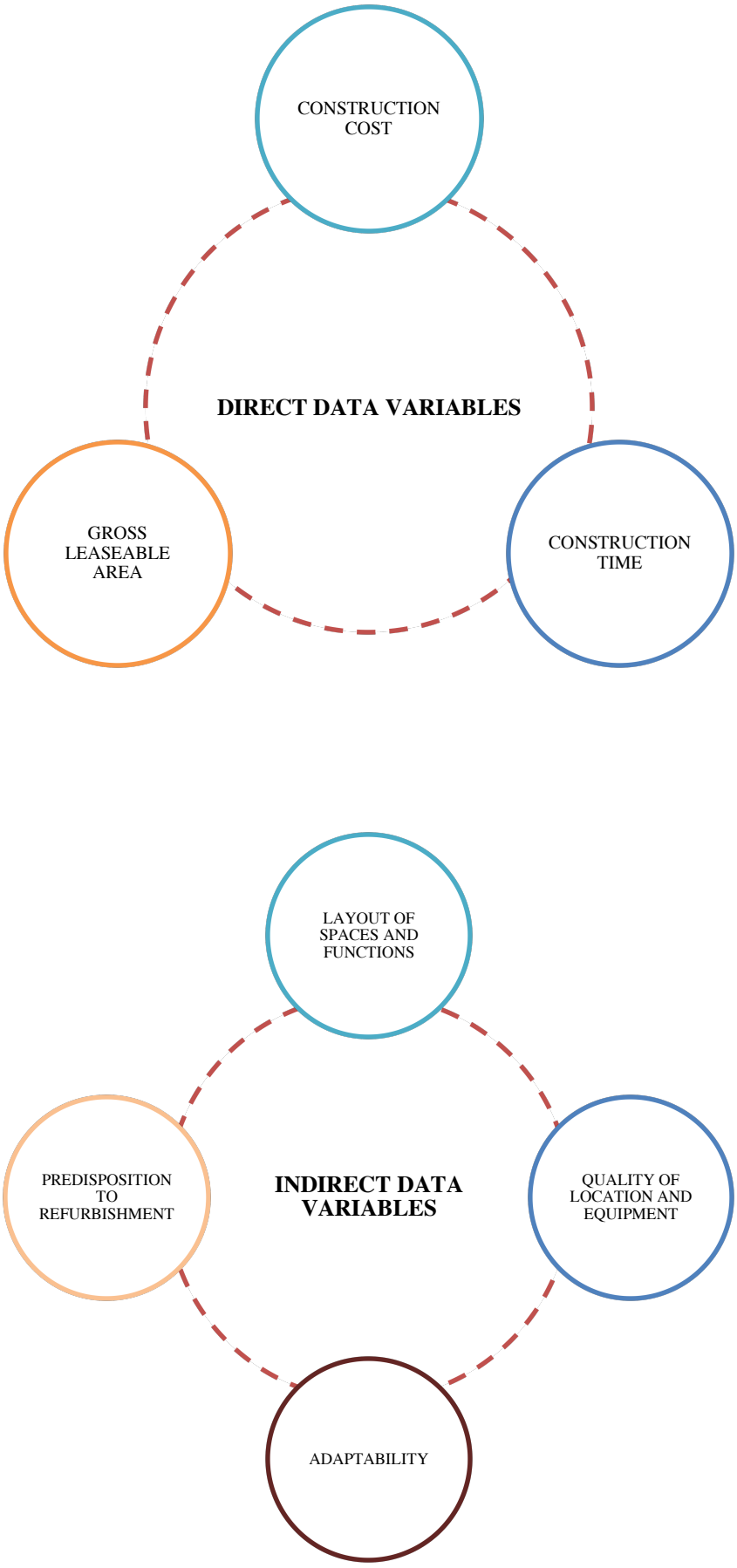


FIG. 45 - Schematic representation of the direct and indirect variables analyzed

The descriptions of construction time, construction cost and gross leaseable area variables, with the related maximum values, are presented in chapter 5.2; instead the indirect data variables procedures are described as follow:

QUALITY OF LOCATION AND EQUIPMENT

The following parameter refers to the area and the context where it is located the building and serves to indicate the level of efficiency of the site in terms of accessibility, ecological quality and bicycle parking.

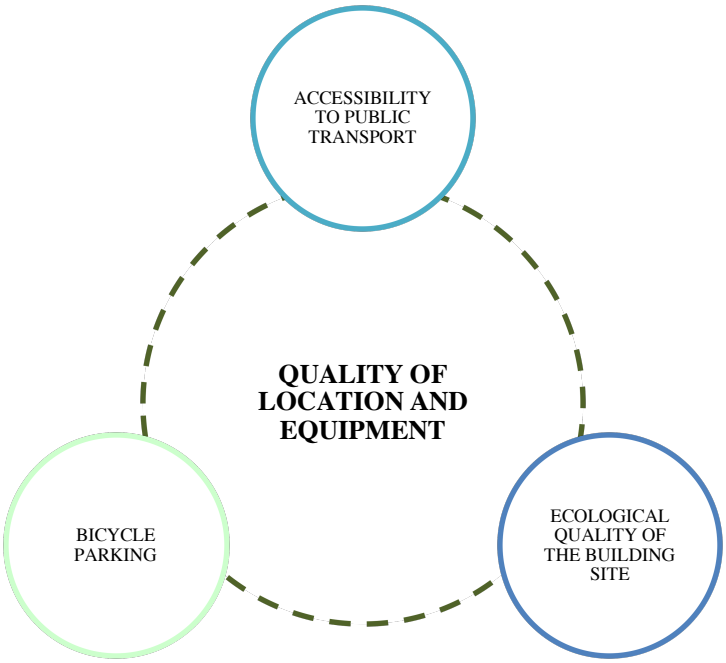


FIG. 46 - Schematic representation of the main adaptable features

The ecological quality is evaluated based on the presence of green areas, urban vent areas and according to air quality, and it is evaluated on a scale from 1 to 100 as for bicycle parking.

In order to define the level of accessibility to public transport has been created a reference value that is derived from the ratio of the number of infrastructures within 1.5 km (tram, bus, subway) and the number of kilometers away from the building to the historical center. In order to uniform the value of the presence of a tram-bus with the value of the presence of a subway, which should lead to a higher level of accessibility of the site, has been given

a value equal to 4 tram-bus (number of subway lines in Milan) if the subway is 1–2 km away from the site and a value of 8 tram – bus if the subway is far less than 1 km (because the advantage can be considered doubled).
For the case studies located in the historical center, where then "distance to the center" value was almost nil, while that of infrastructure resulted high producing an "accessibility" value much higher than average, it was given a value of "accessibility" maximum equivalent to 4.14, corresponding to twice the average value of the ratio of public transports and distance from the center (extracted from the sample of case studies).
Subsequently, the values of "accessibility" were normalized (in a scale from 1 to 100) using 4.14 as the maximum value.
Next, each parameter (accessibility, ecological quality and bicycle parking) is weighted using AHP method (explained in chapter 6.3) to give a different weight of each parameter value on the final score of “Quality of location and equipment”.

The weights obtained through AHP calculator are as follow:

1. ACCESSIBILITY TO PUBLIC TRANSPORT = 71%
2. ECOLOGICAL QUALITY OF THE BUILDING SITE = 23%
3. BICYCLE PARKING = 6%

It is given more importance to the accessibility of public transport because the buildings are located in former industrial areas (if not yet active) and thus have a relatively low ecological quality. That being said, however, we must emphasize the fact that this environmental aspect with the passing of years will be increasingly important, and the same goes for the presence of bicycle parking as it is supposed to be used more frequently in the future (as is happening in the big cities of northern europe) and so this factor will be increasingly important in the equipment of a building.

In the attached table n. 7 shows the specifications values attributed to each case study for each parameter and the final score of “Quality of location and equipment”.

LAYOUT OF SPACES AND FUNCTIONS

The parameter is extrapolated from the ratio between the gross rentable area and the number of interior spaces; the value obtained is subsequently used as the reference for assigning a score ranging from 1 to 100 and which indicates the level of subdivision of the interior space, from low structured (33) to very structured (100).

The following parameter has been extrapolated in order to give a greater adaptive reuse value to projects where there is a high division of space and in which highly adaptable elements have been used (removable structures) that not hinder a high adaptability of buildings.

LAYOUT OF SPACES AND FUNCTIONS	VERY STRUCTURED	100
	STRUCTURED	67
	LOW STRUCTURED	33

FIG. 47 - Schematic representation of the assessment ranges of layout of spaces and functions

PREDISPOSITION TO REFURBISHMENT

The following parameter assesses the brownfield capacity to be retrained and, starting from a maximum score of 100 points, each type of operation required (remediation of the site, new construction, structural restoration, retrofit) diminishes the final score of 25 points, going from a low predisposition to refurbishment of 20 points to a high predisposition of 80 points.

PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD (100 POINTS)	DISPOSAL OF HARMFUL MATERIAL	-20
	RESTORATION	-20
	STRUCTURAL RETROFIT	-20
	NEW CONSTRUCTION	-20

FIG. 48 - Schematic representation of the assessment ranges of layout of predisposition to refurbishment of the brownfield

ADAPTABILITY

The variable adaptability is assessed on the basis of the FLEX score which is then normalized using the maximum value of 157 points. The flex analysis procedure is described in chapter 6.1.

	FLEX LIGHT 2.0					
TECNOPOLO DI REGGIO EMILIA						
LAYER	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION	1				4	4
2.STRUCTURE	2				4	8
	3				4	12
	2				4	8
	3				4	12
	3				4	12
	1				4	4
3.SKIN	3			3		9
4. FACILITIES	2				4	8
	2				4	8
	3				4	12
	2				4	8
5. SPACE PLAN/FINISHING	3				4	12
	1				4	4
	3				4	12
	3				4	12
	3				4	12
				Total Adaptivity score:		157
				Adaptivity Class:		4

FIG. 49 – Evaluation board of the case study with the maximum value

6.3 AHP WEIGHTING OF CONSIDERED PARAMETERS

The case studies are subsequently classified according to a score ranging from 1 to 100 that define the best and the worst case studies in terms of adaptive reuse.
The following score is derived from the sum of the parameters values obtained after the data have been normalized. Each variable is elaborated through the AHP technique (Analytic Hierarchy Process) where a numerical weight or priority is derived for each parameter, allowing diverse data to be compared to one another in a rational and consistent way; the sum of the weighted variables is the final score of adaptive reuse of each case study.

HOW THE AHP WORKS

The AHP considers a set of evaluation criteria, and a set of alternative options among which the best decision is to be made. It is important to note that, since some of the criteria could be contrasting, it is not true in general that the best option is the one which optimizes each single criterion, rather the one which achieves the most suitable trade-off among the different criteria. The AHP generates a weight for each evaluation criterion according to the decision maker's pairwise comparisons of the criteria. The higher the weight, the more important the corresponding criterion. Next, for a fixed criterion, the AHP assigns a score to each option according to the decision maker's pairwise comparisons of the options based on that criterion. The higher the score, the better the performance of the option with respect to the considered criterion. Finally, the AHP combines the criteria weights and the options scores, thus determining a global score for each option, and a consequent ranking. The global score for a given option is a weighted sum of the scores it obtained with respect to all the criteria.

The figure below represents our AHP process in which it can be seen how the different parameters have been evaluated compared in terms of the importance of one over another.

AHP-OS Home Latest News username or email password Log in (forgot?) Register

BPMSG AHP Online System

AHP Priority Calculator

Select number of criteria:

Input number and names (2 - 20) 7 Go OK

Pairwise Comparison AHP priorities

21 pairwise comparisons. Please do the pairwise comparison of all criteria. When completed, click *Check Consistency* to get the priorities.

Which criterion with respect to *AHP priorities* is more important, and how much more on a scale 1 to 9?

	A - Importance - or B?			Equal	How much more?
1	○ QUALITY OF LOCATION AND EQUIPMENT	or	◉ ADAPATABILITY	○ 1	○ 2 ○ 3 ◉ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9
2	◉ QUALITY OF LOCATION AND EQUIPMENT	or	○ CONSTRUCTION COST	○ 1	◉ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9
3	◉ QUALITY OF LOCATION AND EQUIPMENT	or	○ COSTRUCTION TIME	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ◉ 7 ○ 8 ○ 9
4	◉ QUALITY OF LOCATION AND EQUIPMENT	or	○ LAYOUT OF SPACES AND FUNCTIONS	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ◉ 7 ○ 8 ○ 9
5	◉ QUALITY OF LOCATION AND EQUIPMENT	or	○ PREDISPOSITION TO REFURBISHMENT	○ 1	○ 2 ◉ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9
6	◉ QUALITY OF LOCATION AND EQUIPMENT	or	○ GROSS LEASEABLE AREA	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ◉ 6 ○ 7 ○ 8 ○ 9
7	◉ ADAPATABILITY	or	○ CONSTRUCTION COST	○ 1	○ 2 ○ 3 ◉ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9
8	◉ ADAPATABILITY	or	○ COSTRUCTION TIME	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ◉ 7 ○ 8 ○ 9
9	◉ ADAPATABILITY	or	○ LAYOUT OF SPACES AND FUNCTIONS	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ◉ 7 ○ 8 ○ 9
10	◉ ADAPATABILITY	or	○ PREDISPOSITION TO REFURBISHMENT	○ 1	○ 2 ○ 3 ○ 4 ◉ 5 ○ 6 ○ 7 ○ 8 ○ 9
11	◉ ADAPATABILITY	or	○ GROSS LEASEABLE AREA	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ◉ 7 ○ 8 ○ 9
12	◉ CONSTRUCTION COST	or	○ COSTRUCTION TIME	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ◉ 6 ○ 7 ○ 8 ○ 9
13	◉ CONSTRUCTION COST	or	○ LAYOUT OF SPACES AND FUNCTIONS	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ◉ 7 ○ 8 ○ 9
14	◉ CONSTRUCTION COST	or	○ PREDISPOSITION TO REFURBISHMENT	○ 1	○ 2 ○ 3 ◉ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9
15	◉ CONSTRUCTION COST	or	○ GROSS LEASEABLE AREA	○ 1	○ 2 ○ 3 ○ 4 ○ 5 ◉ 6 ○ 7 ○ 8 ○ 9
16	○ COSTRUCTION TIME	or	◉ LAYOUT OF SPACES AND FUNCTIONS	○ 1	◉ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9
17	○ COSTRUCTION TIME	or	◉ PREDISPOSITION TO REFURBISHMENT	○ 1	○ 2 ○ 3 ○ 4 ◉ 5 ○ 6 ○ 7 ○ 8 ○ 9
18	○ COSTRUCTION TIME	or	◉ GROSS LEASEABLE AREA	○ 1	○ 2 ◉ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9
19	○ LAYOUT OF SPACES AND FUNCTIONS	or	◉ PREDISPOSITION TO	○ 1	○ 2 ○ 3 ◉ 4 ○ 5 ○ 6 ○ 7 ○ 8

		REFURBISHMENT		9
20	LAYOUT OF SPACES AND FUNCTIONS	or GROSS LEASEABLE AREA	1	2 **3** 4 **5** 6 **7** 8 **9**
21	PREDISPOSITION TO REFURBISHMENT	or GROSS LEASEABLE AREA	1	2 **3** 4 **5** 6 **7** 8 **9**

CR = 9% OK

Check Consistency | AHP | Balanced scale | Download_(.csv) | dec. comma

AHP Scale: 1- Equal Importance, 3- Moderate importance, 5- Strong importance, 7- Very strong importance, 9- Extreme importance (2,4,6,8 values in-between).

Priorities

These are the resulting weights for the criteria based on your pairwise comparisons

Category		Priority	Rank
1	QUALITY OF LOCATION AND EQUIPMENT	21.1%	2
2	ADAPATABILITY	41.0%	1
3	CONSTRUCTION COST	18.3%	3
4	COSTRUCTION TIME	2.5%	7
5	LAYOUT OF SPACES AND FUNCTIONS	3.0%	6
6	PREDISPOSITION TO REFURBISHMENT	9.4%	4
7	GROSS LEASEABLE AREA	4.7%	5

Decision Matrix

The resulting weights are based on the principal eigenvector of the decision matrix

	1	2	3	4	5	6	7
1	1	0.25	2.00	7.00	7.00	3.00	6.00
2	4.00	1	4.00	7.00	7.00	5.00	7.00
3	0.50	0.25	1	6.00	7.00	4.00	6.00
4	0.14	0.14	0.17	1	0.50	0.20	0.33
5	0.14	0.14	0.14	2.00	1	0.25	0.33
6	0.33	0.20	0.25	5.00	4.00	1	4.00
7	0.17	0.14	0.17	3.00	3.00	0.25	1

Number of comparisons = 21
Consistency Ratio CR = 9.0%

Principal eigen value = 7.723
Eigenvector solution: 7 iterations, delta = 6.5E-9

FIG. 50- AHP CALCULATOR REPORT – pairwise comparison

RESULTED WEIGHTS

The weights obtained through the AHP Calculator, for the analyzed parameters, are as follow:

1. ADAPTABILITY = 41%
2. QUALITY OF LOCATION AND EQUIPMENT = 21%
3. CONSTRUCTION COST= 18.3%
4. PREDISPOSITION TO REFURBISHMENT = 9.4%
5. GROSS LEASEABLE AREA = 6.2%
6. LAYOUT OF SPACES AND FUNCTIONS = 3%
7. CONSTRUCTION TIME = 2.5%

The weights resulting from AHP calculator reflect the value and importance that is given to the "Adaptability" parameter of all, this is because the type of building (industry) must impose its own set redevelopment on the theme of adaptability first of all, taking advantage of the architectural features in its possession. The second parameter in terms of weight turns out to be the “Quality of location and equipment”, confirming the broad analysis on the issue of accessibility to public transport. This is because often the industrial buildings are incorporated in the urban fabric and can be located close to infrastructure networks that will significantly benefit the accessibility of the site, increasing markedly the economic lifecycle of the building and the market value accordingly. A further parameter that turns out to be important is the “construction cost” which may become the kingmaker in the decision-making process and therefore in the decision on the type of intervention to be applied or opt for demolition. Of limited importance were found to be the “layout of spaces and functions” and the “construction time” because they do not determine an effective constraint in decision-making (if not in size out of the ordinary).

ADAPTIVE REUSE SCORES

The adaptive reuse scores confirmed in large part the results obtained in Flex analysis. The resulted highest score is 84 (Tecnopolo di Reggio Emilia), while the lowest score is 53 which has been obtained in two case studies (Fabbrica della Ruota and Biblioteca EFFEMME23). On a regional basis, the region with the highest average score of adaptive reuse is found to be the Emilia Romagna with an average score of 78 points, primarily due to the quality of the location, the quality of the projects and their level of adaptability.

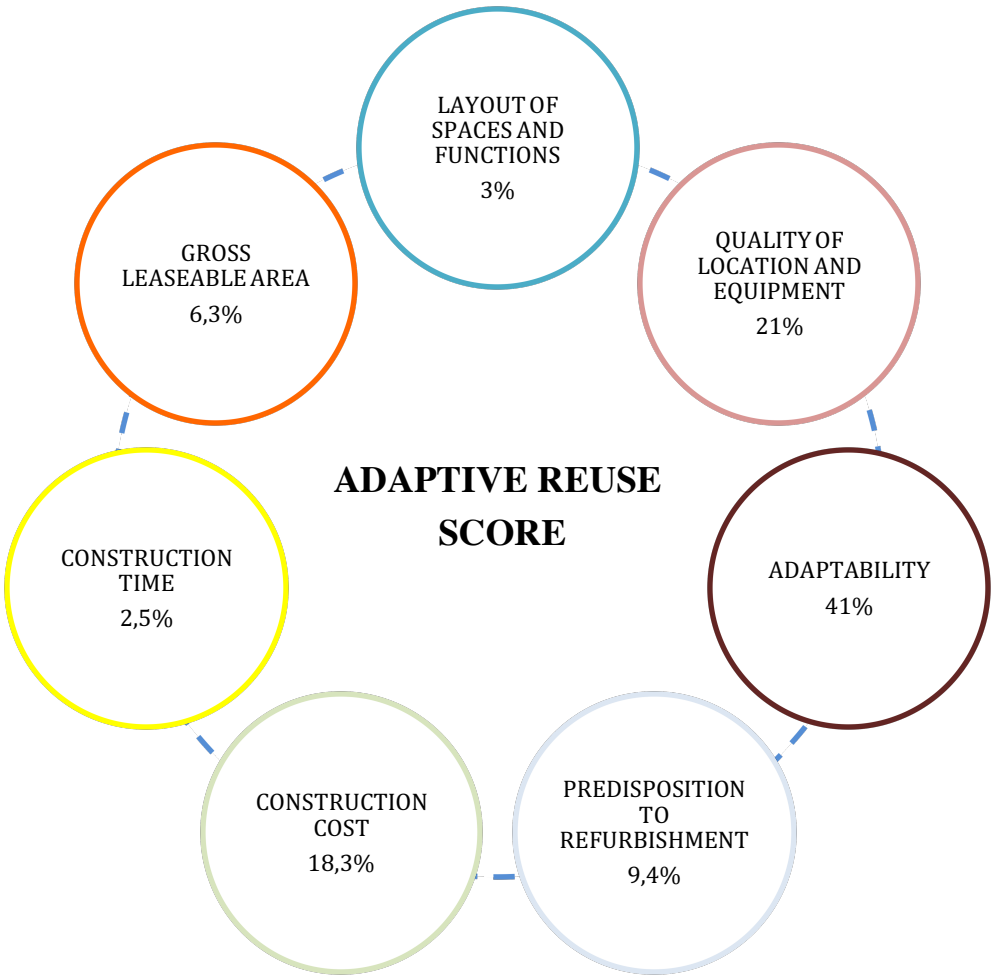


FIG. 51 – Representation of the parameters and their percentage that constitute the ADAPTIVE REUSE SCORE

MINIMUM SCORE

The lowest score of adaptive reuse obtained (53) is that of "Fabbrica della Ruota" located in Pray Biellese and that of "Biblioteca EFFEMME23" located in Moie in the Province of Ancona.

No common factors have been observed in the two case studies that led to such a low score. As for "La Fabbrica della Ruota" the binding factors are:

- low accessibility to the site 8/100 (it is located in an area strictly rural and is situated about 3.2 kilometers from the nearest urban center);
- Low level of adaptability 47/100 (primarily due to its supporting structure characterized by a network of pillars which limits the usability of spaces).

As for the case study "Library EFFEMME23", there are two other binding factors, namely:

- high construction costs (around 4,000 € / sq m due to poor structural conditions in which was the brownfield);
- predisposition to redevelopment, definitely low that justifies in part the construction costs incurred (most of the bearing structures were built by new and were needed remediation of the site interventions for the disposal of harmful materials.

MAXIMUM SCORE

The top score of adaptive reuse obtained (84) is that of “Tecnopolo di Reggio Emilia”, and it’s the same score at the top obtained in Flex Analysis. The following score is mainly due to:

- excellent location close to the city center (about 1.8 km from the historic center);
- high ecological quality of the area (it is located adjacent to a public park);
- excellent public transport accessibility (about 10 means of transport in the area of 1 km);
- Low cost of construction per square meter (about 1000 € / sq.m);
- high adaptability of structures and spaces (FLEX score 159): the subdivision of the space is via independent and reversible modules (boxes of solid wood) both

structurally and thermally increasing the surfaces available and enhancing the public indoor space.

A very important data reference comes from the comparison between the "layout of spaces" scores and FLEX scores (adaptability scores), in fact a high score in both parameters means that in the reuse process have been used components with highly adaptable characteristics.

REGION	N°	CASE STUDY	ADAPTIVE REUSE SCORE
PIEMONTE	1	MUSEO DEI CAMPIONISSIMI	62
	2	CASA ZERA	76
	3	QUARTIERE AURORA	68
	4	LA CASA DEI PRODUTTORI	60
	5	MUSEO ETTORE FICO	63
	6	FONDAZIONE MERZ	67
	7	FABBRICA DELLA RUOTA	53
	8	FONDAZIONE PISTOLETTO	64
LOMBARDIA	1	FONDAZIONE PRADA	63
	2	ARMANI SILOS	55
	5	MASSIMIANO 25	60
	6	LAP: LAMBRETTO ART PROJECT	70
	7	GALLERIA ZERO	66
	8	RESEARCH AND DEVELOPMENT CENTER	78
	9	EX TESMEC AREA	76
	10	L'ARSENALE - EDIFICIO PER LABORATORI	59
	11	BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	72
	12	GALLERIA MASSIMO DE CARLO	66
	13	VIA CASCIA 6 – EX GIO' STYLE	64
	14	VIA VENTURA 3,5,15	76
	15	OFFICINE DEL VOLO	66
	16	PIRELLI HANGAR BICOCCA	74
	17	FRIGORIFERI MILANESI	77
	18	LA FABBRICA DEL VAPORE	78
LIGURIA	1	NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	62
	2	IMMOBILE CONCORDE	61
EMILIA ROMAGNA	1	AUDITORIUM NICCOLO' PAGANINI	78
	2	OPIFICIO GOLINELLI	70
	3	SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	82

	4	SCUOLA MEDIA - EX FORNACE (RICCIONE – RI)	73
	5	VIA PASUBIO 3	79
	6	TECNOPOLO DI REGGIO EMILIA	84
	7	CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	71
	8	MINO OSTELLO DELLA GIOVENTU'	77
TRENTINO ALTO ADIGE	1	NEW SWS OFFICE BUILDING	63
FRIULI VENEZIA GIULIA	1	POLO MUSEALE DEL PORTO DI TRIESTE	63
VENETO	1	THE CONTERIE	61
	2	MTMA SPAZIO ZEPHIRO	74
	3	POLO UNIVERSITA' DI VERONA	76
	4	ATELIER EERA	66
	5	AUDITORIUM LO SQUERO	58
MARCHE	1	BIBLIOTECA EFFEMME23	53
UMBRIA	1	CENTRO ARTIGIANALE	66
	2	THE BURRI COLLECTION	80
TOSCANA	3	GALLERIA PROJECT GENTILI	70
	4	MUSEO DEL TESSUTO	59
	5	PRATO LOFTS	72
LAZIO	1	LANIFICIO - STUDIO KAMI	57
	2	MACRO TESTACCIO	78
PUGLIA	1	CANTIERI TEATRALI KOREJA	55
SICILIA	1	CENTRO FIERISTICO LE CIMINIERE	68
	2	MUSEO TECNOLOGICO DEL LATERIZIO	56
	3	ZO CULTURE	68

TAB.6 – Adaptive reuse scores and maximum (yellow) and minimum (red) scores

6.4 RESULTS DIVIDED BY TERRITORIAL AREAS

To compare data and performance obtained from each case study, we used the radar chart, that consists of a sequence of equi-angular spokes, with each spoke representing one of the variables, for each case study we compared the seven most significant parameters in the field of adaptive reuse. These parameters or variables, as previously presented are:

- The quality of location and equipment
- Layout of spaces and functions
- Construction time
- Gross leasable area
- Predisposition to refurbishment of the brownfield
- Construction cost
- Adaptability

The data length of a vertex is proportional to the magnitude of the variable for the data point relative to the maximum magnitude of the variable across all data points, a line is drawn connecting the data values for each vertex. In total we have developed ten radar chart divided by macro regions.

PIEMONTE

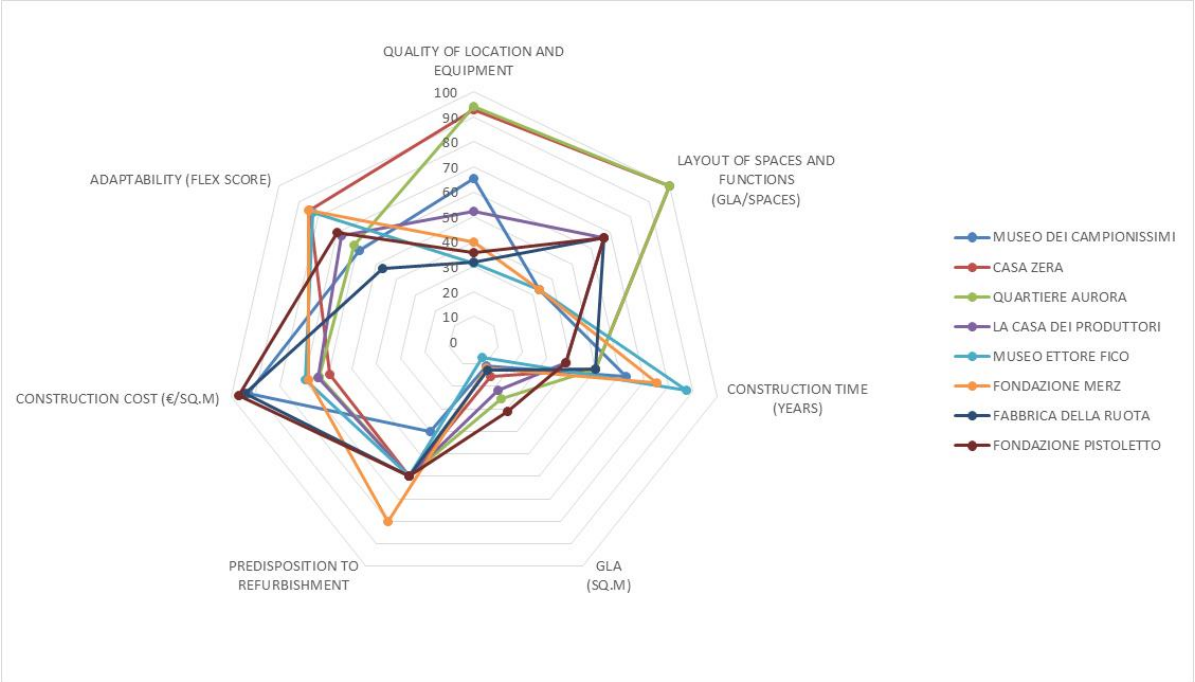


FIG. 52- AHP CALCULATOR REPORT – pairwise comparison

In Piedemont we have eight case studies, and as we can see is a very homogeneous group of data for a lot of variables. Especially with regard to the gross leasable area we have a maximum value for the "Fondazione Pistoletto" with 8500 square meter of free space, but this data is not too high compared to the performances of the other regions, this case study also in construction cost exceeds the other piedmont case, the total cost for each square meter cost less than 130 euro, this is due to an investment of abut one million euros for a lot of free square meter available for exhibitions and performances.

For what concerns the adaptability variable, that include more factors even here there is a certain homogeneity, there are a number of very adaptable buildings that received a relatively high score, they are located in class 3 and in class 4 with the score of "good adaptive", you think about "Fondazione Merz" and "Casa Zera" which are the cases that have obtained the highest score, are project where at the design phase it was thought already to a re-use and to a future customization.

In the field of quality of the location and equipment with regard to the accessibility, the best score was achieved by the "Quartiere Aurora", which is located in an area well served as regards the accessibility, for the presence of infrastructure and public services. For the ecological quality of the site, the presence of a park and a bike path rise the final score up to 94 point.

LOMBARDIA

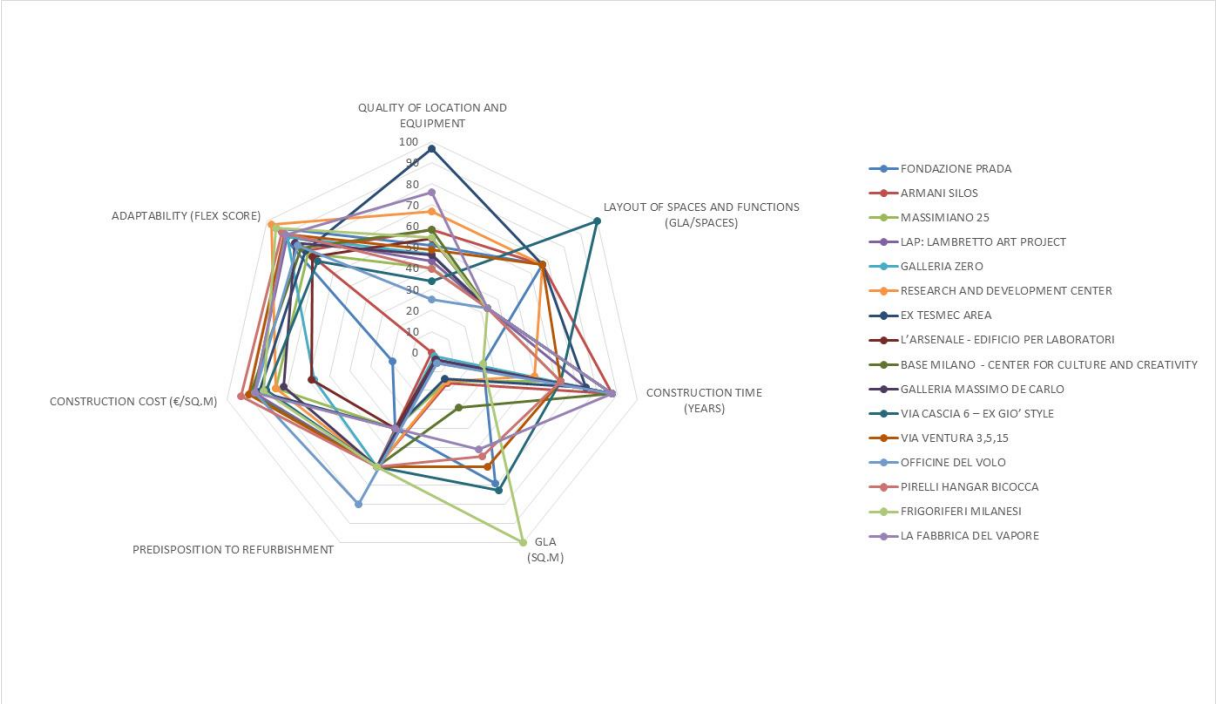


FIG. 53- AHP CALCULATOR REPORT – pairwise comparison

This is the region where we have collected the largest number of case studies, sixteen in all, many of them, like "Fondazione Prada" and "Armani silos" are close to or nearby the city of Milan and the rest spread across the region. As we can see from the graph we obtained different scores for each parameter, the adaptability is the only one that is constant in all cases, with a very high average score, almost all buildings fall into the fourth class of adaptability. Regarding the presence of green and the quality of location the best result was achieved from the Ex Tesmec building with a score of 97, instead of the "Officine del Volo" with the minimum result due to the lack of green presence and the poor infrastructures service in the surrounding area. For the distribution of space there is a certain homogeneity, the only outsize data is the ex Giò style building because is very structure and this complicates things when we go for an adaptive reuse. Also the construction time turns out to be proportionate in all cases except for Via Cascia or ex "Gio Style" that to make it were takes 12 years, the maximum among all cases study, following "Frigoriferi Milanesi" and "Prada foundation" with 6 years for the realization of the project.

A very important parameter in Lombardy is certainly the GLA, among all cases study in

this region we have the largest number of buildings with a high average value of the free floor space, for example the case “Frigoriferi Milanesi” with its 27500 square meters of free available area is the building with the maximum score of 100, following with the score of 73 of the Ex Giò Style building with 20000 available square meter and Prada foundation with 18900 of gross leasable area for a score of 69.

The unit variable cost shows an inhomogeneous trend, the Armani silos case which has a zero score is due to the initial investment that greatly exceeds all other projects when compared to the square meters available inside the building this is due to the large capital provided by the Armani Corporation more precisely we speak of 50 million euros for 4500 square meters, Prada on the other hand for the foundation has invested 10 million euros more, but we speak of a 18,900 square meter building.

LIGURIA

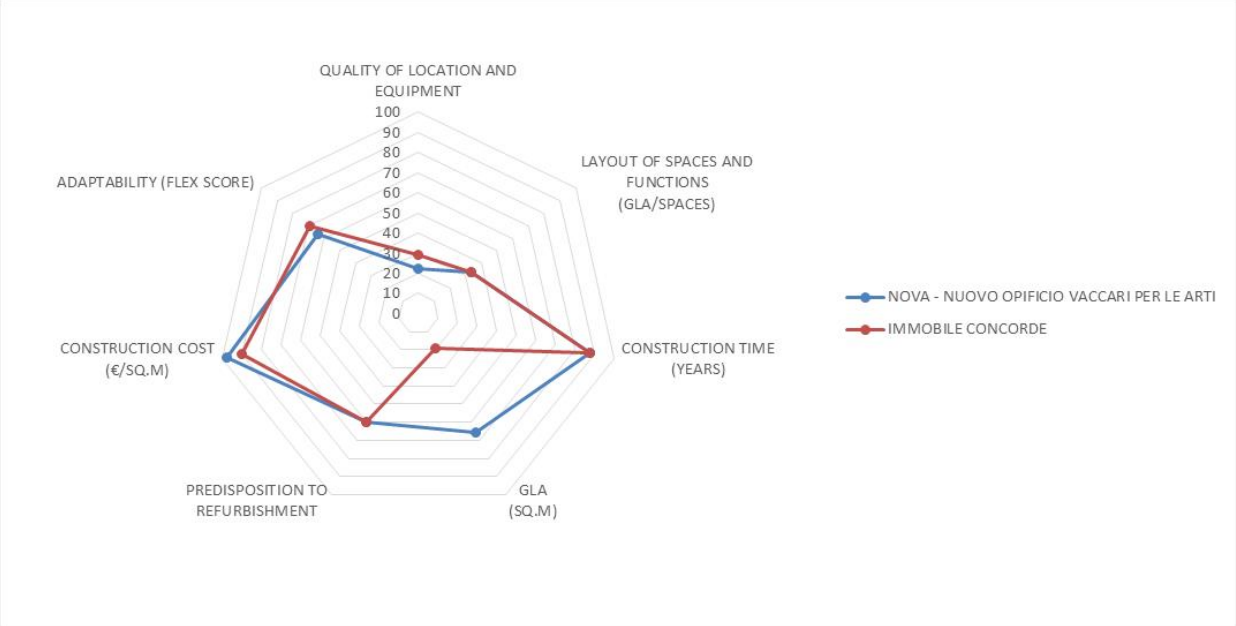


FIG. 54- AHP CALCULATOR REPORT – pairwise comparison

In this radar chart we have the opportunity to directly compare two case studies "Nova" and "Immobile Concorde" as we can see almost all of the variables have a constant trend, instead of the construction cost and the GLA. This inequality is due to the internal characteristics of the two buildings, the ex "Opificio Nova" has a huge free area of about 18,000 square meters, however the building "Concorde" longer falls within the national average with not even a third of the Nova's GLA this data also affects directly the construction cost of the two cases marking a clear distinction. The Flex score and the other parameters are low compared with the rest of Italy.

EMILIA ROMAGNA

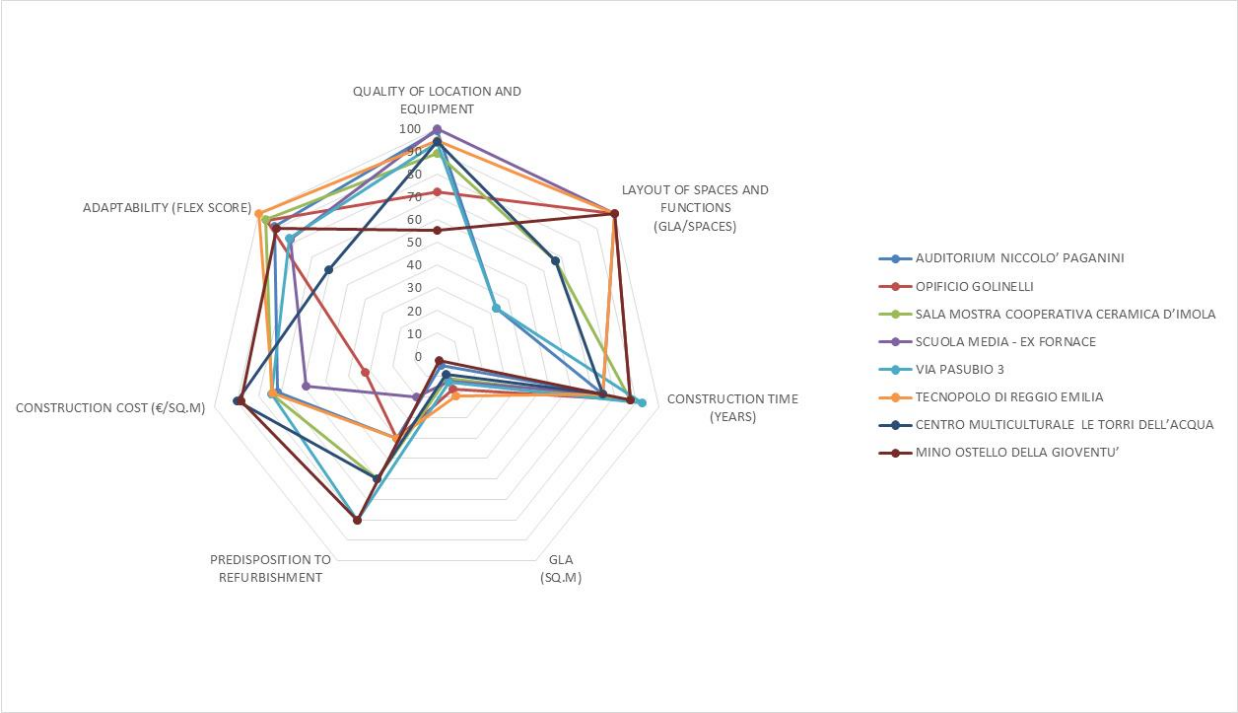


FIG. 55- AHP CALCULATOR REPORT – pairwise comparison

In Emilia Romagna we have eight case studies with a multitude of tendencies, as you can see from the chart there is a concentration of similar values in the GLA and in the time construction sector the data are nearly the same in this region. All buildings have a very good score for adaptability falling into the fourth class, we have to underline the performance of the "Tecnopolo of Reggio Emilia" which happens to be the highest value in Italy, this is due to the strong features that characterise this building there are the presence of great outdoors space or expandable site space, the surplus of free floor height, the day light facilities and the customisability and controllability of the space and of the facilities. These results were obtained thanks to the great capacity of adaptability of the building due to the accurate planning of the ex "Officine Reggiane" conducted by the architect Andrea Oliva. With regard to other aspects of the radar we find an almost constant trend, important variations only in the quality of the environment and in the presence of the green, the middle school "Fornace" of Riccione reaches the highest score due to the presence of parks, bike paths and public services in the surrounding areas, on the other hand, the "Mino" youth hostel has a low score due to the absence of public

services. For the construction cost there are very different values from the top to “Opificio Golinelli” where they have invested 12 million euros for the requalification to a smaller investment of only 1 million for the the multicultural center “Le Torri dell’acqua”, the average price in Emilia is about 1100 euro per square meter.

TRENTINO – FRIULI

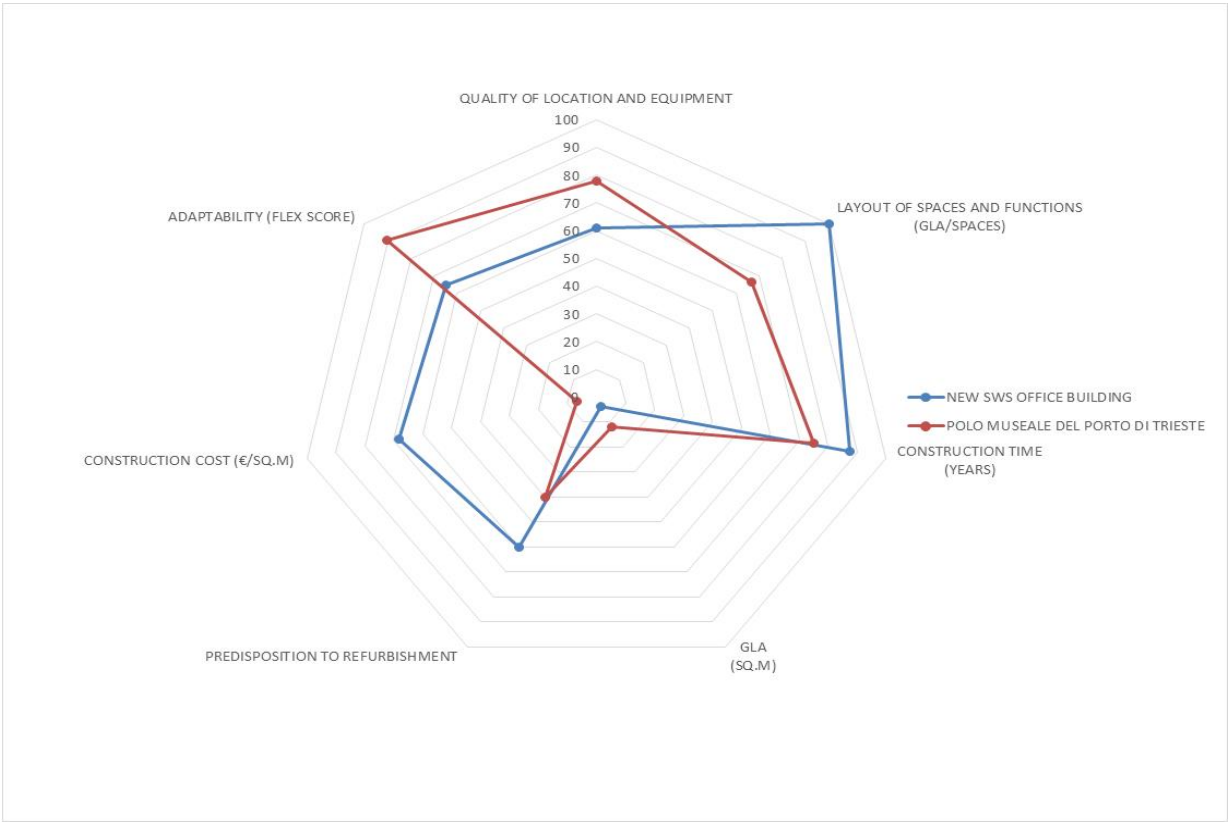


FIG. 56- AHP CALCULATOR REPORT – pairwise comparison

The fifth macro-region comprises the Trentino and Friuli Venezia Giulia, we compared two very similar cases, almost all parameters have the same trend, differing only in the construction cost and this inhomogeneity is due to the high initial investment for the realization of the museum in the port of Trieste, this recent public investment gives as result a high score of adaptability. The surface of both buildings is very low compared to the national average level, the Sws building has a leasable gross area of only 1000 square meters.

VENETO

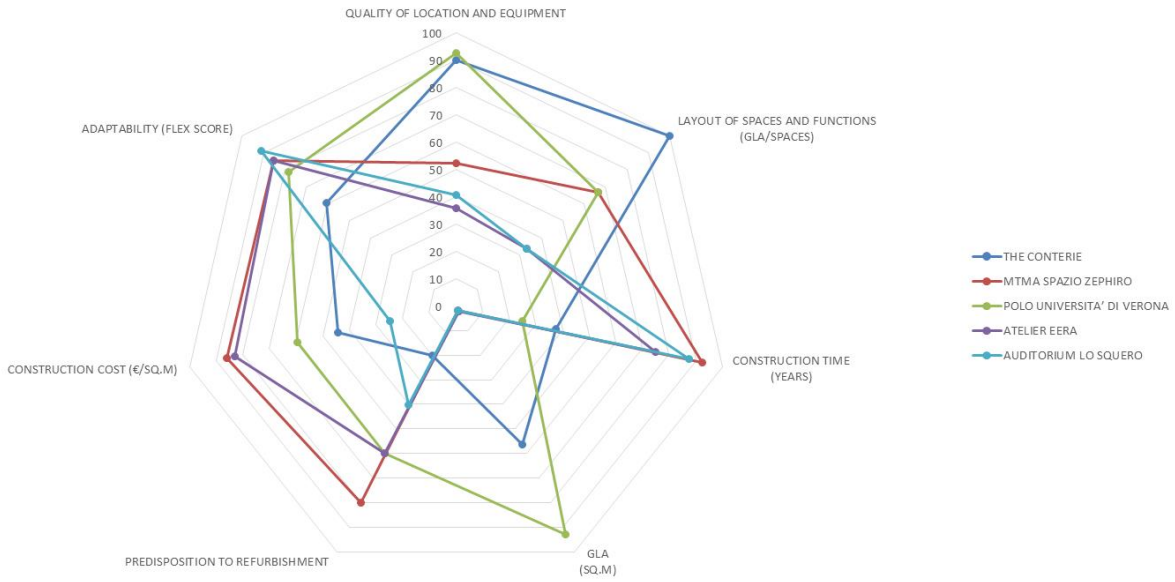


FIG. 57- AHP CALCULATOR REPORT – pairwise comparison

In Veneto we have five case studies all different with unique architectural features, the radar chart can then distinguish a lack of homogeneity in almost all the variables, the only one that seems to remain constant, or with a range of values between 70 and 90 is adaptability with the Flex score, the worst score belongs to “Conterie” of Venice, because it is a building fully made with red solid bricks.

With regard to the gda have a concentration for the opposite data, “the Conterie” and the university have large sizes compared to all other cases and also have a very high construction cost. Opposite values for “Space Zephiro” and “Atelier Eera” that have a low GLA, both measuring less than one thousand square meters, and have a very low construction cost about 500 euro for square meter, to underline the auditorim the “squero” has a trend different from all other cases it is a work cost much but realized in very little years and which has a very high adaptability.

MARCHE - UMBRIA

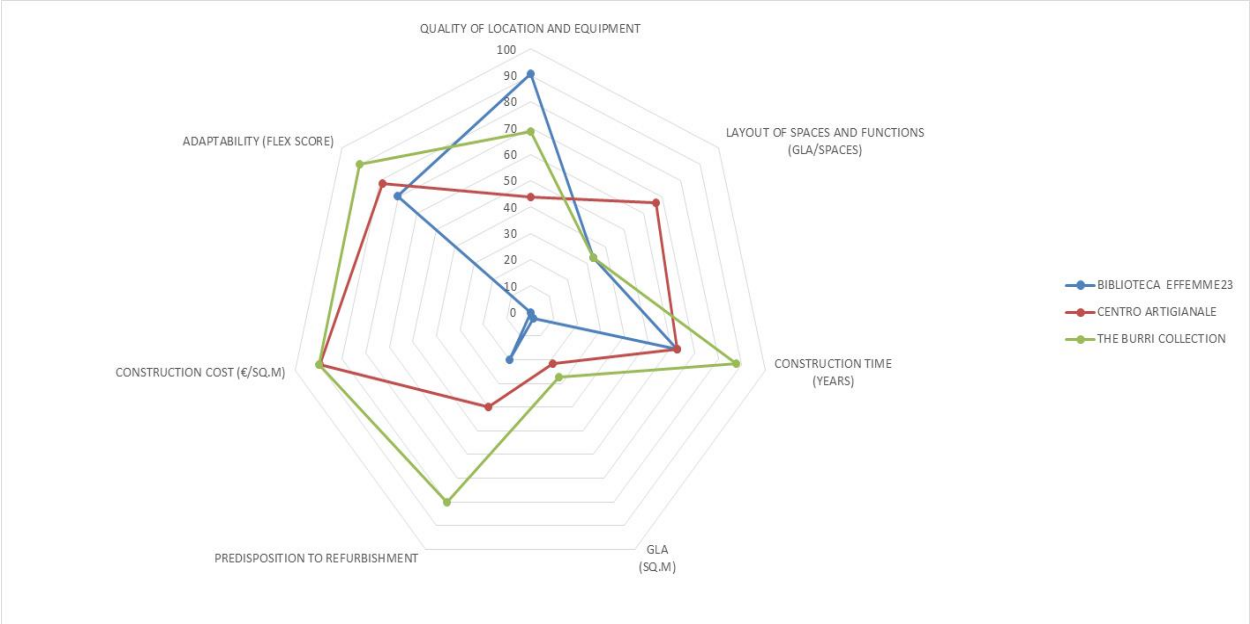


FIG. 58- AHP CALCULATOR REPORT – pairwise comparison

This macro category is composed by the regions of Marche and Umbria, we analyzed three case studies “Biblioteca Effemme23”, “Centro artigianale”, “The Burri Collection”. As can be understood from the spider chart we have a clear inhomogeneity in the evolution of Effemme23 buiding which has a low value in the construction cost, in the predisposition to refurbishment of the brownfield and in the GLA. The characteristics of the library as we have previously described show a high construction costs around 4000 euros for square meter due to poor structural conditions in wich was the building previous the intervention, another important factor is the predisposition to redevelopment, definitely low that justifies in part the construction costs incurred because most of the load bearing structures were built by new and on the site interventions were needed remediation and a drenaige for the disposal of harmful materials. “Burri collection” and “Centro artigianale” have a very similar trends, the same high value for construction cost and for correlation a small score in the field of GLA. Flex parameter is the only common value among for all of this cases with a total score much higher than the national average this shown a capacity of adaptable building.

TOSCANA

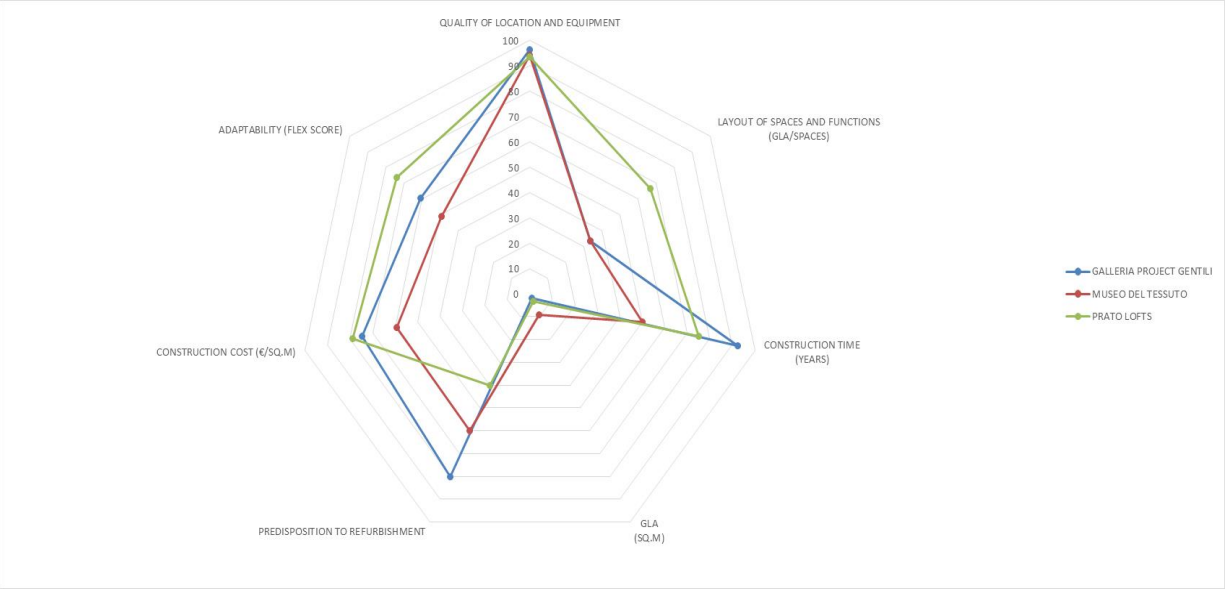


FIG. 59- AHP CALCULATOR REPORT – pairwise comparison

In Tuscany there are three different case studies that have very similar trend each other, the values of the quality of location, the GLA and the construction cost are almost identical. The loft in Prato appears to be the winning case study that best meets our requirements of adaptability, the only parameter thet is too small is the free available area with only 900 square meters.

As it regards “Museo del tessuto” has a low value in the adaptability due to the fact that it is a building with a limited floor area and for the layout of space and functions with a low structured inside, in this building there is a rectangular courtyard in the middle and an old cylindrical tower of smoke. The case of the gallery “Gentili” it's a very small space only 500 square meters with the ceiling truss in Piedmont style, this influence the Flex score that is very low and the gross leasable area.

LAZIO – PUGLIA

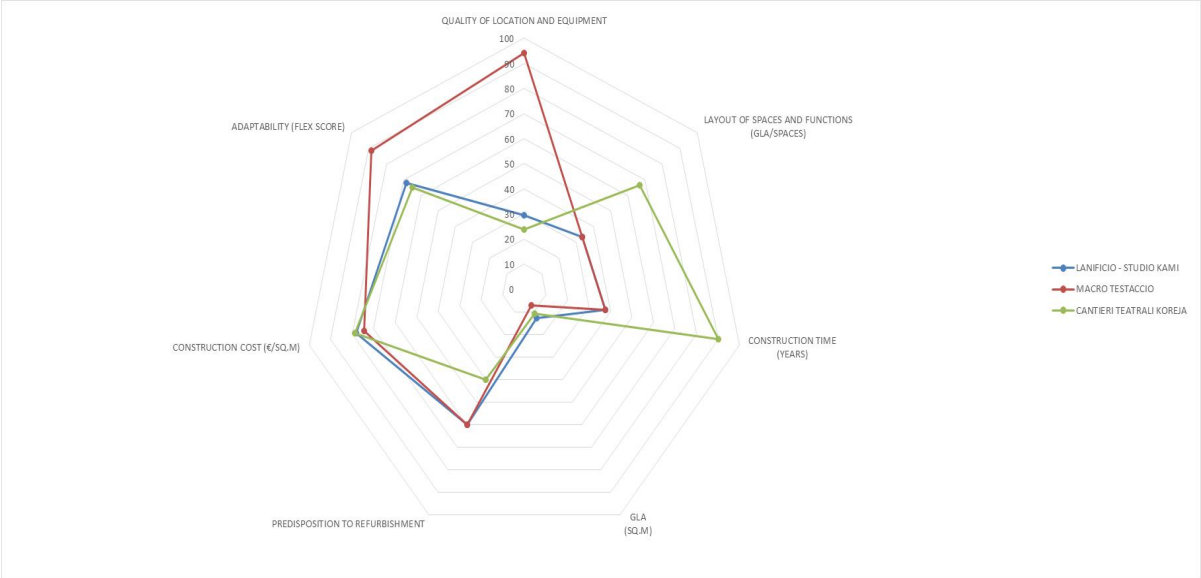


FIG. 60- AHP CALCULATOR REPORT – pairwise comparison

In the macro named Lazio Puglia we have different types of cases studies in different areas, all three have a very different trend each other, the only nearly identical parameters turn out to be the GLA that in all three cases appears to be very low, ranging from a value of 2000 square meters to 3500 for the "study Kami" and the costruction cost that has a high value in the spyder chart for all the cases, in fact, the minimum expenditure per square meter ranges from 833 for "Cantieri navali Korea "up to 1000 for the most expensive. For the other parameter it differs greatly and we can see the "Macro Testaccio" which has a very high value in the quality of location, because it is a well integrated project in the metropolitan area and has a high score for Flex thanks to the internal and external features of the building that allows a high adaptability due to high free space, appear to be very low the layout of space and functions and the predisposition to refurbishment. The remaining case studies have a very low total score that is given from the values for the quality of the location and layout of space and functions.

SICILIA

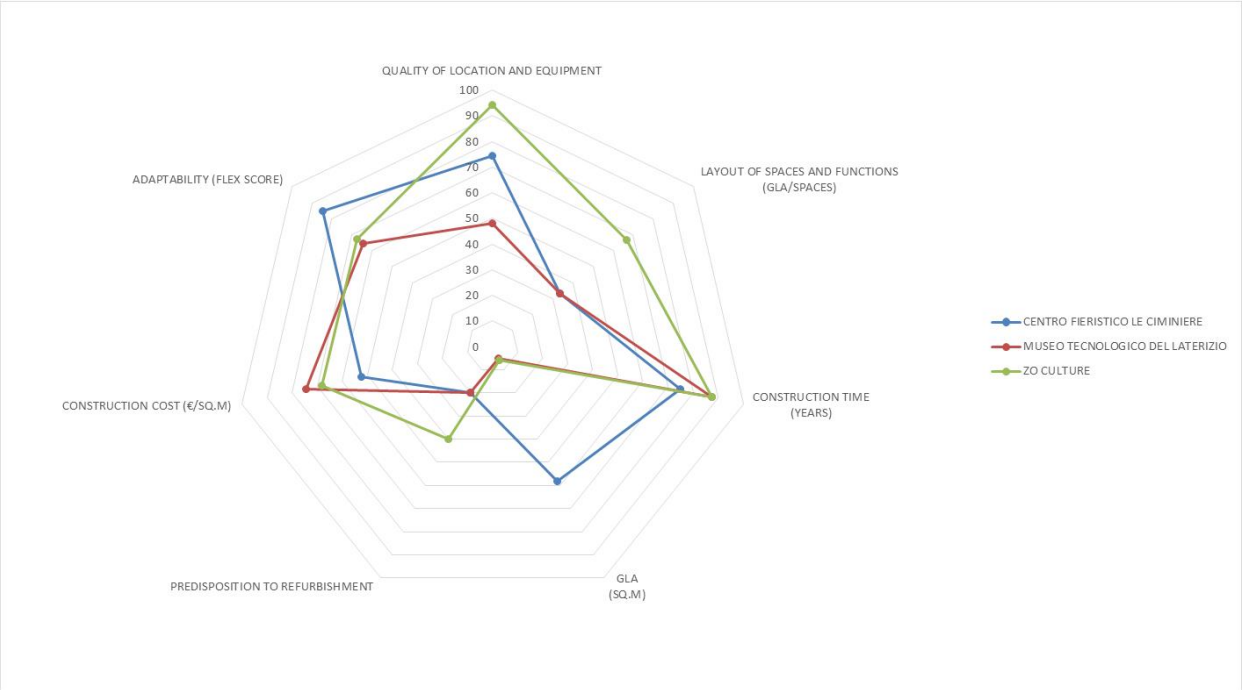


FIG. 61- AHP CALCULATOR REPORT – pairwise comparison

The last macro category is Sicily, here we can find three different case studies with a very different trend between them, have in common only the realization that it is public.

As for the total score the “Centro fieristico le ciminiere” is in first place, this success is due to the fact that to achieve it took a few years, only two and has high adaptability values thanks to the quality of location and equipment and to the big disposition of gloss available area, it remains in the national average for the cost of costruction.

The “Museo tecnologico del laterizio” that still is closed, has a very low total score, each value is considered to be below the national average. "Zo colture" instead has a high value in quality of location and equipment "and" layout of space and functions ", it took them only a year to build it because it is only 1600 square meters for a total of 2 million euro.

7. GUIDELINES PROPOSALS

In this chapter we present the proposals of best practices, that is, the experiences and the most significant procedures for adaptive reuse of industrial heritage, or in any case those that have yielded the best and the worst results in relation to adaptive reuse targets.
Subsequently are described and proposed adaptive reuse processes and methods, consistently with what has emerged from the previous analyzes, which are considered the most effective in achieving a particular result.

7.1 ADAPTABLE CHARACTERISTICS: BEST AND WORST PRACTICES

The characteristics can be divided into two basic phases:

- before the decision to intervene, that is the time when we must choose which abandoned industrial site is more suitable to be upgraded according to the requirements and therefore that point when you have to see the features into being of each building, and compare them with the requirements, in order to consistently choose the most appropriate site;
- after choosing the brownfield site, that is, when in the planning stage you have to decide how to act, what criteria and what methods to adopt to achieve a good result of adaptive reuse.

DECISION-MAKING PHASE: CHOOSING BETWEEN BROWNFIELDS

BEST AND WORST ADAPTABLE CHARACTERISTICS

The location has to be determined in relation to the presence of green areas in the vicinity, the presence of public transport and to reduce the financial risk it is necessary that has already been started a process of urban regeneration of the neighborhood or that there are, in the immediate nearby, others requalified industrial sites.

The public transport accessibility is a predominant factor of importance in cases where the intended use of the building and the economic lifecycle are strongly linked to the consumption and the passage of people (socio-cultural function, commercial function).
Also for this reason it is reccomended a ratio public transport and distance from the historical centre at least equal to 2 (2 tram/bus/metro lines every 1 km away from the historical centre).

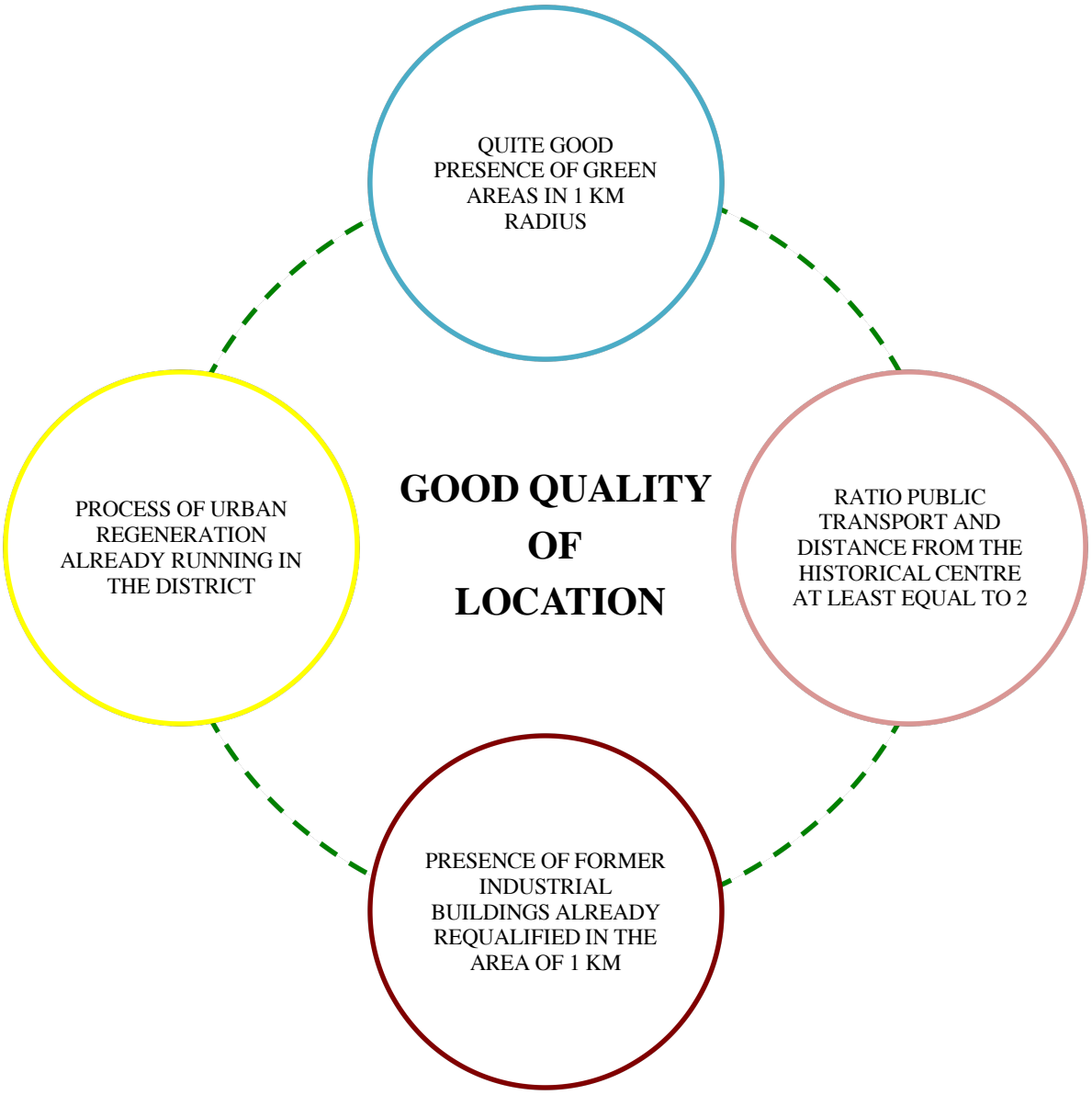


FIG. 62 – Representation of "QUALITY OF LOCATION" best practices

The low quality of the location is instead characterized by:

- a ratio between public transport and the distance from the historic center is less than 2 (less than 2 tram / bus per km);
- excessive distance from the urban center compared to the context and overly peripheral or isolated (especially strongly linked to the passage of people intended uses);
- absence of former industrial buildings requalified (higher financial risk);
- presence, in the district, of industrial buildings that are still active and therefore make more complicated the process of urban regeneration with much longer times and more volatile, thus increasing the investment financial risk;
- high urban congestion and absence of green areas;
- limited presence of parking areas for bicycles and cars.

The brownfield, in the choosing phase, should be also valued on its level of adaptability in being. To be considered adaptable, the building must have:

- elevated heights of the floors;
- extended space, better if on a single level;
- access points disposed in a functional way (position of the stairs, corridors, horizontal routings);
- removable facades;
- capacity to expand horizontally;
- high distinction between the supporting structure and the internal space;
- free internal space by partitions and free from hardly removable structures of any type;
- a pattern of pillars, if present, not bulky.

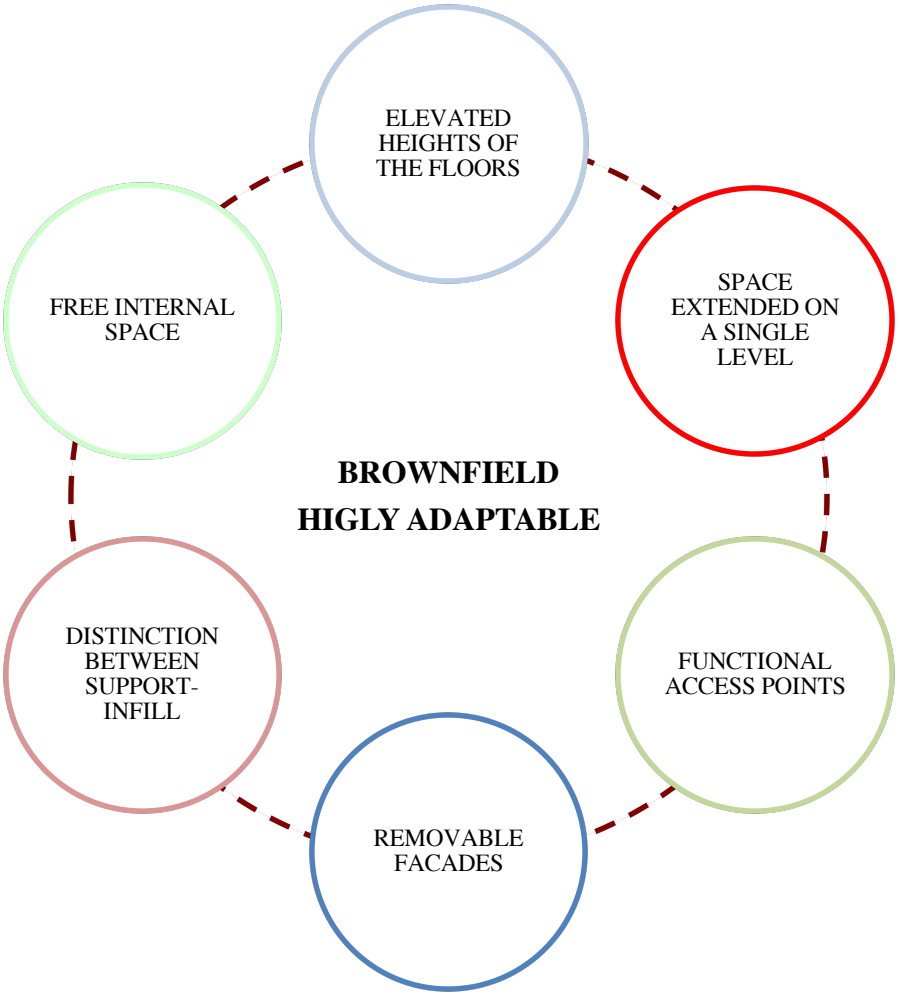


FIG. 63 – Characteristics of brownfield highly adaptable

Are instead low adaptable brownfields, those characterized by:

- reduced heights of the floors;
- interior space that develops in length but with a reduced width;
- not functional access points;
- not removable facades, except through demolition;
- low distinction between the supporting structure and the internal space;
- interior space divided by masonry works and partitions, which require demolition and disposal works;
- any type of structure which limits the use of space (with dense pillars lattice).

Another characteristic to consider when choosing a disused industrial site to be redeveloped is its predisposition to redevelopment, ie, the conditions in the actual state of the building that are defined on the basis of:

- the level of obsolescence of the functional components;

- the general level of degradation in which arouses the site, internally and externally;
- the level of decay of the load-bearing components of the structures;
- the presence or absence of harmful material resulting from past industrial activity;
- the amount of reusable materials during requalification.

In this regard, a brownfield, is predisposed in an optimal way if:

- the supporting structures are undamaged and do not require consolidation works;
- the masonry structures result to be in good condition and only require refit;
- the functional components of the facilities (roof, beams, flooring, etc.) result to be in good condition and only require refit;
- will not be required demolition and reconstruction of any structural parts;
- are not required remediation measures or removal and disposal of harmful material;
- are not necessary operations of primary urbanization.

These characteristics, if present, can lead to a consequent net gain in terms of construction costs. On the contrary, an abandoned industrial site has a low predisposition to requalification if:

- the supporting structures are damaged and require massive consolidation works;
- the masonry structures result to be in bad condition and require structural refurbishment;
- the functional components of the facilities (roof, beams, flooring, etc.) result to be in bad condition and need to be dismantled and changed;
- will be required demolition and reconstruction of at least a structural part;
- it is required remediation measures or removal and disposal of harmful material;
- are necessary operations of primary urbanization;
- it is located in a low accessible area.

The Gross Leaseable Area can also be considered as a parameter that can determine, at decision-making, the adaptability of an abandoned industrial site. In this sense we can say that it is better a single area of large sizes than many buildings with smaller dimensions, as

a single space is more easily adaptable and customizable according to the functions and the required spaces.

On the contrary, more small buildings result to be less adaptable to the needs and functions, tend even to bind they themselves the uses, that is they are the buildings themselves in these cases to target their final function.

In general, one can say that more are the square meters of the area and more are raised final cost of construction. This is explained by the fact that these buildings need to be retrained and then there is a fixed price per square meter to be paid but does not decrease with increasing floor area (there are no economies of scale), which is the average unit cost does not decrease with the increase of production and indeed, in many cases increases since some structures may need demolition interventions in order to use the buildable area in a different way.

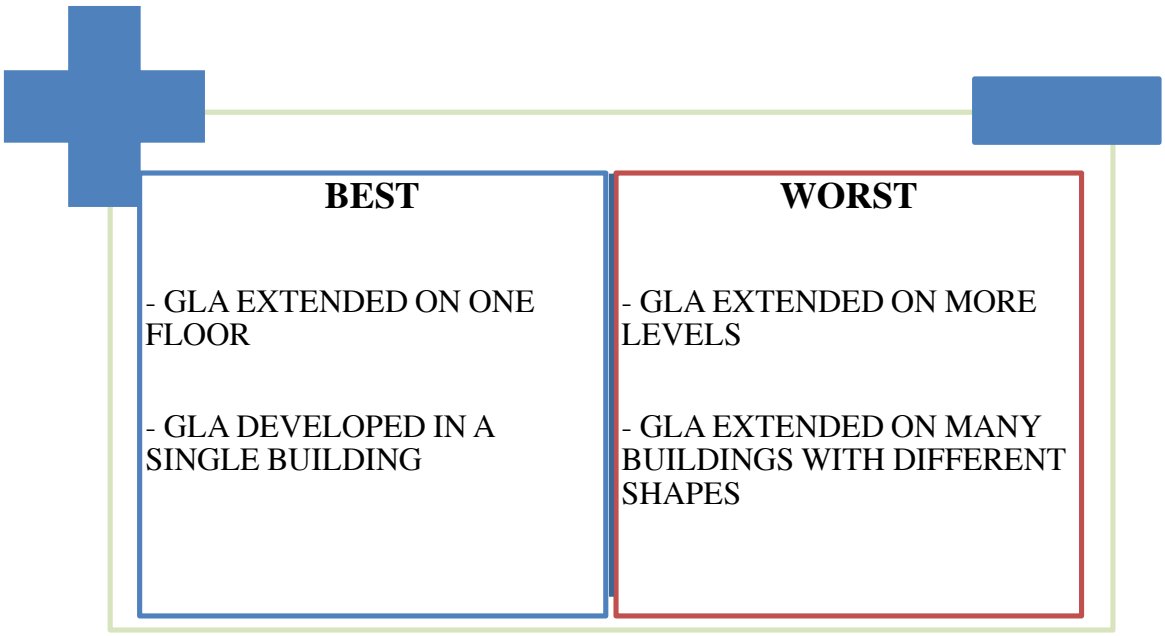


FIG. 64 – Best and worst GLA characters

PLANNING/DESIGN PHASE: DEFINING THE PROCEDURES OF INTERVENTION

BEST AND WORST ADAPTABLE CHARACTERISTICS

At this stage, to increase the quality of the location, it is advisable:

- maintaining an appropriate balance between the external surface and built-up area;
- the restoration of the external spaces and the creation of green areas and paths lined with trees;
- predispose bicycle parking;
- the enhancement of the connecting spaces between the industrial buildings that can have the vocation of public spaces, in order to tear down the old fences and allow direct usability, the daily tasks of citizenship, mobility and social gathering;
- promote the process of urban regeneration of the district;
- the involvement of local residents.

Instead, in order to maintain the architectural specificity of industrial buildings, looking for any space the more compatible function to be set up (adapting the space to the function), in order to take advantage from the natural light coming from the skylights, the interior spaces can be divided by temporary structures (panels, cells, mezzanines) or structures that do not touch the load bearing structure, in order to leave the building, the more flexible as possible.

In the interventions persists a dynamic, since it is an open set, not definitive, constantly changing. An inevitable design task to achieve an accurate process of requalification is to select the parts to be restored by comparing functional needs and degree of conservation of the various parts/buildings.

In reference to these concepts, to make a more adaptive building (architecturally) over time, increase its service life cycles and maximize its value over time it is advisable to respect the following design approach frameworks:

- preservation of existing heights (if elevated);
- functional access points;
- dismountable façade;

- high customisability and controllability of facilities;
- easy disconnection of facilities components;
- easily removable structures and frames;
- high distinction between support - infil (fit - out);
- minimize points of contact with load bearing structures;
- dividable-joinable spaces;
- multi-functional spaces;
- modular units (for structured layouts – offices, R&D).

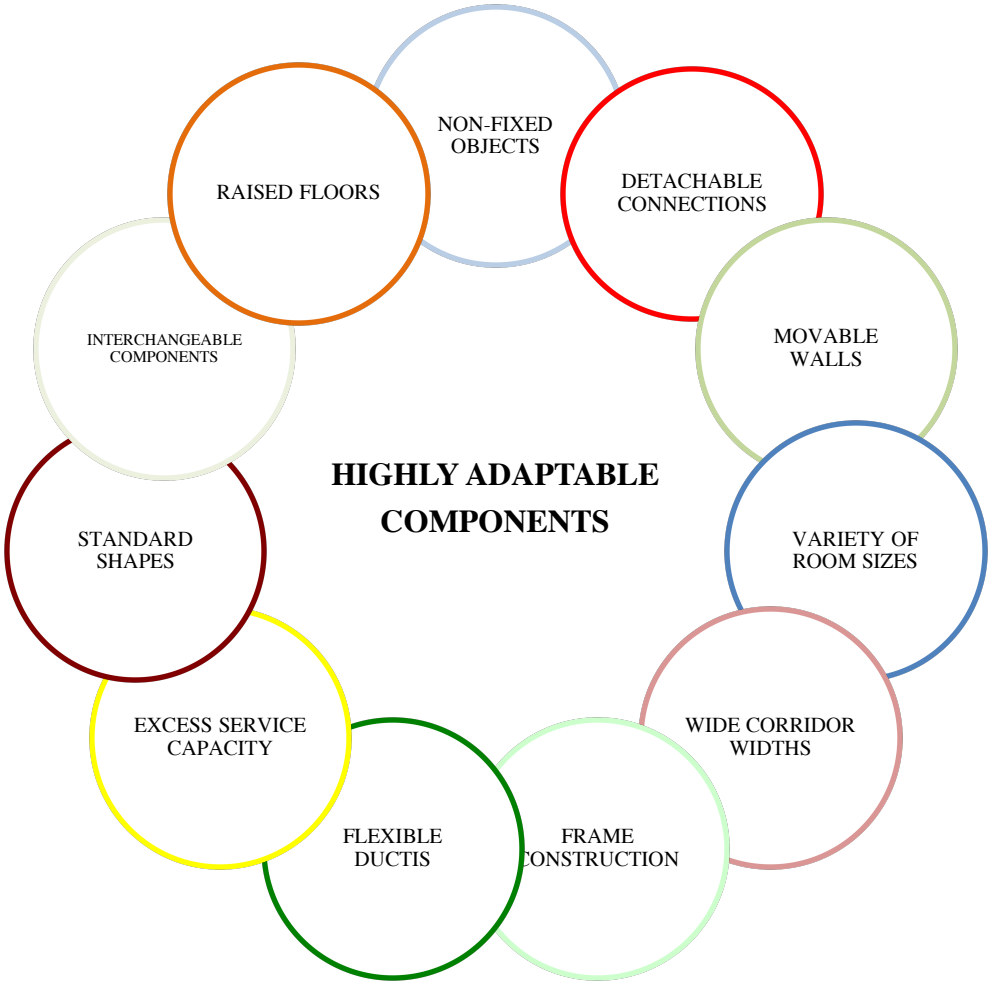


FIG. 65 – Representation of highly adaptable components that increase the adaptabllity of a building

In this sense, instead limit the degree of adaptability the following characteristics:

- subdivision of the spaces through inflexible and hardly removable structures;
- facades unlikely removable;

- facilities not customizable and uncontrollable;
- internal structure, strongly connected to the bearing structure;
- spaces not joinable;
- inflexible space and monofunctional;
- not interchangeable components;

As regards the construction costs must keep in mind that may decrease if:

- are being used materials of recovery;
- are being used local materials;
- are being used prefabricated elements and product platforms;
- are being used modular units;
- here are no interventions of demolition and reconstruction.

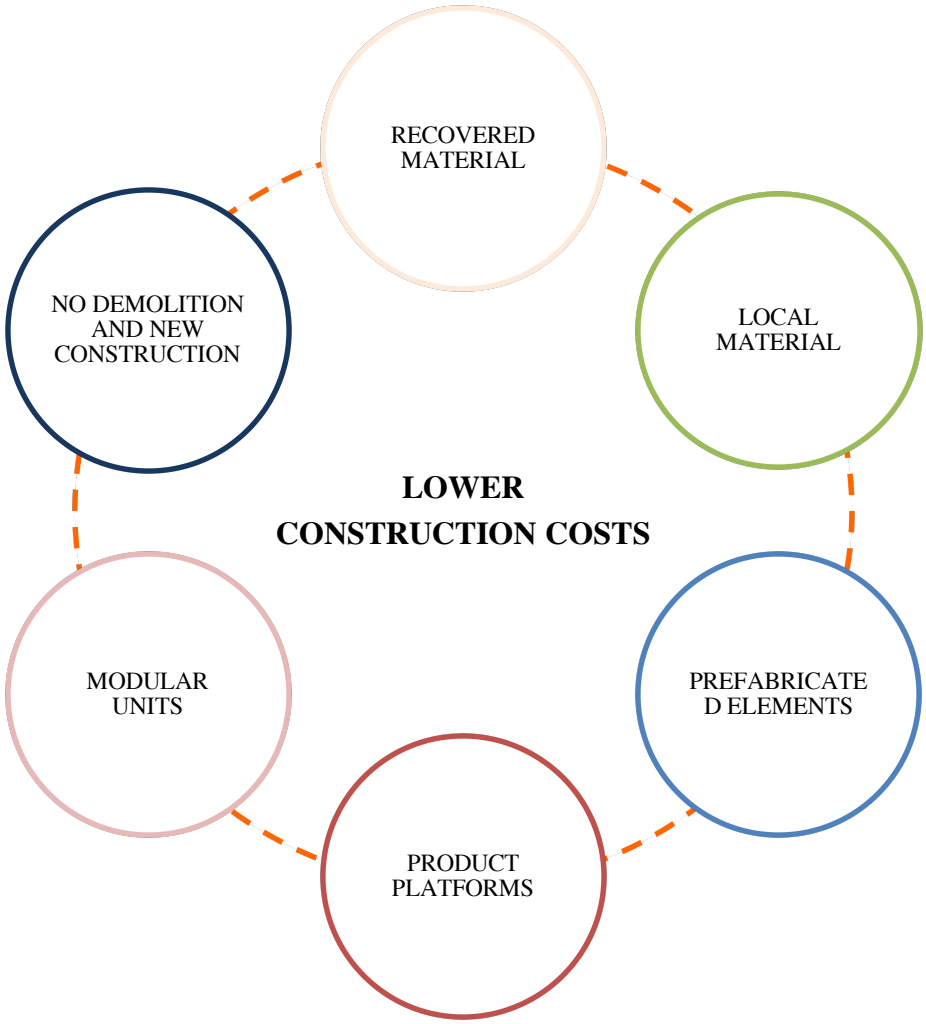


FIG. 66 – Representation of the main factors that lead to lower construction costs

7.2 MANAGEMENT TOOLS FOR ADAPTIVE REUSE PROCESS

The brownfield redevelopment processes are complex activities that require commitments in the medium to long term and include a wide range of professional disciplines, political actors and different stakeholder groups: for this reason, coordination and communication are core activities.

Process management is essential in order to facilitate the reorganization more than the purely technical aspects. For proper and successful management of brownfield redevelopment process are implemented the following activities and responsibilities:

1. Contribution of important information and targeted at specific groups;
2. analysis of mechanisms and market trends (market analysis);
3. Identification and involvement of communities / groups and other stakeholders in the process of regeneration;
4. Communication within the municipal administration, short and direct channels allow faster achievement of results;
5. involvement and cooperation between multiple parties (public and private, creating ad hoc bodies);
6. Constitution and guidance of a multidisciplinary team, for specific project;
7. Definition of development plans based on an existing policy, based on local needs and expectations;
8. Preparation of the financial structure (redevelopment financing);
9. Identification of potential partners;
10. Adoption of an interdisciplinary team approach;
11. Facilitate the delivery of a valid project;
12. Coordination of the redevelopment process including agenda setting and cost management;
13. Quality and risk management;
14. Coordination of all the work and services required;
15. Brand - building a positive image for the area undergoing redevelopment;
16. Marketing - setting up specific marketing activities for a target group;

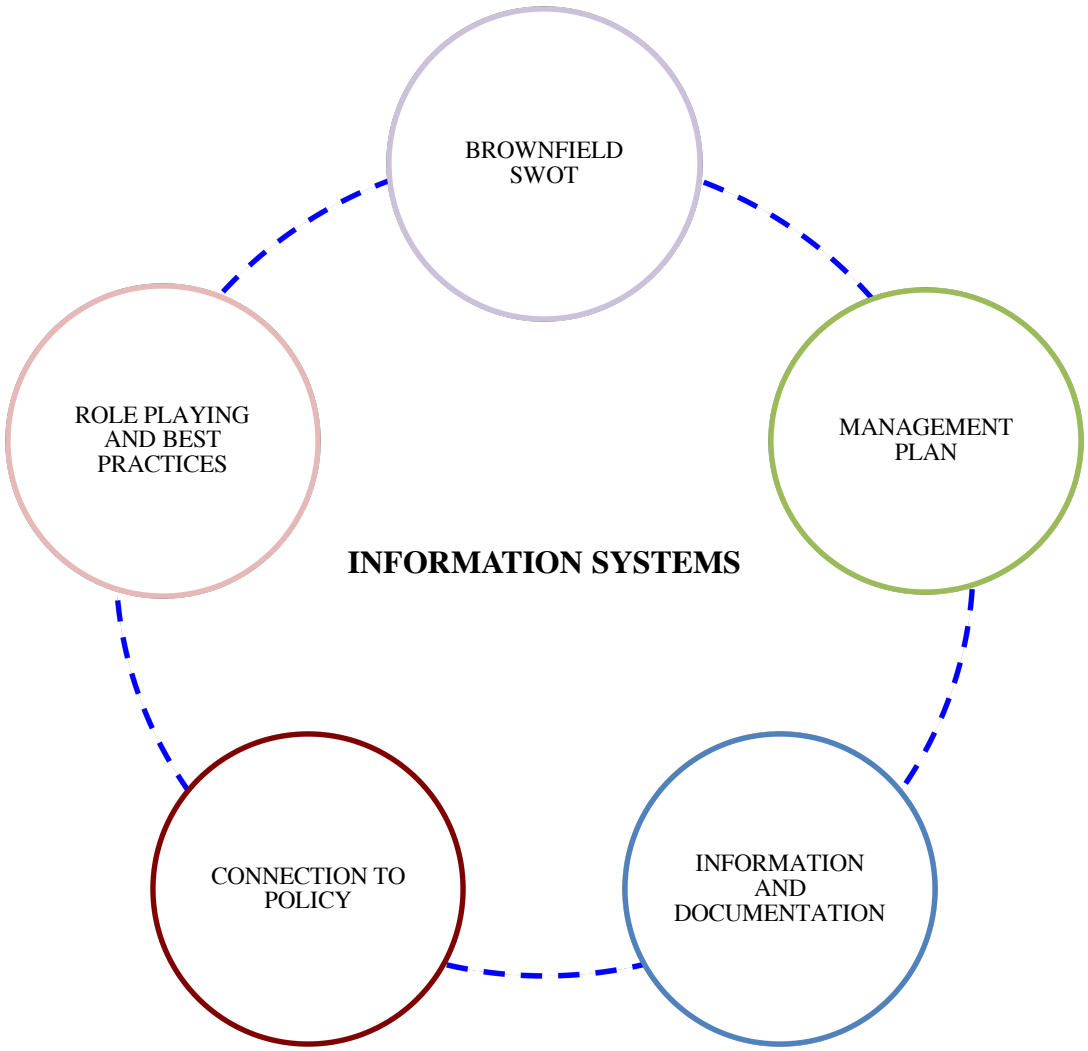


FIG. 67 – Representation of the more important information systems for adaptive reuse process

Managing brownfields in urban areas, the government can influence through a strong strategic and coordinative component (eg. Land management, information systems, etc.) or delegate the role of project manager for site-specific developments. In urban areas of smaller dimensions would be preferred the person skilled in various fields, while in larger ones sharing the activity among various professionals will be more effective since it allows more specific assignment of tasks. Furthermore, the common practice shows that the personal involvement of dedicated companies, such as development agencies (such as agencies or urban regeneration company), PPP (public-private partnership agreements as an urban development company) and so on. can be an effective solution to the problem.

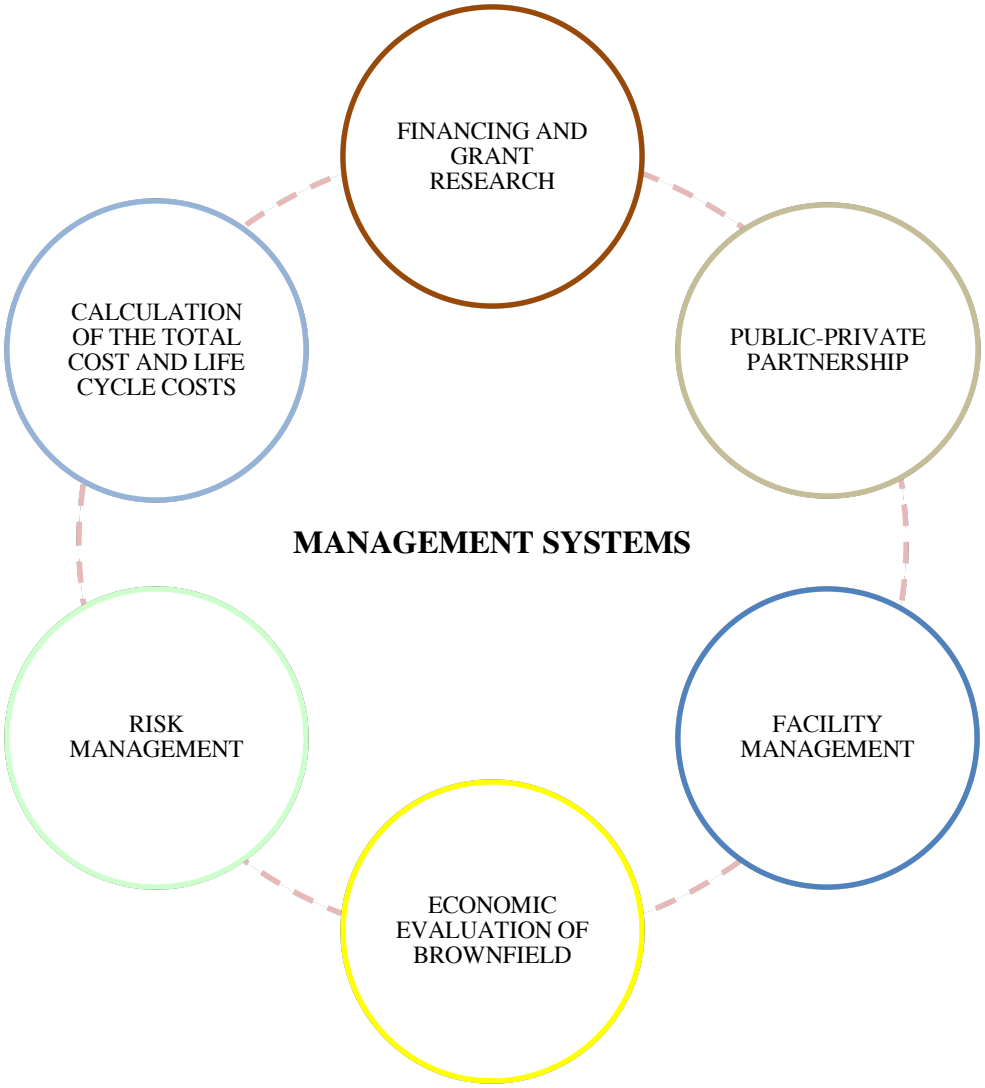


FIG. 68 – Representation of management systems for adaptive reuse process

At a more technical level should be considered the following general criteria and tasks:

1. the need for a methodology of multidisciplinary and integrated intervention;
2. assessment of the relationship between the quality of the location and intended use required;
3. definition of uses compatible both in relation to the potential and the characteristics of the buildings (to avoid unreasonable adjustments) and in relation to the surrounding environment, the physical but also social, cultural, economic and forecasts of existing planning instruments;
4. differentiation of destinations to counter the mono-functional and result in active and complex lived during the whole day and the whole year;
5. conservation, through knowledge and critical selection, the original characteristics, materials, construction systems used as well as machines and other artifacts that constitute a document of industrial civilization;

6. integration of traditional and innovative technologies capable of exploiting the inherent potential of the buildings;
7. testing of new technologies and materials for energy efficiency;
8. oriented design to the fundamental principles of environmental compatibility and sustainability, taking into account the operational phase;
9. recognition of new interventions in relation to existing structures;
10. enhancement of the connecting spaces between the industrial buildings that can have the vocation of public spaces, in order to tear down the old fences and allow direct usability, the daily tasks of citizenship, mobility and social gathering.

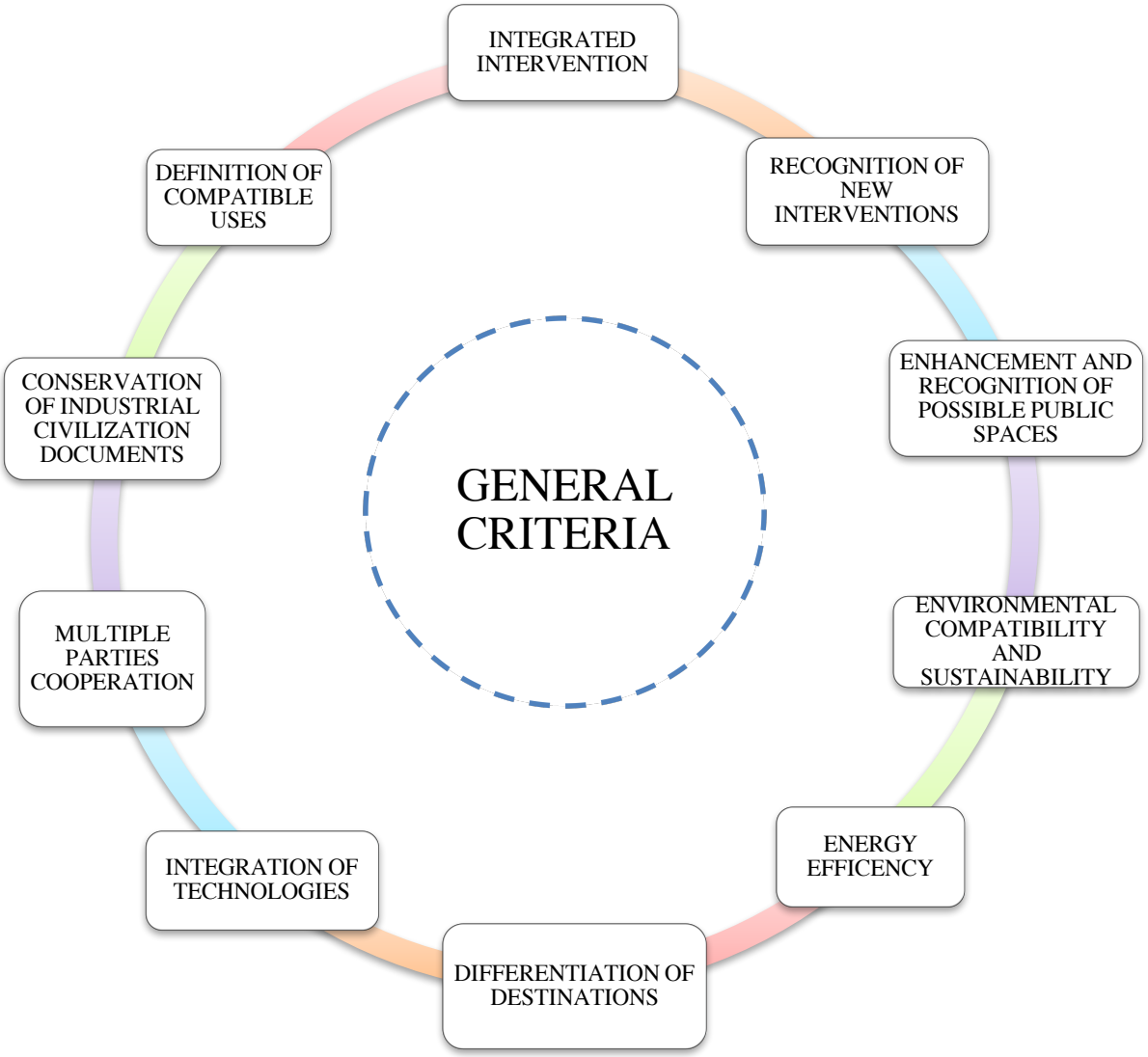


FIG. 69 – Representation of the general criteria of design approach for adaptive reuse process

8.CONCLUSIONS

The methodology resulting from previously made analysis, ie the phases that lead to the evaluation through a score of the adaptability of a building, can be adopted for any type of building making some changes on the basis of the project.
The applicability of the method for the evaluation of several redevelopment projects of former industrial buildings, appears to be highest for metropolitan areas and intended uses that require a high passage of consumers (commercial activities, culture centers, art galleries). This is because the different weights (AHP weighting) assigned to the parameters used have been set according to the information derived from the case studies analyzed and therefore, taking into account that more than 60% of the cases concerned socio-cultural centers, this setting would be correct for the evaluation of projects with such functions.
As for functions other than the socio-cultural, it would be appropriate to weigh the parameters again, perhaps giving more importance to the layout of spaces with respect to the quality of the location for functions that require structured spaces (offices, residences, etc.). In any case, the parameters should be weighted on the basis of the project that is to be realized by giving more importance to certain parameters than others according to the necessary requirements and project objectives. In this way, they ahead different project scenarios set to the same evaluation scale that lead to final scores that identify the most advantageous plan among all. For example, if you need to reduce costs, it will be given greater importance to the parameter construction costs, or if you need to realize the requalification in a short time, will be given greater weight in AHP to the building's predisposition to be retrained and at the parameter construction time.
Proceeding in this way can be said that the phase of parameters weighting appears to have a key role in adaptive reuse process and must be drawn up consistently with the pre-set project goals and the data in possession. The quality of the collected or processed data is very important and must be homogenized (normalized) in a coherent manner so as to be able to compare the different scenarios properly, also since there different evaluations, is necessary to provide the benchmarks for each parameter so as to use the same meter of assessment (the layout of spaces is structured / low structured, the customizability of the facilities is bad / good / high, etc.).

The analysis should therefore be carried out by adapting it to the type of building in the first place, to the intended use and finally to the requirements. As for the adaptability parameter (FLEX score) should be used twice in order to evaluate both the adaptability of the status quo of the building be requalified both the future adaptability of the building according to the project. In our analysis has not been assessed the adaptability of the status quo of the building because the case studies relate to projects already implemented and therefore it would have been complex to go back to the old state of built of the building.
Possible implementations of the analysis methodology may include primarily the verification of future changes of use of the case studies, with reference to the economic useful cycles of a building. In this way it will be possible to obtain more concrete data in reference to the level of adaptability of different buildings, analyzing the performance of the structures during the changes of function (for example, verifying the cost and time required to the building, for the change of use).
At this stage it will be possible to analyze more deeply the case studies better performing for this parameter, and thus understand, more specifically, what are the best features or best practices of adaptive reuse.

9. GLOSSARY

BROWNFIELD

"Brownfield land is an Anglo-American term used in urban planning to describe land previously used for industrial or commercial purposes with known or suspected pollution including soil contamination due to hazardous waste. Land that is more severely contaminated and has high concentrations of hazardous waste or pollution, such as a Superfund site, does not fall under the brownfield classification. After clean up, such an area can become a community park or business development." WIKIPEDIA

ADAPTIVE REUSE

"Adaptive reuse refers to the process of reusing an old site or building for a purpose other than which it was built or designed for. Along with brownfield reclamation, adaptive reuse is seen by many as a key factor in land conservation and the reduction of urban sprawl. However adaptive reuse can become controversial as there is sometimes a blurred line between renovation, facadism and adaptive reuse. It can be regarded as a compromise between historic preservation and demolition." WIKIPEDIA

RETROFITTING

"Retrofitting refers to the addition of new technology or features to older systems.

- *power plant retrofit, improving power plant efficiency / increasing output / reducing emissions*
- *home energy retrofit, the improving of existing buildings with energy efficiency equipment*
- *seismic retrofit, the process of strengthening older buildings in order to make them earthquake resistant"* WIKIPEDIA

THE INDUSTRIAL DECOMMISSIONING

"The term industrial decommissioning means that the disposal process, partial or total, of entire areas, agglomerates or individual buildings intended for production activities" (Dansero, 1993).

"*The disposal of the phenomenon and the continuous adaptation and transformation of urban space belong to the physiological process that is inherent in the evolution of uses and the form of the city itself*" (Gianluca Giovanelli 1997).

THE INDUSTRIAL HERITAGE

"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." The Nizhny Tagil Charter for the industrial Heritage, The international Committee for the Conservation of the industrial Heritage (TiCCiH), 2003.

"This means that adaptive reuse is particularly important in the conservation of industrial sites, it is a way to give them ongoing life while retaining memories and knowledge for generations to come".

"*There can be no new architecture without modification of the existing [...], every architectural task is always more action partial transformation, the same urban periphery is a place seeking identity through the modification*" (1984).

"*indicator of the cyclical transformation of the urban fabric*." Vittorio Gregotti, 2008

"Given the fact that in most parts of the world our built environment is still largely determined by already existing buildings and constructions rather than new developments,

one of the greatest tasks faced by today's architects is the creative handling and inspiring transformation of such architectural remains." Lukas Feireiss

"Encouraged by the cheapness of these rundown neighborhoods, located within the city center and possessed of this authentic nature, they move into the neighborhoods, using their creative expression and imagination to transform the neighborhoods into hot beds of artistic activity and interaction, creating galleries, happenings, bars, cafes.
This is the way many of today's most covetted neighborhoods have been revitalized. During the 1960s it was this kind of cultural renaissance that revitalized areas of San Francisco and New York's Greenwich Village, which are now the most covetted neighborhoods wthin those cities. Since then, we see it all over the world: recently in East London, in Berlin, in Hamburg, and in Williamsburg, Brooklyn, to name a few. Through the cultivation of the character and culture of a place, through artistic intervention and collaboration, the buildings and neighborhoods are made more attractive, encouraging growth and investment." Christopher Smith

"As symbols of urban degradation and abandonment, there is something very poetic about the most horrible, degraded aspects of the urban landscape, becoming the most beautiful and hopeful elements of our modern cities. It is the history of these structures as part of the urban landscape and its history, worn by time and nature that gives them their particular character. […]
Furthermore, by displaying their history of abandonment and delapidation, the transformation into something beautiful and culturally enriching is that much more inspiring and meaningful. It is an expression of the victory of the creative human spirit over the forces of greed and neglect. Through such interventions, these places and these buildings are given new value. "Christopher Smith

"The preeminent value of the old remains its authenticity, rather than its historic, symbolic, emotional, utilitarian or economic value." Lukas Zagala

"Post-industrial remains were not created to possess the values of beauty but still seem inspiring to many of us" Lukas Feireiss

*"They are relics from when things were as they were, not what they were promised to be or pretending to be. "*Christopher Smith

"The beauty created by an engineer arises from the fact that he is not conscious about its creation." Henry Van de Velde

"Given the fact that in most parts of the world our built environment is still largely determined by already existing buildings and constructions rather than new developments, one of the greatest tasks faced by today's architects is the creative handling and inspiring transformation of such architectural remains." Lukas Feireiss

3. THE ADAPTIVE REUSE

"*The best way to conserve a heritage building, structure or site is to use it ... Adaptation links the past to the present and projects into the future." 'New Uses for Heritage Places*.'

"*The disused industrial buildings, along with the areas in which they are placed, they live a continous tension between conditions of permanence and change, degradation and possible recovery, of marginalization and integration*" Sposito, 2012

"*Demolition and equivalent new construction, no matter how energy efficient, typically requires decades to equal the energy savings of rehabilitating an existing building."* Tanner Kibble Denton

"energy consumed by all the processes associated with the production of a building, from the acquisition of natural resources to product delivery, including mining, manufacturing of materials and equipment, transport and administrative functions". CSIRO

"the reuse of building materials usually involves a saving of approximately 95 per cent of embodied energy that would otherwise be wasted". The Australian Greenhouse Office

ADAPTABILITY

"*A sustainable building is not one that must last forever, but one that can easily adapt to change*" Russell & Moffatt (2001)

"*Adaptability a building's ability to accommodate change throughout time, fundamentally extending its life*" Schmidt III (2010)

ANALYTICAL HIERARCHY PROCESS

"The analytic hierarchy process (AHP) is a structured technique for organizing and analyzing complex decisions, based on mathematics and psychology. It was developed by Thomas L. Saaty in the 1970s and has been extensively studied and refined since then. It has particular application in group decision making,[1] and is used around the world in a wide variety of decision situations, in fields such as government, business, industry, healthcare, shipbuilding and education." WIKIPEDIA

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"*A sustainable building is not one that must last forever, but one that can easily adapt to change*"

Russell & Moffatt (2001)

ATTACHED 1

"General and descriptive data"

REGION	N°		CASE STUDY	GENERAL INFO				FUNCTIONS AND SPACES		
				CITY	DESCRIPTION	PROMOTER	OWNERSHIP	PREVIOUS FUNCTION	NEW FUNCTION	HOSTED SPACES
PIEMONTE	1	1	MUSEO DEI CAMPIONISSIMI	NOVI LIGURE -AL		REGIONE PIEMONTE	PUBLIC	CAPANNONE INDUSTRIALE	S-C	
	2	1	CASA ZERA	TORINO	Casazera is the living lab developed under the Ecostruendo research project. It is a prefabricated living prototype dry wood, with low environmental impact for the urban redevelopment of disused industrial buildings.	CITTA' DI TORINO E DE-GA SPA	PUBLIC/PRIVATE	FONDERIE	RESID.	
	3	1	QUARTIERE AURORA	TORINO	A building constructed in the early twentieth century by a great Piedmontese architectural signature, Pietro Fenoglio, historical site of the tannery Gilardini first and then the Choccolat Tobler. The rehabilitation of the former factory Tobler took place under two seemingly contradictory paradigms, conservation and innovation, combined to result in avant-garde architecture in a still relatively uncharted territory.	DE-GA SPA	PRIVATE	FABBRICA DI CIOCCOLATO	RESID.	RESIDENCES
	4	1	LA CASA DEI PRODUTTORI	TORINO	The headquarters of Film Commission Torino Piemonte is a structure of 9,400 square meters of total area, of which 6,000 meters are covered and 1,200 square meters reserved to service companies, originated from the reclaiming of former wool mill Cologno, a start industrial structure 900, after four years works for the recovery and the conversion of the industrial area that keep the original structural elements such as the roof to "shed" or base of the old chimney, the perimeter walls with exposed brick and original windows.	FILM COMMISSION TORINO PIEMONTE (REGIONE PIEMONTE)	PUBLIC	LANIFICIO	S-C	**18 BLOCKS** 5 MODULES EACH ON 2 LEVELS Production Offices to accommodate up to 5 productions simultaneously, Costumes rooms, props Room, 100 seats Cinema and daily vision 35mm and Digital Video, Conference Room, Casting rooms, Joinery Area, Laundry, bar-public restaurant, corridors accessible to vans, Parking Area.
	5	1	MUSEO ETTORE FICO	TORINO	The new Ettore Fico Museum is located inside the former industrial complex INCET via Cigna, in the north of the city. Next to the Docks Dora, home to countless artists' studios, the MEF is part of a social context of great interest and of great multiethnic vibrancy. The MEF proposes a cultural offer with an international character through the realization of exhibitions, cultural events, seminars, round tables and meetings, aimed at affecting a large number of people concerned to modern and contemporary art, without excluding art raids ancient.	FONDAZIONE ETTORE FICO	PRIVATE	FABBRICA DI CAVI ELETTRICI	S-C	**MAIN BUILDING** EXHIBITION SPACE: designed in a circular manner, is on three levels. It begins from the entrance, with reduced height space (2.70m) illuminated with indirect artificial light. He continues on the ground floor with a wide corridor of 5 meters high on which overlook the exhibition halls, one teaching space, multipurpose hall (meeting room) and support local. The ground floor ends with a striking space-height (17 mt), lit from above by natural light - Concept Store on two levels - Lounge Area TERRACE ON THE TOP **SECONDARY BUILDING** Café Bistrot on the ground floor and offices on the first floor
	6	1	FONDAZIONE MERZ	TORINO	Named after Mario Merz, the Fondazione was established in 2005 as a centre for Contemporary Art with the intent to host exhibitions, events, education-related activities, and to further research and explore art. The Fondazione's building, a former heating plant for the Lancia factory, a fascinating example of industrial architecture from the 1930s owned by the Città di Torino and given in concession to the Fondazione Merz. The refurbishment and restoration, supported by both private and public funds (City of Torino and Region Piemonte), has affected the whole building, defining the interior spaces and taking into account the cultural purposes the Fondazione intends pursuing. The building has an overall area of 3,200 mq, of which 1,400 for an exhibition area over three floors and including an external area.	FONDAZIONE MERZ - COMUNE DI TORINO/REGIONE PIEMONTE	PUBLIC/PRIVATE	CENTRALE TERMICA	S-C	EXHIBITION AREA - OUTDOOR AREA - CAFE' - BOOKSHOP - STUDY CENTER - LIBRARY
	7	1	FABBRICA DELLA RUOTA	BIELLA	The wool factory Zignone, better known as "Factory of the Wheel", was built around 1878. It is one of the best known examples of industrial archeology in Italy, having preserved the nineteenth-century multi-storey plant Manchesterian type and the system "teledinamico" of transmission of energy. It is at the center of the trail "La Strada della Lana", linking Biella to Borgosesia. The Textile Industry Documentation Centre includes a specialized library of over 1,500 volumes and an archive consists of 58 funds from industry. In "generalist" library it is preserved about 5000 volumes. In the ground floor there are several restored and working machinery, as well as tools associated with textile manufacturing. In the conference room it is set up a didactic exhibition that illustrates the operation of the woolen mill.	COMUNE DI PRAY/BIELLA	PUBLIC	LANIFICIO	S-C/INST.	

PIEMONTE	8	1	**FONDAZIONE PISTOLETTO**	BIELLA	Cittadellarte is an art and creativity laboratory founded in 1998 by the artist Michelangelo Pistoletto in a disused textile mill by the river Cervo in Biella. The name Cittadellarte incorporates two meanings: that of the citadel or rather an area where art is protected and well defended, and that of the city, which corresponds to the idea of openness and interrelational complexities with the world. Cittadellarte is a great laboratory, a generator of creative energy that generates unedited processes of development in diverse fields of culture, production, economics and politics. The activities of Cittadellarte pursue a basic objective: to operationally take artistic interventions into every sector of civil society to contribute responsibly and profitably to address the profound changes of our age.	FONDAZIONE PISTOLETTO - COMUNE DI BIELLA/REGIONE PIEMONTE	PUBLIC/PRIVATE	LANIFICIO	S-C/INST.	LIBRARY - UNIDEE - LOGGIA - EXHIBITION SPACES - CAFE' - SALA DELLE COLONNE - SALE AULICHE - TEATHER - STORE
LOMBARDIA	1	1	**FONDAZIONE PRADA**	MILANO	Located in a former gin distillery dating from 1910 in the Largo Isarco industrial complex on the southern edge of Milan, the new home of Fondazione Prada is a coexistence of new and regenerated buildings including warehouses, laboratories and brewing silos, as well as new buildings surrounding a large courtyard. The complex aims to expand the repertoire of spatial typologies in which art can be exhibited. The project consists of seven existing buildings, and three new structures.	FONDAZIONE PRADA	PRIVATE	DISTILLERIA	S-C	Podium: space for temporary exhibitions Cinema: multimedia auditorium Torre: nine-story permanent exhibition space for displaying the foundation's collection and activities The Deposito: curatorial ingenuity Four houses: Fondazione offcies and permanent galleries The Cisterna: space for exhibitions Hounted house: space for specific works The Bar Luce: located in the entrance building of the new venue, recreates the atmosphere of a typical Milanese café.
	2	1	**ARMANI SILOS**	MILANO	The exhibition space was opened in 2015 and is a living, open-to-the-public space illustrating Giorgio Armani's professional experience, revealing a rich heritage of unique know-how: a space in which to design the future, a showcase of new attitudes and lifestyles that capture changing times and cultures. Armani/Silos*, located at Via Bergognone 40, is in what was originally the granary of a major international company and dates back to 1950.	ARMANI	PRIVATE	SILOS DI GRANAGLIE	S-C	4 FLOORS OF EXHIBITION SPACES GIFT SHOP OPEN-PLAN INDOOR COFFEE SHOP DIGITAL ARCHIVE
	3	1	**BIRRIFICIO DI LEGNANO**	LEGNANO - MI	The chosen site is part of the ancient settlement of Bernocchi Weaving, a rare example of industrial architecture beauty of the 'beginning of the twentieth century. The building was recovered split into two parts: one dedicated to the craft brewing (where with existing plants are produced 150,000 liters of beer, sold locally or drums up to 30 liters) and another dedicated to the commercial sector, open to the public, to taste the quality of craft beers, sitting around a large horseshoe-shaped bar counter, or on the rustic tables and chairs inspired by industrial molds and several shelves made from old restored workbenches. By utilizing contemporary building materials, the project has reinterpreted, as a whole, the current modern architectural settlement rules fully respecting at the same time the place industrial heritage by blending together structural and decorative details.	BIRRIFICIO DI LEGNANO	PRIVATE	BIRRIFICIO	COMM/PROD.	CRAFT BREWING AREA COMMERCIAL AREA ADMINISTRATION AREA EXTERNAL AREA
	4	1	**ECOMUSEO MINERARIO DELLA BAGNADA**	LANZADA - SO	The Museum of Bagnada born with the will to bring to light and at the same time a heritage unparalleled. Restoring a reality in Val Malenco did starring for nearly a century, intertwining his story with that of its inhabitants, it allows to reflect on the historical and social significance of an activity that has permeated the valley's culture and that not It must be forgotten. The recovery and development of the mine, actually inextricably linked to the territory, so it has a twofold objective: on the one hand back to the memory of local communities a past reality that has helped shape the identity of Val Malenco and its people by strengthening the sense of belonging to the valley and a distinction from the current globalization process now; secondly, to introduce tourists to the peculiarities of this historical memory that are still alive today in many aspects of economic, social and territorial cohesion of the valley.	COMUNE DI LANZADA	PUBLIC	MINIERA	S-C/INST.	
	5	1	**MASSIMIANO 25**	MILANO	Abandoned industrial area that is located at the intersection of Ventura and Maximian, adjacent to the street Maximian lot 25. It is obtained, on the ground floor commercial spaces and art galleries on the first floor a bar-restaurant and the upper floors workshops and laboratories. The block is occupied by former Faema overlooking today, hosting inside the offices of a magazine, a school of higher education, galleries and art studios has become a new center of life for the neighborhood.	IMPERATORE SRL	PRIVATE	FABBRICA DI CAFFE'	MIX	**GROUND FLOOR** COMMERCIAL SPACES - ART GALLERY **FIRST FLOOR** BAR AND RESTAURANT **UPPER FLOORS** ATELIER AND LABORATORIES
	6	1	**LAP: LAMBRETTO ART PROJECT**	MILANO	The LAP spaces are located as an island between the river Lambro and Lambretto canal, right in the area where once stood the historical production plants "Lambretta". The lot is shaped like a rectangle trapezium: the oblique side of the perimeter is derived from the intersection of the urbanization reticle with land base of the Lambro, which runs adjacent to the lot. It comes difficult to reach area, located inside a messy fabric made of industrial areas, some abandoned and others recovered and converted, and certain production plants survived.	IMPERATORE SRL	PRIVATE	FABBRICA AUTOMOBILI	S-C	**GROUND FLOOR - SHED** ART WORKSHOPS AREA - DESK - VIDEO ROOM - TOILETTE - STORAGE ROOM **UPPER FLOORS - TOWER** GUESTHOUSE - TERRACE - OBSERVATORY

LOMBARDIA	7	1	**GALLERIA ZERO**	MILANO	The new home of the Galleria Zero fits in the intervention of restructuring the former Hyundai lot in perspective position, at the end of the courtyard, and occupies a space that was built inside the old profile of the industrial building. Inside the choice not to bring the walls up to the roof and leave them in their constructive materiality leaves in the air even a hint of industrial recovery and at the same time creates a large-scale space and suitable to the function that has to accommodate.	MARIANO PICHLER	PRIVATE	FABBRICA AUTOMOBILI	S-C	EXHIBITION AREA
	8	1	**RESEARCH AND DEVELOPMENT CENTER**	DALMINE - BG	The 1908 shed, with no more industrial production in it, had a large and well-proportioned inner space, a very elegant and slim steel structure, and great zenith natural light. The lack of use would inevitably have implied expensive maintenance with no return, a gradual neglect and possible demolition. It consequently surged as a rational option the idea of settling the new Research & Development inside the shed instead of building from scratch. Surfaces fitted perfectly and decided to go for a constructions inside another construction scheme. The idea was to create an inner landscape shaped by the three-floor building for researchers offices, the garden, the one-floor building for laboratories and the yard for samples preparation, all under a common roof.	TENARIS SPA	PRIVATE	FABBRICA METALLURGICA	R&D	R&D AREA - QUALITY AREA - PREPARATION AREA - LABORATORIES - TRAINING AREA
	9	1	**EX TESMEC AREA**	CURNO - BG	Former Area Tesmec located at the foot of the hills of the Colli di Bergamo Park, inserted in the industrial area at the intersection between the municipalities of Longuelo, Curno and Mozzo. The site, which is located on an area of about 17,000 square meters, is undergoing a process of transformation linked to the redevelopment and conversion of space inside that once housed the company's production process. Developed for the next step, the project saw the completion of the first batch of about 4,000 square meters, with the construction of six separate compartments for business accommodation, tertiary and craft.		PRIVATE	FABBRICA METALLURGICA	MIX	
	10	1	**L'ARSENALE - EDIFICIO PER LABORATORI**	MILANO	The building is located in an industrial area along Via Tortona in Milan. It 'a great shed divided by a transverse wall into two spaces with dimensions and characteristics equivalent, both covered by gabled roof. The availability of a residual volume on the entire lot has allowed the extension of the building.	ITALIANA PRODUZIONI	PRIVATE	ARSENALE	MIX	SHOWROOM - CRAFT WORKSHOPS - EVENTS SPACES
	11	1	**BASE MILANO - CENTER FOR CULTURE AND CREATIVITY**	MILANO	The project for ex-Ansaldo space is a contemporary investigation about meaning and form for new cultural institutions: the intervention relates to a large building as an "open work", not stable in a unique form but enabling program and activities flexibility. The goal is becoming a palimpsest in which activities, people and their processes move, obtaining a radically public and clear building, not just in the interpretation of the program but also concerning its spatial conception.	COMUNE DI MILANO FONDAZIONE CARIPLO	PUBLIC	FABBRICA SIDERURGICA	S-C	**GROUND FLOOR** EXHIBITION SPACES - EVENTS SPACES - CAFE' - BOOK SHOOP - AUDITORIUM **FIRST FLOOR** COWORKING SPACES - OFFICIES - MEETING ROOMS LABORATORIES - GUESTHOUSE FOR ARTISTS -
	12	1	**GALLERIA MASSIMO DE CARLO**	MILANO	The project for the new contemporary art gallery Massimo De Carlo is part of an old industrial building in which, taking advantage of height and size, four exhibition spaces are created at different levels, a department store for a basement works and one for space offices, in a glass volume that is part of the original building.	GALLERIA MASSIMO DE CARLO	PRIVATE	CAPANNONE INDUSTRIALE	S-C	EXHIBITION SPACES - OFFICES
	13	1	**VIA CASCIA 6 – EX GIO' STYLE**	MILANO	An industrial building constructed in the '70s with the logic of multi-storey factory: the raw materials, in fact, were loaded on the 4th floor and then gradually, working in manufacturing, down to plan until you arrive in the form of finished product and packed, to the platform of the truck for transport.	SOPRABITA SRL	PRIVATE	FABBRICA COMPONENTI PLASTICI	MIX	SHOWROOMS - OFFICES - RESIDENCES
	14	1	**VIA VENTURA 3,5,15**	MILANO	The restructuring of the industrial ex-Faema (manufacturer of coffee machines), in via Ventura Lambrate, concerns a group of sheds and buildings on a total area of 20,000 square meters. Launched in 2000, the project aimed to revive an obsolete plant, turning it into a part of the neighborhood and giving it back to the city.	MICAMOCA SRL	PRIVATE	FABBRICA DI CAFFE'	MIX	PROFESSIONAL OFFICES - HOMES - ART GALLERIES - LIBRARIES - DESIGN SCHOOL - COMMERCIAL ACTIVITIES - EVENTS AREA

LOMBARDIA	15	1	**OFFICINE DEL VOLO**	MILANO	The complex was born from the architect Nicola Gisonda desire to make a real restoration of a segment of the former aircraft manufacturer Caproni, the Officine del Volo recover and retain the charm of a historic Milanese industrial architecture of the early 900, becoming a current and dynamic place, always becoming. The complex consists of three rooms, each with its own architectural and decorative features (the monoplane room, the biplane room and propellers room) for a total of 1,500 square meters, equipped with modern technological equipment; the result is sophisticated union that combines past and present. The world of fashion, art, advertising, cinema, creativity, as well as businesses and, are in this space their natural place, recognizing an added value and appreciating it as a contemporary business project, but in respect of its historicity . Space in which to invent shows, commercials, festivals, conferences and presentations fully inserted in a modern context, but where all the feelings, all the flavors, reminiscent of those of Milan was.	ARCH. NICOLA GISONDA	PRIVATE	OFFICINE AERONAUTICHE	S-C	**GROUND FLOOR** ELICHE ROOM: meeting and congress **FIRST FLOOR** BIPLANO ROOM: meeting and congress MONOPLANO ROOM: meeting and congress **COURTYARD**
	16	1	**PIRELLI HANGAR BICOCCA**	MILANO	Pirelli HangarBicocca is a non-profit foundation established in Milan in 2004 by the conversion of an industrial plant in an institution dedicated to the production and promotion of contemporary art. Dynamic place for experimentation and research, with its 15,000 square meters is one of the exhibition spaces to larger horizontal development of Europe and every year presents major solo exhibitions of Italian and international artists. Each exhibition project is conceived in close relation with the architecture of the building and is accompanied by a program of events and in-depth. Access to space and to the exhibitions is totally free and dialogue between the public and art is favored by the presence of cultural mediators. The building includes an area dedicated to services to the public and to educational activities and three exhibition spaces characterized by exposed the original architectural elements of the past century: the Shed, the aisles, and the Cube.	PRELIOS	PRIVATE	FABBRICA DI LOCOMOTIVE	S-C	**FOYER** **CAFE' AND RESTAURANT** **KIDS ROOM** **READING ROOM** **EXHIBITION SPACES:** SHED - CORPO ALTO - CUBO - GIARDINO
	17	1	**FRIGORIFERI MILANESI**	MILANO	The "Frigoriferi Milanesi" located in Via Piranesi is a historic industrial complex of Milan, owned by Bastogi group, made up of two buildings: the Palace of the refrigerators and the Ice Palace. Converted into multipurpose space, now houses several institutions and companies operating in the fields of art and culture. The Palace of Refrigeration was founded in 1899 as manufacturer of ice and refrigerating warehouses company Gondrand Mangili, and is for the time one of the major European ice warehouses. In 1923 he is inaugurated, alongside the building, the Ice Palace, which becomes a skating rink of Milan and with the largest indoor track in Europe its 1800 square meters.	FRIGORIFERI MILANESI SPA PALAZZO DEL GHIACCIO SRL	PRIVATE	FABBRICA DEL GHIACCIO E MAGAZZINI REFRIGERANTI	S-C	**GROUND FLOOR** CUBO: gala dinners, exhibitions and shows, sets for photo shoots, fashion shows and video footage. GALLERIA: exhibition space and photo shoots area. GOLA: exhibition space. CARROPONTE: press conferences, presentations and exhibitions. BINARIO: press conferences, presentations, exhibitions and teather shows. **FIRST FLOOR** SPAZIO 6.60: five personalizable spaces **FOURTH FLOOR** SALA BIANCA: officies SALA GRIGIA: meeting room SALA NERA: meeting room **PALAZZO DEL GHIACCIO** shows, concerts, fashion shows, gala evenings, exhibitions, conferences, fairs and business meetings
	18	1	**LA FABBRICA DEL VAPORE**	MILANO	Fabbrica is a space of the City of Milan open to the city, for culture and aggregation, which involves young people both as users and as cultural content producers, performative, artistic multidisciplinary, centered on active participation. A space where different realities for business, history, experience, contaminate and grow together, for longer or shorter periods. La Fabbrica del Vapore promote aggregation and entertainment, in order to encourage frequentation also by the public, eliminating the barriers between the producer and the consumer of the content.	COMUNE DI MILANO	PUBLIC	FABBRICA METALMECCANICA	S-C	AREA FOR PROJECTS OF RESIDENT ASSOCIATIONS AREA FOR SHOWS, EXHIBITIONS, RESTAURANTS CENTRAL COURTYARD - AGORA - CATHEDRAL
LIGURIA	1	1	**NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI**	SANTO STEFANO DI MAGRA - SP	Former area Vaccari Ceramic covers 14 hectares. The NOVA area is more than 2 hectares and consists of a series of factories which occupy about 60 percent. The remainder is made up of open area. buildings, two in particular, remain in full use of the City: the mill that was used for calibration and the former Directorate building activities. It is a flat area on the edge of the village and at the foot of the hill, where the first settlements, in the character of industrial development and functional activity that was settled, date back to the late nineteenth century. The latest industrial buildings were built in the 40s of the twentieth century.	REGIONE LIGURIA	PUBLIC	FABBRICA DI CERAMICHE	S-C/INST.	AREA FOR SHOWS, EXHIBITIONS, RESTAURANTS: 7000
	2	1	**IMMOBILE CONCORDE**	GENOVA	For the new Ford headquarters in Genoa the demands of the clients concerned the renewal and transformation both inside and outside of an industrial building and the creation of a space to various contamination and not only used as a resale point. Around the central core of retail space, the choice was therefore to aggregate additional technical workshops as the bodywork and spare parts service, and then add the administrative offices, a car service practices and event space and exhibition with a point refreshments. The idea of an integrated car pole is then meant to be enjoyed not only by buying purposes, but also for side occasions, as a place for exhibitions and events, or meeting point for a coffee.	CARFIN SPA	PRIVATE	STAMPERIA	COMM./OFFIC	Mechanic's workshop - body shop - warehouses - offices - sales areas - exhibition space - refreshement area

EMILIA ROMAGNA	1	1	**AUDITORIUM NICCOLO' PAGANINI**	PARMA	The ex-refinery plant of Eridiana sugar factory was built in 1899 and, after a period of slow decline, in 1968 it was decommissioned. In 1980 it was acquired by the Municipality of Parma, but only at the end of the nineties, after decades of neglect that have fueled the deterioration has been the subject of an intervention of recovery and reutilization, designed by Renzo Piano, and made possible by a variation introduced to the PRG. Respecting the need to safeguard an important testimony of the industrial past and at the same time to redevelop strategic urban area for its location between the city center and areas of expansion, the project retains the original volumes and shapes and the main architectural features. The main production building of the former has been transformed in the Auditorium "Niccolo Paganini.	COMUNE DI PARMA	PUBLIC	RAFFINERIA DI ZUCCHERO	S-C/INST.	**THEATER** a main room with theater-style seating capacity of 780 **FOYER** **OPEN COVERED SPACE** **LATERAL STRUCTURE/SERVICES AREA** bathrooms, a rehearsal room, dressing rooms, a bar, a reception room and technical rooms.
	2	1	**OPIFICIO GOLINELLI**	BOLOGNA	Golinelli factory is located in Via Paolo Nanni Costa 14, adjacent to the industrial area of about 3 hectares occupied until 2008 by the Company Sabiem Foundries. The citadel for knowledge and culture, which required a total investment of 12 million Euros, is 9,000 square meters and is home to around 100,000 visitors a year. The expected numbers and the cultural model make it one of the largest experimental laboratories at the end of teaching in the field of science and technology and a national and international importance of the center. The architectural design has recovered an abandoned former factory, configuring itself as an operation of regeneration and urban renewal.	FONDAZIONE MARINO GOLINELLI	PRIVATE	FONDERIE	S-C	**LEARNING SPACES AND LABORATORIES** **NESTS AND SPACES FOR CHILDREN** **FOUNDATION OFFICIES** **GARDENS AND SQUARES**
	3	1	**SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA**	IMOLA - BO	The Cooperativa Ceramica di Imola is the oldest co-op of production and work in Italy at the top of the production of ceramic materials for architecture and design. It now represents the Made in Italy all over the world. The new showroom is located within the old production facilities of the company date back to the mid-50s. These architectures have an intrinsic value as a historical record of the life of the company of which retain memory in the structure and typical and extremely charming space. The will to regenerate a piece of the city starting from the re-use of existing buildings, allowed to consider the state of affairs, lying as a witness of the intense productive life that determined the success of the company, as a starting point in the design process to built.	COOPERATIVA CERAMICA D'IMOLA	PRIVATE	FABBRICA DI CERAMICHE	S-C/COMM.	**GROUND FLOOR** EXHIBITION SPACES DIVIDED BY PANELS THAT DO NOT TOUCH THE EXIXTING STRUCTURE **FIRST FLOOR** MULTIFUNCTIONAL SPACE
	4	1	**SCUOLA MEDIA - EX FORNACE (RICCIONE – RI)**	RICCIONE - RI	This project deals with the renovation of the old brick kiln in Riccione, which was built in 1908 and then abandoned in 1970. The old functions are replaced by new ones, enhancing the spaces of the old buildings, that keep their shapes, in memory of the site. The projects consists of a school, a multifunctional theatre, an office building and the external setting.	COMUNE DI RICCIONE	PUBLIC	FORNACE DI LATERIZI	INST.	**SECONDARY SCHOOL (18 CLASSES)** **SCHOOL GYM** **THEATRE (650 SEATS)** "Coffee theater" always open to the public; rooms for theatrical and musical workshops, to be used for testing; dressing rooms with facilities connected to the theater stage **OFFICE BUILDING** **EXTERNAL AREA** parking lot
	5	1	**VIA PASUBIO 3**	PARMA	The project moves from the awareness that to preserve the memory of the industrial buildings of the Ex-Scedep is necessary to identify new functions capable of keeping alive these architectures. The study of the most appropriate use destinations preceded the project and then join him in the developments and further investigation.The goal is to maintain the architectural specificity of industrial buildings, looking for any space the more compatible function to be set up. The project aims to address the concept of urban space in an organic way, intervening in an area that has developed, continuing to change, starting from the first half of the twentieth century. In a context of profound change in the area north of the city, it was necessary to reinvent not only the use but also the role of these industrial buildings, their new urban function. The theme of the relationship with the North part of the city, especially with all the Pasubio sector has led to redefine new crossing paths and to give a new role to the existing ones.	COMUNE DI PARMA - STU PASUBIO SPA	PUBLIC/PRIVATE	CONSERVE DI POMODORO	S-C	
	6	1	**TECNOPOLO DI REGGIO EMILIA**	REGGIO EMILIA	They returned 'to life' for the architect Andrea Oliva hand, the former "Officine Reggiane" milestone for the history of the city of Reggio Emilia. Built as factories (Officine Reghi) of railway rolling stock and converted, during World War II, to produce warheads for bullets and guns and, later, war planes, have become now Tecnopolo for industrial research. In the "former Reggiane" remains a dynamic, since it is an open set, not definitive, constantly changing: they are part of the specific facts of the factories, roads and squares, but also abstract elements as the process industrial, visionary and avant-garde. The Shed 19 is a great cover whose figurative and typological characteristics are reflected precisely in the form of empty space and limited, for this reason, for the respect of the historic structure, the subdivision of the rooms is via independent modules both structurally and thermally increasing the surfaces available and enhancing the public indoor space "	COMUNE DI REGGIO EMILIA E REGIONE	PUBLIC	OFFICINE MECCANICHE	R&D	The main spaces are: laboratories and offices(wooden blocks on 3 levels with terraces), meeting room, foyer, open space, galley
	7	1	**CENTRO MULTICULTURALE LE TORRI DELL'ACQUA**	BUDRIO - BO	The Water Towers are located in Budrio, near Bologna. It is the former aqueduct, built in 1912 and completely restored in 2009 thanks to a major work of redevelopment strongly desired by the Municipality of Budrio, which has found the support of the Emilia Romagna Region and the Compagnia di San Paolo. The restoration project, curated by architect Andrea Oliva, ranked first in the competition Centocittà Prize, aims to subtract from the progressive degradation a historic and symbolic space, earmarked as a multipurpose center.	COMUNE DI BUDRIO	PUBLIC	ACQUEDOTTO	S-C	**GROUND FLOOR** EXHIBITION SPACE - CAFE'- THEATHER **FIRST FLOOR** EXHIBITION SPACE - ROUND BOWL - THEATHER

EMILIA ROMAGNA	8	1	**MINO OSTELLO DELLA GIOVENTU'**	MIGLIARINO - FE	As a part of a program for the conversion of an old hemp factory into a new city center for the town of Migliarino, the project gains a youth hostel out of a 510 m2 portion of the building. The site position is barycentric to the touristic circuits which take place during the summer, thanks to the proximity of the Po River Delta Natural Park, but the project has to count on a reduced regional funding, 270.000 € including the furniture, and a doubtful management profitability.	COMUNE DI MIGLIARINO	PUBLIC	CANAPIFICIO	HOSP.	**GROUND FLOOR** reception and service spaces (facilities) **SECOND FLOOR** one large room with air-illuminating surfaces on one side only, is characterized by autonomous cells (7 curtains). On the opposite side it is arranged on two levels four rooms with private bathroom, common toilet and a staircase.
TRENTINO ALTO ADIGE	1	1	**NEW SWS OFFICE BUILDING**	MATTARELLO - TR	The renovation project of the industrial complex, former headquarters of Cantine Todesca in Via della Stazione in Mattarello on the southern outskirts of Trento, mainly provided for the maintenance of existing volumes: an office building, a shed with vaulted Botta and a connection body between the two blocks.	SWS ENGINEERING	PRIVATE	CANTINE VINICOLE	OFFICIES	**GROUND FLOOR** 24 SPACES: OFFICIES - RECEPTION - SERVICE AREAS **FIRST FLOOR (OFFICES BUILDING)** OFFICIES **30 PARKING LOTS**
FRIULI VENEZIA GIULIA	1	1	**POLO MUSEALE DEL PORTO DI TRIESTE**	TRIESTE	Inside the Old Port of Trieste the Port Authority established the museum center of the port inside two recovered buildings, located in the north towards Barcola and originally dedicated to the production of energy for the entire sector: the Hydrodynamic Power Station and the Power Converter Substation. The Hydrodynamic Power Station, built around 1890, was recovered in 2012. The Power Converter Substation, building constructed around 1913 by Giorgio Zaninovich, student of Otto Wagner, was recovered in 2014.	AUTORITA' PORTUALE DI TRIESTE	PUBLIC	CENTRALE IDRODINAMICA E SOTTOSTAZIONE ELETTRICA	S-C	**HYDRODYNAMIC POWER STATION** The building consists of three main parts divided as follows: the North, now destined to conference room, part South, symmetrical to the previous one, where are located the workshops and the great hall of the vertical motor pumps, and the central part which originally housed the boilers, divided now into three rooms of uncertain destination. **POWER CONVERTER SUBSTATION** The building is made up of two main parts conformed to L and it is dedicated to house in the basement level the historical archives, and in the other levels study rooms and offices.
VENETO	1	1	**THE CONTERIE**	MURANO - VE	The Conterie were a two-hectare-wide industrial complex located in the heart of Murano. Brought into being between the end of the 18th century and the first half of 19th century, the Conterie's zenith dates to the second half of the 19th century, when the complex achieved its maximum industrial output. Decline, on the other hand, kicked in in the 1970s, and the factory was finally closed down in 1993. Two years later the complex was acquired by the Municipality of Venice.	COMUNE DI VENEZIA - INSULA S.P.A	PUBLIC/PRIVATE	VETRERIE	RESID.	1 Hotel, two residential complexes (A 36 - B 18), handicraft and commercial spaces
	2	1	**MTMA SPAZIO ZEPHIRO**	CASTELFRANCO VENETO - TV	In a hinge area between the city center and the periphery, Zephiro space is characterized as a place to vocation workshop, where different entities engage in the search for new interpretations for new socio-cultural models, value and business. Therefore not only a design intervention, but a process in which the architecture was the glue, the tool to converge, meet, stimulate. So craftsmen called to provide a service are now a partner / sponsor of the initiative, professionals work together with cultural workers, citizens come together in the spaces of aggregation. New types of production and new forms of dialogue between different operators generate, now, curious new opportunities.	ZEPHIROTORNA	PRIVATE	AZIENDA TESSILE	S-C	ENTRANCE/EXHIBITION SPACE GALLERY/EXHIBITION SPACE WORK SPACE ART SPACE - INTERDISCIPLINARY LAB DIGITAL PRODUCTION WORKSHOP PORCELAIN WORKSHOP 2 BATHROOM CHANGING ROOM
	3	1	**IL PANIFICIO DELLA PROVIANDA DI SANTA MARTA - POLO UNIVERSITA' DI VERONA**	VERONA	The Provianda of Santa Marta is an industrial archaeological complex located in the historic center of Verona in the Veronetta district. It was designed by Austrian Genie Direction stationed in Verona and built between 1863 and 1865. It was originally intended for the production of bread and cakes, the deposit and the administration of other kinds of subsistence, but from 2009 is home to the departments of economics, University of Verona. In Santa Marta Bakery the organization of the working cycle was integrated with the spatial system rationality: the internal structure of the building, on four floors, it is directed to a square pattern of the system made up of rib vaults in brick sustained by pillars in stone cutting. The solidity of the structure, suitable for warehouse cargoes, joined the flexibility of use and the internal space organization.	COMUNE DI VERONA	PUBLIC	PANIFICIO	INST.	**BASEMENT** 6 LABS AND BOOKS DEPOSIT **GROUND FLOOR** CLASSROOMS - SECRETARIAT STUDENTS - SECRETARIAT TEACHING **FIRST AND SECOND FLOOR** TEACHERS' STUDIOS - OFFICES OF TECHNICAL AND ADMINISTRATIVE STAFF - MEETING ROOMS AND CLASSROOMS RESERVED FOR GRADUATE STUDENTS **THIRD FLOOR** LIBRARY WITH 320 SEATS AND 32 WORKSTATIONS FOR THE RESEARCH
	4	1	**ATELIER EERA**	CAVAION VERONESE – VR	EERA atelier is situated in Sega di Cavaion, in the Verona province. Architect Alberto Salvadori, creator of the refurbishment project, reconsidered the building of the Sixties where EERA stands from a "vintage" logic to reinterpret tradition with the typical style themes of the contemporary language, inspired by the influences from the stone world. It is namely the stone quarry, where the force of natural elements is preserved, that serves as reference model to the architectural definition of space. The atelier is conceived as multisensorial journey, an environment where figurative art and architectural works interlace, giving way to a symphony of shapes, materials, inspirations.	CEV MARMI E GRANITI S.P.A	PRIVATE	FABBRICA LAVORAZIONE MARMI E GRANITI	COMM/MIX	Three exhibition set divided into macro areas: bathrooms / SPA, wellness / relaxation and technology / innovation. Area for consultation and the choice of the samples of the stones, space for conferences and meetings is set in the loft area of around 125 square meters, which is accessed by a ladder.
	5	1	**AUDITORIUM LO SQUERO**	ISOLA DI SAN GIORGIO MAGGIORE - VE	The Giorgio Cini Foundation created a new space for music in Venice: the Island "Squero" of San Giorgio Maggiore. A former workshop for the repair of vessels has been transformed into a modern and impressive auditorium, thanks to the intervention of Cattaruzza Millosevich and architects. The construction of the Squero dates back to the mid-nineteenth century: its structure is inspired by the great Venetian architecture, resuming the Arsenal model of which recovers design, materials, functional diagram, placing itself in comparison with the oldest Isle customs warehouse (the former Convitto) inspired, instead, to the Magazzini della Dogana della Salute.	**REGIONI:** FRIULI VENEZIA GIULIA VENETO TRENTINO ALTO ADIGE **PRIVATI:** FONDAZIONE BRUNI TEDESCHI FONDAZIONE GIORGIO CINI ONLUS	PRIVATE/PUBLIC	SQUERO DELL'ARSENALE	S-C	LOBBY - 2 TOILETS - WARDROBE - AUDITORIUM FOR 200 PEOPLE

MARCHE	1	1	**BIBLIOTECA EFFEMME23**	MOIE DI MAIOLATI SPONTINI - AN	Furnace of Moie of Maiolati Spontini back to life as a community meeting center. Many places of aggregation within the total area: the library, the bookstore cafe, the information center, a conference room named after Joyce Lussier, spaces for the solidarity group - documentation center of the municipal. Different places, united under the same common denominator eFFeMMe23 multiple.	COMUNE DI MOIE DI MAIOLATI SPONTINI	PUBLIC	FORNACE DI LATERIZI	S-C	Information Center,Conference room, literary cafe, the Municipal Library, Comuni della Media Vallesina space, Documentation Center, Mezzanine studio
UMBRIA	1	1	**CENTRO ARTIGIANALE**	SAN MARTINO IN CAMPO - PG	The project involves the transformation in handicraft center of the former "Conservificio Drommi": an industrial complex grew up around a nucleus of thirty years old in which the refinement of the manor buildings compares to poor essentiality of industrial sheds, although of modest workmanship constitute a finding valuable in modern construction techniques.	AGRICENTER S.A.S.	PRIVATE	FABBRICA DI CONSERVE ALIMENTARI	COMM.	**FIRST BUILDING** 4 SPACES **SECOND BUILDING** 5 SPACES **ANNEX** 1 SPACE **CHAPEL** 1 SPACE
	2	1	**THE BURRI COLLECTION – THE OLD TOBACCO DRYHOUSES**	CITTA' DI CASTELLO - PG	The exhibition center built in the former drying rooms Tobacco was opened in 1990 and complete the Palazzo Albizzini collection. The structure was built between the late fifties and the mid-sixties by the Fattoria Autonoma Tabacchi for drying of tropical tobacco produced in the Upper Tiber Valley and has been disposed of in the seventies; the current target has saved from destruction the architectural structures, an interesting example of twentieth-century industrial engineering.	FONDAZIONE BURRI	PRIVATE	ESSICATOI DEL TABACCO	S-C	9 BUILDINGS DIVIDED IN 11 SPACES GREEN AREA HOSTING SOME WORKS OF THE ARTIST
TOSCANA	1	1	**STUDIO E GALLERIA COMMERCIALE EX LL.R**	TORRITA DI SIENA - SI	The building housed the railway workshops, now a commercial gallery / directional. The whole complex was in a state of abandonment after the last war of the last century, the business area also included the nearby furnace, now transformed into a commercial center. The overall recovery of the area began in 2000, the intervention is architecturally very questionable. Also in this case, therefore, the result is a compromise between the strictly binding general intervention, and the specific intervention that it was possible to achieve in the space in question.	MASSIMO ZANELLI STUDIO	PRIVATE	OFFICINE FERROVIARIE	OFFICE/COMM.	**GROUND FLOOR** ENTRANCE - BREAK AREA - WORKS STATIONS (4 DESKS) - PRINT STATIONS - LIBRARY - SCALE MODELS AREA - BATHROOMS - MICRO KITCHEN **FIRST FLOOR** SCALE MODELS EXHIBITION AREA - ARCHIVE - DIRECTIONAL STATION
	2	1	**MUSEO DELLA CONCIA**	SANTA CROCE SULL'ARNO - PI	The project involves the construction of a Museum of Leather by recovering some of the buildings and areas that are part of the complex built by Lapi Tannery and the municipal slaughterhouse, abandoned for some time. La Via della Pella on which faces the complex is characterized by a sequence of tanneries of varying size, but with similar typological characteristics which amounted togenerally orthogonally and sometimes parallel to the road. The productive transformation needs of post-war, with the inevitable budding of complementary industrial volumes, together with a widespread construction of the free spaces and the degradation generated by the recent abandonment of the old tanneries, have given the area a composite and look messy, difficult to live, that the administration wants to recover.	COMUNE DI SANTA CROCE SULL'ARNO	PUBLIC	FABBRICA TESSILE E CONCIARIA	S-C	**OPEN GALLERY** **NEW BUILDING - 2 FLOORS** EXHIBITION SPACE - WARDROBE - TICKET OFFICE - RECEPTION - BATHROOMS **RESTORED BUILDING** EXHIBITION SPACE
	3	1	**GALLERIA PROJECT GENTILI**	PRATO	The gallery is located in a former factory in the center of Prato. After five years of activity the Galley has been closed and moved to Florence because of its uncomfortable accessibility.	FAMIGLIA GENTILI	PRIVATE	FABBRICA TESSILE E CONCIARIA	S-C	BATHROOMS - ENTRANCE - EXHIBITION SPACE
	4	1	**MUSEO DEL TESSUTO**	PRATO	The building housing the Museum, the historic "Cimatoria Campolmi Leopoldo e C.," is a monument of industrial archaeology and the only large nineteenth-century factory built within Prato's medieval city walls. The architectural complex constitute the city's main cultural centre; the Museum occupies half of the space, about 4000 square metres, while the other half houses the "A. Lazzerini" Municipal Library. The urban renewal, achieved by the City Council, was born from the desire to transform an industrial container, a symbol of the civil history of the city, into a cultural centre. The restoration work was strictly conservative and allowed for the preservation of the original character of the structure and the subsequent historical layers. From the old factory sign to the steam-powered boiler room, from the vaulted ceiling of the historic textiles room to the aged wood beams on the upper floor.	COMUNE DI PRATO	PUBLIC	FABBRICA TESSILE E CONCIARIA	S-C	**GROUND FLOOR** CAFE' - TICKET OFFICE/BOOKSTORE - 3 EXHIBITION HALLS (1 IS THE BOILER ROOM) - ADMINISTRATION OFFICES - DEPOSIT - RESTORING - RELAX AREA - BATHROOMS **FIRST FLOOR** 4 EXHIBITION HALLS (1 IS TEMPORARY) - DIDACTIC WORKSHOP
	5	1	**PRATO LOFTS**	PRATO	The Prato Lofts, designed by mdu architetti, deals with the transformation of a warehouse of the second half of XX century located in Prato, Tuscany, in Italy. The building is located in a unique urban tissue of the city of Prato, that was perfectly described by Bernardo Secchi with the word mixitè, that is made of small houses, industrial buildings, open spaces with spontaneous activities of urban agricolture.	CDM IMMOBILIARE	PRIVATE	FABBRICA TESSILE E CONCIARIA	RESID.	LOFTS DEVELOPED ON 2 FLOORS

LAZIO	**1**	1	**LANIFICIO - STUDIO KAMI**	ROMA	In Rome, inside the Ex Lanificio Luciani (former Luciani woolen mill) on Via di Pietralata, new productive and artistic realities are emerging which are changing the internal appearance of this property by transforming its use. The building, which has maintained its structure, is now home to many artistic and professional activities; in particular the section that owns the Lanificio 159 space has been converted to the Art Citadel and Architecture. The charm of the post-industrial location is enhanced by the geographical location of the former wool mill: the building overlooks the River Aniene and the homonymous Nature Reserve.		PRIVATE	LANIFICIO	OFFICIES	**LANIFICIO159** one room with small kitchen, terrace and views of the river. It measures 270 m², terrace 70m² **LANIFICIO KITCHEN** Loft that measures 300 m² **GALLERY** Loft that consists of one room with covered terrace and view of the river. It measures 170 m², 25m²covered terrace **RIVER LOFT** with two communicating loft overlooking the river. Measures 320 square meters in total, 200 m² large room - 120 m² 2nd room **ATELIER** Loft consists of two floors, with independent loft and area services. Room measures 800 m², mezzanine 350 m², 100 m² area services. **ORTO** Summer terrace equipped with bar, barbecue area, sound system. It measures 1,000 square meters, fully furnished.
	2	1	**MACRO TESTACCIO**	ROMA	Museum of Contemporary Art of Rome. MACRO's exhibition space at the Slaughterhouse recovered two of the four monumental abattoirs that are the heart of the complex of Joachim Ersoch. The original buildings that characterize the entire architectural complex, built between 1888 and 1891 by Gioacchino Ersoch, witness the passage from classicism to modernity, providing an important historical example monumental industrial architecture and rational of the late nineteenth century. The Slaughterhouse is considered one of the most important industrial buildings in the city for the modernity and originality of its structures.	COMUNE DI ROMA	PUBLIC	MATTATOI	S-C	**EACH PAVILLION** EXHIBITION SPACE - 2 MEZZANINES
PUGLIA	**1**	1	**CANTIERI TEATRALI KOREJA**	LECCE	The site of the group is a particular place: a 3.000 mt2 - wide area, ex brick factory restored and now meant to be a place for performing and cultural events. A composite place with outdoor and indoor spaces for Theatre, Dance, Music, Cinema, Video, Figurative arts and new communication technologies. At the heart of the artistic project is the creation of a place where to produce Koreja's shows and also a place where to perform every kind of art. The interaction among the different moments composing the artistic events - Producing, Putting-on, and Training -, the identification of a well recognisable target group/ audience (common people and youngsters), the choice of the present days as research into the "new", hospitality and multifunctionalism are the core of the artistic model which is being realised.	REGIONE PUGLIA	PUBLIC	FABBRICA DI MATTONI	S-C	**THEATRE**: 203 SEATS - CONCERTS AND SHOWS **REHEARSAL ROOM:** REHARSALS AND TRAINING **ROOM LABORATORY**: WORKSHOPS AND SHOWS **FOYER:** EXHIBITIONS, CONVENTIONS AND MULTIMEDIA ACTIVITIES **VIDEOTEC AND LIBRARY** **REFECTORY AND GUEST QUARTER** **OFFICES**
	2	1	**OFFICINE CANTELMO**	LECCE	The Student Center, activated in Lecce at the former Officine Cantelmo, in Viale De Pietro is an open structure to young people and the city. Officine Cantelmo, which previously housed a factory for the manufacture of iron and were a fundamental part of economic life of Lecce, today, after the recovery by the municipality of Lecce with the funds coming from the European Community, have become a cultural container available to students, a bridge between the University and the City, between the world of education and the workplace. The Student Center "Officine Cantelmo" is a tool of promotion and information, socializing and cultural exchanges. And 'run by the Cooperative "Lecce University City", made up of graduates of the University of Salento with experience in various student associations.	REGIONE PUGLIA	PUBLIC	FABBRICA PER LA LAVORAZIONE DEL FERRO	S-C	**INFORMATION POINT** **JOB CENTER** **INFO POINT FOR FOREIGN STUDENTS** **CAFE'** **STUDY ROOM** **INTERNET POINT** **CONFERENCE HALL:** 300 SEATS
SICILIA	**1**	1	**CENTRO FIERISTICO LE CIMINIERE**	CATANIA	The area of Catania sulfur refineries stretched for dozens of hectares in the vicinity of the station and the port, the only example in the South of Italy, a real industrial area. Ceased at the end of WWII, the intense activity of factories Catania, and after a long period of neglect, the generous chimneys have taken to be witnesses and symbol of economic, social and cultural life of our days. Valuable example of industrial archeology made accessible thanks to the choice of environmental enhancement, commissioned by the provincial administration and the careful work of recovery and restructuring, coordinated by architect Giacomo Leone. Today the center is the chimneys, with its historical memory and its striking architectural landmark, an ideal showcase the Mediterranean and the world for activities Perspective of the exhibition chimneys, exhibitions, conferences, cultural and educational.	COMUNE DI CATANIA	PUBLIC	RAFFINERIE DI ZOLFO	MIX	FAIR, EXHIBITION AND CONFERENCE

SICILIA	**2**	1	**MUSEO TECNOLOGICO DEL LATERIZIO**	CALTAGIRONE - CT	The object of restoration and recovery, with functional recovery, is an old furnace of the Hoffmann type bricks whose area it appeared in a state of neglect and decay. The furnace is located in Caltagirone, and is located at the northern entrance of the city in an edge of the old downtown area. Here is the former industrial area of "Conadomini" where there is a building of industrial archeology of the twentieth century, near a clay quarry which, for centuries, has provided the old factories of local potters. The birth of the industrial area in 1954 and ended its production cycle on 03/12/1984. The project has aimed to raise and place Caltagirone within the Sicilian tourist circuits through an operation of the enhancement of its cultural heritage, that just in the art of ancient pottery finds an important and essential cultural identity - craftsmanship that distinguishes it in artistic landscape of the island trades. The project, therefore, tends to emphasize to one of the high profile craft activities, that of the brick manufacturing, which for many centuries has been identified with the history of the city of Caltagirone.	COMUNE DI CALTAGIRONE	PUBLIC	FORNACE DI LATERIZI	S-C	**GALLERIE DELLA FORNACE (75 m)** EXHIBITION SPACES **ENTRANCE HALL (PARALLELEPIPED)** RECEPTION - TICKET OFFICE - HISTORICAL DOCUMENTATION ROOM - BOOKSHOP - TERRACE
	3	1	**ZO CULTURE**	CATANIA	Zo is a "factory" planning and producing cultural events, in network with similar international structures, aiming at promoting the diffusion of all contemporary artistic and cultural expression. Zo is a space which is continously changing, born to receive multidisciplinary events with different requirements and characteristics, and trying to test new ways of presenting events. Zo is known in Italy as a "pilot project" because it tries to add a strong cultural spirit to an innovative shape of management.	**FINANZIATO DA** SVILUPPO ITALIA **GESTIONE** COOPERATIVA OFFICINE	PUBLIC	RAFFINERIE DI ZOLFO	S-C	**GREEN ROOM** fold-away seating area of 250 places; concerts, plays, dance performances, dj sets and video screenings. The green room is equipped with lighting, audio and video systems (300 SQ.M). **GREY ROOM** is dedicated to courses workshops and production activity for performing arts; it has changing rooms and bathrooms (230 SQ. M). **ZO FOOD** (Restaurant and refreshment area) The restaurant/coffee shop of Zo based in the old part where sulphur was processed, is by the main entrance of the building. **IL POZZO** (bookshop / info point) It's an internet access point with a wide selection of cultural material and a collection of art magazines and texts. **OFFICES** The place of management activities of all the cultural events. **CAR PARK**

REGION	N°	CASE STUDY	TECHNICAL CHARACTERISTICS				
			TOTAL AREA - m^2	SURFACES	SURFACES - m^2	ARCHITECTURAL FEATURES	INNOVATIVE KEY FEATURES
PIEMONTE	1	MUSEO DEI CAMPIONISSIMI	3000				
	2	CASA ZERA	4300			CASAZERA is the grafting of new independent living quarters within an existing industrial structure fully preserved in its compositional logic. volumetric cuts inside the body of the building generate clear views towards the external environment, internal natural light wells. The green integrated in private relationship external spaces increases the spatial and architectural quality of the intervention. It generates intensive residential architecture built with full and empty at all levels that define a continuity with the city and a web of visual relationships.	CASAZERA aims at greater degree of prefabrication in the factory and plant integration possible. The manufacturing technology is based on precast lightweight dry, ie the mechanical assembly of laminated materials of various kinds, on a wooden frame. Each unit or units cluster is structurally independent from the existing industrial structure in order to allow maximum flexibility in design; all surfaces that enclose the heated volume are constituted by a wooden frame externally buffered and isolated inside. The completion of the wall and ceiling packets with subsequent functional layers (thermal insulation, waterproofing, etc.) Varies according to the exposure and performance requirements.
	3	QUARTIERE AURORA	7000			The complex actually consists of two sleeves, a newer building, for which the project involved the demolition and rebuilding from scratch volumes, and instead consists of two historical wings which, together with the external facades, according to baffate the regulatory plan, were affected only by a philological restoration. In both cases, the constant presence of the glass offers contemporary living patterns, in bright environments where the external borders in the internal spaces. The concept of livability is the main theme of the whole project: the project proposes a reinterpretation of living, through a flexible use of interior and exterior spaces, the latter made especially enjoyable by large balconies-terraces of which has largely housing and hanging gardens on the roof of the new wing made. The interior courtyard has been designed so as to allow the livability, primarily through the many sessions placed on the inside, but also thanks to the distribution of the spaces, which alternate with the green of the flower beds on the wooden walkways and transparency of a blade water that enlivens the whole courtyard.	Here the proximity to the river Dora formed the premise fundamental to designing a house devoted to ecology and saving energy, obtained through a geothermal system that uses water aquifer, with a reversible heat pump which produces both thermal energy both the summer refrigeration.
	4	LA CASA DEI PRODUTTORI	9400	COVERED AREA	6000	The complex of "Cineporto", so originally defined, is home to a collection of synergic functions: five space modules - each on two levels - for the film crews, the casting space, a movie theater for viewing dailies, a carpenter, a loft for the shooting, an area for large productions and a restaurant. The articulation of the various functional areas is realized through a series of major corridors, conceived as inner city streets, onto which built scenes and a green patio. A new building, connected to the factory but formally independent, hosts the storage of technological tools, the gatehouse and the garage for "cinemobili".	Subdivision of spaces in modules, each on two levels and with a different function. The articulation of the various functional areas is realized through a series of major corridors, conceived as inner city streets.
	5	MUSEO ETTORE FICO	2000	EXHIBITION AREA	1100	The building which houses the Museo Ettore Fico is part of a former manufacturing facility which through the years underwent significant transformations. The MEF occupies a total of 2000 square meters, of which 1,100 exhibition and is composed of a series of spaces and volumes interconnected between them in an organic manner, developed around a path on multiple levels. Originally it appeared as a large void volume intrinsic architectural features such as vaulted ceiling and large windows backgrounds. The building opens to the city of Via Cigna with a metal facade. Orthogonally set to via Cigna, the building has a rectangular plan whose short side is about 10 meters long, while its length measures 100 meters; its highness is remarkable: about 17 meters. In the visual perception, its proportions are amplified by its tunnel roofing. Wide full-length windows and panoramic aspects offer open views and a lively play of light. A smaller two-storey building is directly connected to the main body. A vast terrace overlooking via Cigna tops the building and forms a special visual relationship with urban landscape.The design was particularly focused on studying and enhance natural and artificial lighting, as well as on modulating and managing the most convenient lighting to fully enjoy the museum.	The design was particularly focused on studying and enhance natural and artificial lighting, as well as on modulating and managing the most convenient lighting to fully enjoy the museum.
				SERVICES AREA	900		
	6	FONDAZIONE MERZ	3200	EXHIBITION AREA ON THREE FLOORS	1400	The building has a total area of 3,200 square meters of which 1,400 intended for exhibition space, on three levels, including an outdoor area, and the remaining craft services (library, study center, bookshop and café). The basement retains the presence of some technical rooms in use in the thermal plant. The space, made totally new with direct access from the staircase in the hall on the ground floor and which is also for exhibition of the works, as well as an autonomous suggestion, it provides the visual glimpse of the external tank of the former tanks, placed at the same height . The tank, which is also used for exhibition purposes, is the place that more than any other brings back memories of the past function of the building. The hall on the ground floor, 10 meters high and with an average width of more than 15, is illuminated by the light from the large windows located on the side facing the square, also strictly preserved. The first floor is partly used for exhibition purposes and partly houses the premises for a library and study center. The sophisticated sobriety and care with which the original forms have been identified and valued the building, did not prevent the use of advanced technologies in respect of the electrical and special systems, some of which have been laid "in sight" to emphasize the character of the intervention.	
	7	FABBRICA DELLA RUOTA					
	8	FONDAZIONE PISTOLETTO	8500			Cittadellarte is structured organically according to a cellular system that configures itself in a main nucleus that subdivides into different nuclei. These take the name of Uffizi. Each office carries out its own activity addressing specific areas of the social system. The goals of the Uffizi are: to produce a responsible transformation of global society, starting from their smaller local dimensions.	

LOMBARDIA	1	**FONDAZIONE PRADA**	18.900	EXHIBITION AREA	11146	Within the perimeter of the Largo Isarco complex existed two freestanding structures: one flat and square and the second more vertical. On close inspection, the square building did not offer attractive possibilities and was demolished, enabling the courtyard to become a significant element for open-air use. The Deposito, an existing building on the west edge of the complex, is adapted for curatorial ingenuity: in its basement, the Fondazione's collection is arranged in a hybrid of strict storage and partial display, creating 'chambers' where work such as a fleet of artists' cars can be unpacked or half opened to the public The freestanding object to the east of the Great Hall, dubbed the Cisterna, is divided in three rooms with three interior 'pulpits' connected to an exterior balcony. Its configuration suggests a precise industrial need that now reads as a religious environment.The Cinema acts as an autonomous cell within the compound. With large bi-fold doors, it can be instantly connected to the courtyard. Inside, the raked seating can be converted into a flat floor, allowing the space to be used for staging outdoor events or as additional, covered gallery space. Four 'houses' that face the courtyard to the north and an abandoned garden to the south accommodate Fondazione offices and permanent galleries. Within their confines sits the 'Haunted House', an existing building with its exterior covered entirely in gold leaf. Inside, the intimate scale of its interiors generates a 'domestic' setting for specific works Adjacent, the Podium forms the center of the compound, sitting at the intersection of the two perpendicular axes through the site. This addition combines two volumes of very different qualities: a fully glazed, column-free podium on the ground floor. Resting on top is another gallery space clad in aluminum foam , with a bubbled pattern. Both galleries provide large, multi-purpose areas for temporary exhibitions and events.	We can consider this project as an adaptive reuse at a macro level, considering the amount of areas. It also present an adaptation of new buildings to the existing ones and not only new spaces to the existing structures.
				OFFICIES AND PRIVATE SPACES	6600		
				EXISTING BUILDINGS	7000		
				NEW BUILDINGS	10600		
	2	**ARMANI SILOS**	4.500			The result is sober architecture and the monumental forms, organized to respond rationally to the functional requirements. The project has preserved the original building envelope, with the characteristic strip window that draws the perimeter. The interiors, all in concrete, are structured around an open court to triple height overlooked by two lateral levels and are traversed by a central staircase connecting the four floors.Inside, the building is organised on the basis of a basilica layout: an open space four floors high with two levels of naves overlooking it on either side. The ceilings are painted black, in contrast to the grey cement floors, and reveal not only the iron structure of the new floor slabs but also all the electrical installations for heating, cooling and lighting the building. The central staircase linking the four levels and organising the exhibition route passes through a vertical opening. The foyer presents a simple glass facade with a light system.	
	3	**BIRRIFICIO DI LEGNANO**	780			The building was recovered and splitted into two parts: one dedicated to the craft brewing and another dedicated to the commercial sector, open to the public.. The outside, where the historical architecture makes the wonderful atmosphere, is fascinating: the old brick façade is reflected in the large mirror of water at the foot of the building. Another important point of the project idea is the desire to allow the visual participation of visitors to the brewery to the production of the brewery process, therefore, has been decided to create an opening between the production area and the area of administration, interposing a bay window, built according to the characteristics typical of the time with iron frame molds;	
	4	**ECOMUSEO MINERARIO DELLA BAGNADA**					
	5	**MASSIMIANO 25**	4225	OFFICIES	2123	The existing internal shed has been maintained in the structure and profile. The space that is visible is that of a complex with a building on the road and two bodies in line at the back, drawing a regular court which overturns the introversion of the shed into a new space of relationships to be discovered beyond the curtain .	
				COMMERCIAL AREA	2123		
	6	**LAP: LAMBRETTO ART PROJECT**	1550	GROSS FLOOR AREA	1270	The functional recovery of the industrial complex is defined by the division into two units that host art workshops, one on the ground floor with independent access from the courtyard that occupies the entire area of shed, the other is made of a tower of new construction in five levels. The last level is characterized by a porch overhanging the entrance, closed by a glass wall that is used as a screen for projections during events or exhibitions. Particular attention was paid to the selection of the coating materials, especially from the technological point of view. The whole part of shed roof of the building is finished with white lime plaster, while the turret is coated with polyester semitransparent panels to highlight the volume.	
	7	**GALLERIA ZERO**	600	GROSS FLOOR AREA	300		
	8	**RESEARCH AND DEVELOPMENT CENTER**	4220			Most of the laboratories of the surface and the totality of the surface devoted to the preparation of the samples for the tests is in common. The offices for quality control are placed in the workshops, while the space occupied by the research and development occupies the head fully glazed for the 3 floors.	Has been inserted a steel and glass structure in the shape of a cube that is not connected to the bearing structure and going to divide the shed into different functional areas.
	9	**EX TESMEC AREA**	3800			Within each new space is readable the skeleton of the building, the old structure, completely cleared and highlighted by the contrast with the color of the walls and new windows. All spaces, designed as a large open space, are on two levels; one on the ground floor with direct access from the outside communal courtyard (the future central square), and a mezzanine with mezzanine areas, which use the light from the skylights and from the perimeter windows. The courtyard, which develops in the center of the area and onto which the six new productive spaces, will house the future green square (800 square meters): a system of paths, parking spaces, seats, wooded areas and areas with grass. A large open space that will link together the various activities located within the area.	
	10	**L'ARSENALE - EDIFICIO PER LABORATORI**	1000	GROSS FLOOR AREA	878	The project maintains the lines and dimensions of the existing building, into perceiving the extensions as new volumes coming out of the current shed: up to contain a whole new level and the main front to form an outdoor terrace and the coverage of 'garage underneath. Even the materials used highlight this differentiation is the existing of solid bricks-faced recycled or reintegrated, while new volumes are covered with fretted sheet metal gray color anthracite and sides of polycarbonate panels opal color; All covers are coated in zinc-titanium panels. And 'realized a basement to use floor garage which is accessed through a wide ramp at the back of the building and of equal width. The interior spaces are designed as large open-space, mostly lit from above. On the facades fretted metal sheet are arranged windows of various sizes, while the polycarbonate sides have some light sockets where you stop the internal insulating coating. The sides of the existing building in brick are totally blindas the whole part of bricks except the grand opening for the 'entrance on the front.	
				COVERED AREA	603		

LOMBARDIA	11	**BASE MILANO - CENTER FOR CULTURE AND CREATIVITY**	8000			The project aims at removing and clarifying rather than adding: through a delicate, accurate and not striking work, it reduces technical and mechanical elements, visual or spatial interferences, barriers, to enable a clearer reading of the proportion and character of space and also the different activities simultaneously taking place. Various levels of interior spaces are connected both physically – with continuous giant scale steps or ramps – opening new and unexpected glazing allowing synoptic views. Design is concentrated in the relationship between the huge ex industrial halls and a limited, precise set of items and volumes made of various forms and dimensions, containing services. Objects added to the existing spaces are instantly evident because of their different nature in relation to the large white spaces and the floors kept in their character of originality, still marked by the traces of previous activities. A limited catalogue of materials has been used in order to obtain an almost blurred background where installations, micro-architecture, cultural events, but especially people, could stand as characters.	
	12	**GALLERIA MASSIMO DE CARLO**	1100			The spaces are divided according to functional logic and the rooms are designed so as to accommodate different exhibitions simultaneously: Each room, different in dimenisone, lighting and finishes can thus adapt to the needs required by the current exhibitions. The lighting project provides industrial equipment and bare lamp bodies that fit into the roof structure or ceiling, in order to create environments characterized by drawn elements. The materials make the places of the neutral and essential exhibition gallery: phenolic plywood for stairs, railings, mezzanines and furnishings, and industrial concrete floor to all the exhibition spaces, aluminum honeycomb panels made of fiberglass for partitions, doors and libraries of offices. At the entrance a huge shelf with numerous works packed welcomes visitors reversing the warehouse concept and bringing up what is usually hidden.	
	13	**VIA CASCIA 6 – EX GIO' STYLE**	20.000			The GIO STYLE plant was so atypical: non-traditional industrial warehouses, but one big block built in c.a. forty meters high, with attics of range up to 1000 kg / sqm, 3,000 sqm per floor and sides with windows for two-thirds to 40 m distance between them. In order to properly divide the enormous spaces of the old industrial plant and thus render it possible to use as offices, showrooms and lofts it was necessary to work with different types of environments, according to the best exposure to the sun, internal heights and plan dimensions. Having to imagine the needs of end users of the different cuts, they were made open spaces equipped with flexible systems' to allow a subsequent refractionation. The corridors that form the connective tissue to fractional units unfold for more than 300 linear meters per floor, inside and outside the building, through a court system. Also for the construction of Cascia via industrial materials they have been used, recycled or 'prefinished' to exploit the sincerity and facilitate reading of the design choices; a huge set of structural materials and soften finishing the impressive existing structure.	According to the needs of end users and the different cuts, were realized open spaces equipped with flexible systems' to allow a subsequent refractionation.
	14	**VIA VENTURA 3,5,15**	20.000	GROSS FLOOR AREA	16600	The existing space is respected: the factory volumes are maintained in their main outlines, but slicing it and subtracting some parts brings light, air and green spaces in the new environments. Terraces, patios and courtyards make possible the new use; Wanting to experiment and meanwhile preserve the existing fabric, have been naturalized some industrial components: corrugated fibrocemeto for new volumes on the roofs; polycarbonate for the light volume of the gatehouse; greenhouses and the stairwells; the galvanized iron thin sheets for technical spaces; the rotary cut plywood panels for cladding; double u-glass plates to close the dissected bodies; railway sleepers, also abandoned and reclaimed to the floors as bollards.	
				COVERED AREA	8500		
				PRIVATE AREAS AND GREEN FORNITURE	1900		
				OFFICIES	4950		
				COMMERCIAL AREA	11550		
	15	**OFFICINE DEL VOLO**	1500	MEETING AND CONGRESS AREA	1270	The structure, built in 1915, is an obvious tribute to quality industrial architecture from the beginning of the century. The 1500 square metres of space cover two levels, divided up into three rooms that can be used as one or separately and a services area. The layout of the Officine del Volo means there are three separate entrances on two private access roads. The building facades are in uncovered brickwork with grey stone inserts. Their main features are the central pilasters, highlighting the central pointed arch window, and conjuring up an unexpected image of a "cathedral" of work. The whole is completed by a courtyard of 15 square metres on the Northwest side, with square paving stones typical of the period, overlooked by a wall of Corten steel and the recent addition of an unusual flight of iron steps. The Eliche Room on the ground floor is punctuated by an orderly layout of columns. The period ceiling, with its beams and wooden planking, brings warmth to the room in contrast with the cement floor. The Biplano Room on the first floor is characterised by wooden trusses, impressive windows and a wide plank parquet floor, all original elements. The room is further enhanced by two skylights, which let in more light. The monoplano room located on the first floor is characterised by sharp lines and trusses and is similar to the Biplano room.	The space can be divided into different rooms trhrough the use of temporary structures.
				COURTYARD	200		
	16	**PIRELLI HANGAR BICOCCA**	15.000	SHED	1400	Pirelli HangarBicocca was divided into bodies of different origin factory by type and extension. The "Shed", for example, typically industrial building made of brick, low height, with gabled roofs and large skylight. In 1955 Breda Electromechanics and Locomotive expands its space with the addition of a cubic building with a barrel vault that today at Pirelli HangarBicocca is the exhibition space called "The Cube". The monumental building which combines the Shed at The Cube, now called "Aisles," was erected between 1963 and 1965 to be allocated to the transformer division. Remained intact in size - 9,500 square meters for about thirty meters - the building has three naves of which, since 2004, welcomes The Seven Heavenly Palaces German artist Anselm Kiefer. Warehouses and shacks, demolished around 2000, stood in the garden, where from 2010 is situated The Sequence by Fausto Melotti.	
				CORPO ALTO	9500		
				CUBO	550		
				GIARDINO	1600		

LOMBARDIA	17	**FRIGORIFERI MILANESI**	27.500	GROUND FLOOR - CUBO	653	Designed in Art Nouveau style, the building has an imposing iron cover, wood and glass and is a happy meeting of architectural and engineering rigor virtuosity. The Palazzo combination of Refrigerators Ice Palace is a revolution for the time, for its multi-purpose integration features.	
				GROUND FLOOR - GALLERIA	630		
				GROUND FLOOR - GOLA	216		
				GROUND FLOOR - CARROPONTE	220		
				GROUND FLOOR - BINARIO	240		
				FIRST FLOOR - SPAZIO 6.60	660		
				FOURTH FLOOR - SALA BIANCA	126		
				FOURTH FLOOR - SALA NERA	84		
				PALAZZO DEL GHIACCIO	1800		
	18	**LA FABBRICA DEL VAPORE**	30.000	GLA	14000		
				AREA FOR PROJECTS OF RESIDENT ASSOCIATION	7000		
				AREA FOR SHOWS, EXHIBITIONS, RESTAURANTS	7000		
LIGURIA	**1**	**NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI**	18.000	EXHIBITION AREA	292	CONSTRUCTION SYSTEM MIXED: CAPRIATA IN CONCRETE AND BRICKLAYING PERIMETER - ROOFING SLOPES WITH FORM A HUT - HEAPED SKYLIGHT- TYPICAL PLANTS OF ANY INDUSTRY.	
				REHEARSAL ROOMS	45		
				AUDITORIUM	700		
	2	**IMMOBILE CONCORDE**	9.300	COVERED AREA	5300	At the design level this choice has resulted on one hand the desire to provide the visitor to an innovative and original spatial experience, and the other part to the need to transform the existing structure, a former printing press housed in a banal and gray structure, in a building with his personal architectural credibility, able to communicate and interact with the urban fabric. Fundamental in this project were the materials, which enabled entirely redefine the image of the building; inside, with the construction of diaphragm walls and ceilings at different degrees of transparency, while the outside has been wrapped with a metallic film in which the shape, the structure and texture recall the world of the motors and of the kinetics. On the side of the Levante building it is placed in the bottom of the main road and looks completely wrapped by the metallic veil, from the top cover, fits vertically integrated with the façade and then bend horizontally and disappear into the driveway gallery. In this way the profile of the building takes the form of an inclined sail stretched out towards the road. A sail on which reflect the sun's rays and transparency you see the inside of the car where the contrasting shapes are visible with the white walls. The entrance opens onto a long hallway, enclosed by sliding walls networked aluminum stretch. At a distance of several meters, it opens a courtyard three stories high, covered but flooded with light thanks to a glass skylight. Around this central space, with inside a metal staircase suspended in space on three steel cables, overlook the administrative offices, stores and commercial spaces in a variety of environments. The colors in the interior spaces are declined in shades of white, gray and stainless steel to emphasize the contrast between the remaining parts of the existing building and added the works in glass and steel, in which prevails the search for lightness, transparency and airiness. The formal research and movement reaches its climax on the roof: under the bright straw, in the space dedicated to the delivery of the new car, the sunlight, playing with the plot creates solids and voids with an unexpected decorative effect. But this case is not a pure aesthetic expedient: its extension, of about 1,000 square meters, has the aim to protect from the sun the skylight and the vehicular roof with 65% of direct light in less and a total visibility and with an effective improving energy efficiency. The terminal part of the structure will house 400 square meters of photovoltaic panels and 4 solar thermal panels for hot water.	
EMILIA ROMAGNA	**1**	**AUDITORIUM NICCOLO' PAGANINI**	1300	THEATER	864	The Renzo Piano took the impact of the large outer walls of the building that once housed the machinery for the processing of sugar: 80 meters long, covered by steel trusses, accompanied by an accessory building used as a maintenance workshop and a smokestack 45 meters high, the plant provided the distribution pattern for the music room and the evidence for the service areas and technical systems. The foyer is on two levels connected by a wide staircase: lower spaces used as wardrobe, top access to the bar and to the audience. The concert hall accommodates 780 seats, slightly inclined on one level for raising the profile of the stage, which are the background the cedars of Lebanon, the oaks and plane trees of the park. Developing the metaphor of a sound factory of factory transformed sugar, reinvents architect so the spaces creating a "telescope" vision that preserves the thick side walls of the factory and to which pits two fully glazed transverse walls, which allow the vision of surrounding park eliminating the boundaries between artificial space and natural space, suggestion that animates the entire project.	Creating a "telescope" vision that preserves the thick side walls of the factory and to which pits two fully glazed transverse walls, which allow the vision of surrounding park eliminating the boundaries between artificial space and natural spaces
				SERVICES AREA	400		
	2	**OPIFICIO GOLINELLI**	9000	COVERED AREA	4500	The recovery of an industrial plant decommissioned in 2008 is the heart of an array in pavilions interconnected by a system of walks, gardens and squares. Here are space science in practice (for scientific and technological experiments), the ideas of the school (to develop creativity in children), the Garden of companies (to promote a culture of entrepreneurship among young people), in addition to the section Educating for instruction (for teacher training).	The global interior is interconnected with the world through open work modes, built according to generating principles with which to contribute to encourage study and experimentation. The strategy of the unfinished: this calls for the non-occupation of the entire available internal space, allowing the Opificio to be flexible over time, since the development of the facility is not predictable.

EMILIA ROMAGNA	3	**SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA**	3000			The project is the result of a work aimed at enhancing the company's identity through a space which combines past and present. This dialogue is translated in architecture through the insertion of a sequence of pure volumes existing in the building kept unchanged. In their articulation they determine the exhibition in a succession of multiple spaces. The comparison that is generated between the rough concrete surfaces of the old structure and the new exhibition spaces, defined by a homogeneous matter, is readable in alternating succession of spacious and collected that guide the user in product discovery. The site plan is defined by two spans of the existing building, which respectively underlie the exhibition areas. The first presents a large central space with a strong naturalistic characterization, highlighting the corporate sensitivity to ecological and sustainable production. Two bonsai, welcomed in large vessels from the sinuous and essential curves, are surrounded by a sequence of green walls that delimit a small exhibition rooms system connected between them; The second area is divided into a broader spatial and finds his characterization in the glass courtyard located at the existing skylight in the roof. A steel structure holding the large transparent surfaces framing the winter garden that encloses a bamboo plant. In both areas the products are arranged and positioned through the use of exhibitors that frame the different surfaces and offer themselves as works of art. The commercial exposure is treated, ultimately, as an art workshop structured by means of supporting elements and spatial subdivision by the extremely simple shapes which, in synergy with the material-memory of the shed are enhanced each other. A steel diaphragm Corten redraws the front entrance of the former factory of the Cooperativa Ceramica d'Imola through a simple volume that successfully combines the older building.	
	4	**SCUOLA MEDIA - EX FORNACE**	40.000	COVERED AREA	3400	The school consists of a one storey volume linked to a two storey one. The classrooms are accessible from a central corridor; the offices, the teacher's room and the library are separated from the gym by the volume containing the stairs and lift. On the outside, brick sun control louvers are used in order to balance a traditional material with an innovative shape: they give, at the same time, both coherence and differentiation to the complex. The school buildings have metal polonceau trusses; over the gym, the sun control louvers system encloses a terrace. The theatre is a monolithic and monumental block, where the openings are hidden by the facade system. The square and the entrance are the most significant architectural elements. They are a kind of extension of the foyer, a place signed on both sides by two long stone benches.	have been integrated the old brickwork structures with a wrap in horizontal lamellas terracotta. Outside, a shading covering terracotta, assembled dry, protect from direct sunlight and favors micro-ventilation of the façade. The bio-ecological quality housing are evidence of a housing to "Zero km", which uses materials of the building tradition, capable of weighing a little on the environment, in their entire life cycle.
	5	**VIA PASUBIO 3**				In order to ensure maximum flexibility of use have been identified, along the spine walls, service slots during which provide for any water inlets and discharges, overlapping between the ground floor and first floor and aligned to local groups on the floors. This allows you to be able to from time to time to allocate a unit double to a single user, or two individual units to different users who can enjoy services and spaces independent accessory. The service blocks are designed so as to be easily connected to exhaust unique vertical uprights. The materials and manufacturing techniques by which is meant the realization of the main interventions (new stairwells, walkways at altitude, plant tower) are presented as "admittedly new" and denounce these through the formal language. The two main groups of buildings that make up compartment are mutually separated by an internal pedestrian cycle path (the paved road network is limited to some places and only for loading - unloading) that widens into a small square to the south, towards the compartment B. This outer space becomes public. The planting of the square with two deciduous trees (arranged in arrays of trees have already been completed by the sector project) can provide shade during the summer, but they leave freely switch the light in winter, makes the use of the most pleasant outdoor space even as the dehor bar. The project involves the construction of two new crossings: two steps to the ground floor of the two blocks to the east make the buildings more permeable complex and improve the connections between compartment and the new road system to the east. These new crossings are indoor exhibition area and are home to the vertical access cores consist of a staircase and a lift - elevators that connect the ground floor with the first floor. On the first floor two new runways at high altitude, characterized by a light structure, blankets and partially screened, they connect the two blocks of buildings East with the two blocks West.	
	6	**TECNOPOLO DI REGGIO EMILIA**	5400	NET AREA	3700	Except for the cement fiber roof asbestos, dismantled and replaced with an insulated metal cover with integrated skylights, the intervention tends to preserve as much as possible the original structure. In this sense, the subdivision of the environments occurs via self-supporting modules, thermally independent and reversible. Down the aisle of the hall, the rhythmic pattern of the original metal structure echoes the sequence of the box comprised of panels of solid wood glued cross-laminated, coupled plasterboard insulated walls (solution that makes sustainable energy requirements). "The new structures of the subdivision and distribution form a building in the building, the articulation of which is subject to the spatiality of the original hangar avoiding contact solutions, mimesis or interference." The boxes are arranged on three levels and house laboratories, offices for startups and spin-offs, meeting spaces; the variable juxtaposition between the various wooden bodies creates terraces, swings and pathways that give dynamism to the new distribution structure.	The subdivision of the environments occurs via self-supporting modules, thermally independent and reversible, creating an autonomous cittadella whitin the hangar.
	7	**CENTRO MULTICULTURALE LE TORRI DELL'ACQUA**	2500	EXHIBITION AREA ON TWO FLOORS	205	The lightness of similar environments in bubbles suspended in space meets the linearity of square shapes in a game of different and split levels, creating a unique place of its kind and very impressive. The spaces, very different from each other, alternating in elegance and versatility of use with large terraces circular or square also usable for recreational moments of the events or special evenings. The use of glass, wood, iron, concrete bare, all expertly lit, lend Le Torri dell'Acqua a rare atmosphere location.	This is a very unique redevelopment as the building has a particular conformation due to its previous use, which differs from common industrial buildings. In this case are not spaces that go to adapt to the functions but are the destinations of use that adapt to the different spaces and to the different forms.
				CAFE'	70		
				THEATHER FIRST FLOOR	130		
				THEATHER SECOND FLOOR	90		
				ROUND BOWL	250		
	8	**MINO OSTELLO DELLA GIOVENTU'**	580		INTERVENTION AREA: 510	The management aspect is a central element of the project: the economic and energy savings become the 'primary objective. The intervention is thought of as a 'passive machine' capable of conveying the natural motion of 'air to draw benefit climate, while the distribution of the plants and the morphological definition of the different environments, designed to obtain a minimization of the elements and of the technologies used, allow an elastic hospitality skills: maximum in spring-summer and during special events, reduced to 'essential in periods with lower turnout. While on the ground floor are provided the reception and service spaces, the second floor has one large room with air-illuminating surfaces on one side only. On the opposite side it is arranged on two levels four rooms with private bathroom, common toilet and a staircase. The volume, compact and well-defined, it is easy to conditioning through traditional methods. In the main space instead the air conditioning is based on passive ventilation, facilitated by the north position of the apertures and by two ventilation towers located in coverage. The fact of not being divisible into more housing units, given the uniqueness of the source of light and air, suggests an alternative solution to the dorm: as in a camping indoors, inserting autonomous cells, bounded by light casings. 'Rooms' independent not only physically but also climatically: a timely conditioning system lets you choose which 'turn'. The entire network plant is housed in inspectable wooden platform that serves as a connective tissue cell-cell. The height difference that the distinction between the more intimate space of the rooms and the common day. The movement of the perimeter of the platform creates opportunities for sitting and relaxing. The space remains fluid while allowing a multiplicity of distinct uses, while the monochromatic furnishings, and inserted elements enhances the plasticity.	Insertion of autonomous cells, bounded by light casings. 'Rooms' independent not only physically but also climatically: a timely conditioning system lets you choose which 'turn'.

TRENTINO ALTO ADIGE	**1**	**NEW SWS OFFICE BUILDING**	4600	COVERED AREA	1000	External: The office building built nell'1987 has substantially maintained its substantial external forms. The intervention of maquillage has been implemented thanks to a metameric paint, which has helped to highlight the many facets of the surface constructed of prefabricated blocks and a brise soleil adjustable system on existing windows. Only adding a glazed body overhang which increased the surface of the inner meeting room. The west facade of the shed is realized with a system large backgrounds windows made to correspond with the internal structure. The large windows facing west have a further protection to mechanized shutters that act as a filter reducing the impact of solar radiation. The south wall of the office building, the north of the hall with its stained glass bubbles and the connecting body are the new courtyard entrance. The interior: The new entrance / reception housed in the main building acts as a filter between the two blocks and internally have been completely redesigned. In the division of space it was given priority to privacy of providing them with offices of large scenes etched glass that run in the long corridor thus protecting the entrances from direct view of the visitor. The shed houses the headquarters (senior and junior engineers) of the SWS engineering. Designed more like open space, the interior space was divided by 2.20 m high partitions that allow, from any location, the view of the barrel vault on which a false ceiling made of polystyrene panels hidden by wooden slats running is mounted. On the east side in a shed extension find their place the senior engineers offices. The spaces are separated by baffles in concrete blocks lightened to view.	In order to maintain this sense of open space, the interior space was divided by 2.20 m high partitions that allow, from any location, the view of the barrel vault.
FRIULI VENEZIA GIULIA	**1**	**POLO MUSEALE DEL PORTO DI TRIESTE**	3270	THE HYDRODYNAMIC POWER STATION	2000	The exhibition design is concentrated in the central area of the building just described. The intervention improves decisively the vocation of this space by a device made of metal frames and infill iron sheets painted. This device, recovering the spatiality original battery of boilers, refurbishes the system three environments, and sets new hosting space in the thickness of its walls: a series of display cases that contribute to the realization of a new and articulated exhibition. The power converter subastation is made up of two main parts conformed to L. The first housed the switches room and the room of the bus bars to 27,000 V, while the second part, facing the Hydrodynamic Power Station, housed a double height room with two different switchboards in low and medium voltage, still perfectly preserved. For the program this building is dedicated to house in the basement level the historical archives of the Port Authority, and at the other levels study rooms for consultation of archival material and definition of the new entrance, which develops longitudinally towards the NE. A permanent fixture in oak custom-designed, re-proposing some spatial rules in close interaction with the geometrical elements of the building and the original architectural seriality machinery housed therein, upgrades firmly the spaces, in close interaction with new typographic signals and installations.	Has been installed a structure made of metal frames and infill iron sheets painted. This device has brought back the three environments, and sets new hosting space in the thickness of its walls that define the path of the exhibition. Those walls are not connected to the roof and have a reduced height that confer the idea of open space to the area.
				THE POWER CONVERTER SUBSTATION	1270		
VENETO	**1**	**THE CONTERIE**	22.000	COVERED AREA	15500	The new residential complexes (A. 36 units, B.18 units) are built inside the disused factory, parts of which are to be preserved. The project for the residential units speaks to the area's existing urban fabric. The units comprised in the A building are shaped by the former factory's north-facing façade, which the apartments adjoin and whose original windows they respect. The juxtaposition of two duplex units and three simplex units brings about a comb-shaped structure which provides ample sunlight from the south, thereby granting the bathrooms both natural light and ventilation. Having lost its original function in the late 20th century, the Conterie became a fenced-off area, a kind of 'enclosure', the very size of which stood in sharp contrast with the densely built urban space that surrounds it. The tension between the two areas is embodied by the tick wall that encircles the Conterie, making the former industrial complex utterly inaccessible and preventing any kind of exchange between it and neighbouring parts of the island. Such a structure means that the distance between the façade of the A building and that of the B building vary, generating a sequence of urban spaces. The A building is completed. According to the renovation plans, the B building, whose project is currently being prepared, will be built inside the existing industrial complex, which has been duly "emptied". The new building is made up of two blocks (each of which comprises 8 residential units and one commercial area). It will also make room for the realization of an indoor square, which will become the centre of the new development.	
	2	**MTMA SPAZIO ZEPHIRO**	550	COVERED AREA	550	The project intervention works from growing for almost all 550 square meters. In the simplicity of a "shed" every need was "bare-bones." By minimizing the masonry works, the intervention respects the original architecture. It has completely redesigned the technological systems, it replaces, but leaves again exposed , trying to witness the industrial characteristic of the place. Robe, however, the interior space of a single material, wood, which creates a common thread in all environments with wooden elements that differentiate the new project functions, environments, atmospheres drawing style coherent and readable, minimalist and neutral. Multilayer panels of French pine, various thicknesses, have been used to create a unique project intervention allowing perception to articulate the new spaces through large sliding partitions between the different environments, becoming a warm floor wooden raft, defining a long vertical partition of ten meters that divides and sets at the same time. Then the project, through the sliding partitions, however, provides independent environments, intimate, that could open up and unite in a divided space that reveals the different identities that inhabit it. The only exception is for the metal-scale loft structure. In its original configuration the complex has a rectangular plan, free, internally drawn by a square texture of pillars. The only exception in the regular perimeter of the structure is given by a body of the building overhang that comes out of the compact shape, with a significant height compared around and very slender. The structural grid on the fronts, the rough character, identitarian and strong impact of this structure addition, the elect as the ideal place to intervene with an "experimental" project that clears the space craft of the old functions and densifies new.	The project, through the sliding wood partitions, provides independent environments, that could open up and unite in a divided space that reveals the different identities that inhabit it.
	3	**IL PANIFICIO DELLA PROVIANDA DI SANTA MARTA - POLO UNIVERSITA' DI VERONA**	25.500	EACH FLOOR	5000	The intervention focuses on a philological recovery of the artifact which included the excavation of the first three courts in the basement. The need to ensure an adequate input of light has been satisfied with the arrangement of a steel cover and glass and of a series of internal border glass; This choice allowed to retain a global perception of the building and at the same time to enable a subdivision in rooms intended for different functions between them. The connection between the different parts of the building is allowed to be a body lifts, a scale and a system of galleries located in the central courtyard of the building.	An adequate input is permitted through a steel cover and glass and a series of internal border glass, allowing to have a global perception of the entire building with its historical features and at the same time to enable a subdivision in rooms intended for different functions between them.

VENETO	**4**	**ATELIER EERA**	600	CONFERENCE AREA	125	The structure consists of a single room measuring about 40 × 15 meters with a vaulted arched in masonry very common in industrial buildings of the '60s. The project led to the revitalization of the interior and exterior spaces by giving the opportunity to host permanent or temporary displays of objects and stone settings, spaces for workshops and educational events, space for the design assisted by specialized technicians and with wide availability of materials samples stone. Despite the contemporary architectural language, the building maintains a lively dialogue with the surrounding industrial context preserving and enhancing the distinctive elements of the original production of the past and the present (bridge crane, still active laboratories). The care given to the recovery of the yards, a time dedicated to the storage of plates, has yielded large green areas to Cavaion industrial landscape. The climbing plants is the new skin of the old façades damaged; it was decided to entrust it to nature the task of "restoring" these facades applying a wire mesh that will allow the climbing plants to cover prospects without resorting to any other maintenance work.	The internal partitions are exhibition structures with uprights and metal crossbars, covered in stone, that allow disassembly and scene changes.
	5	**AUDITORIUM LO SQUERO**	508	LOBBY	18	The building is brick, and measures 28.70 m to 17.70 m, with the major sides characterized by six arches. The roof, supported by wooden trusses, had been rebuilt with a major renovation in 1952. The nuts at the base of the pillars and the frame of the eaves are stone D'Istria. The work of the '52 had radically changed the nature of the boatyard, turning it into a closed building. The elevations east and west, corresponding to the minor sides, were closed with large iron frames, the arches, instead, buffered masonry in the lower part and closed with windows in the upper part. In the following years are realized within the shipyard, on the south side, a loft a.c., then closed with a further frame, and a masonry thermal plant alongside the north side. The project aims to recover the spatiality of the original shipyard, emptying the inside and releasing the large arches of the major fronts. The new auditorium had to be recognizable for design and materials from the original construction, to allow the reading of the two interventions. For this new volume it is all made dry, steel, wood and glass and comes off on all sides by the existing building, as well as from the ground, allowing water to enter the shipyard, because the whole floor slab rests on wooden beams that detach from the ground. The elements that connect the new project context are basically two: the first is the geometry of the new volume, dictated by alignment with the nineteenth-century shipyard, the second is the extraordinary panorama which overlooks the east elevation, towards the lagoon. The view dominates space of the room, thanks to a glass wall that spans the entire east front, for a length of nearly thirteen meters and still on the sides, for a further seven meters. The room floor is lowered in the final stretch, to readjust the eastern façade, which otherwise would be too high compared to water and to hide inside, the view of the glass attachment point, with an effect of continuity between the interior space and external. The hall is clad externally with marine plywood panels, the separation between the new volume and the squero walls allows you to read again the boatyard as a large open shed. The upper part of the walls contains the ducts for the air conditioning which are connected, in a ring design, the two technical rooms positioned in a loft near the entrance, so as to integrate the systems in the overall design.	The new volume is all made dry, steel, wood and glass and is detached from all sides of the existing building, as well as from the ground, allowing water to enter the shipyard, because the whole floor slab is laid on trusses of wood that detach from the ground. The hall is clad externally with marine plywood panels, the separation between the new volume and the squero walls allows you to read again the boatyard as a large open shed.
				2 TOILETS	14		
				WARDROBE/TICKET OFFICE	15		
				AUDITORIUM	237		
MARCHE	**1**	**BIBLIOTECA EFFEMME23**	700			In the architecture of the factory nothing mattered because the relationship between form and function and evolution of architectural form is always linked to the rapid development of production processes, in particular, in the furnaces with Hoffmann system, with the transition from the circular shape to the elliptical and due to the rectangular shape. Furnace of Moie is a nineteenth-century building with an elliptical shape, active until 1966 and then completely abandoned. Next to the furnace there is the structure for the processing of land, already prepared for the installation of machinery for working with clay. It is a building of considerable size, about 700 square meters of covered space, and for a good part about 9 meters high, which faces towards the front of the slot with a porch. Are integral parts of the complex also the office building still preserved in excellent condition and a farmhouse. The furnace, built in a flat area outside the city, close to an area full of gullies, now located in a central position in the new plan for residential development of Moie. On the first floor the attention has focused on the typical organizational system of contemporary libraries / media centers. The design intent was to provide for large open spaces defined by the furniture in favor of freer reading spaces and easy access. This organization allows the user an easier and more direct connection between knowledge. The flexibility given by the furniture, easily displaceable, allows the use of the read-consultation-research as conference room also room for special events. Besides the open-shelf reading, the library provides specific spaces for: reading newspapers and magazines; music; multimedia area with PCs connected to the Internet; area for children / teens.	
UMBRIA	**1**	**CENTRO ARTIGIANALE**	15.000	COVERED AREA	6000	Even in his former cannery betrayed architectural elements maybe not excellent, state of abandonment, but certainly valuable, such as the chimney, the two refined manor buildings and the ranks of the essential outbuildings sheds, which are a precious relic of modern construction techniques. On the other hand, with the exception of the monumental chimney clay, the complex was not subjected to any form of constraint. In addition, the client not only rejected the idea to demolish in order to rebuild from scratch (perhaps "style"), but confirmed the intended productive use and accepted the proposal to articulate the complex into a small "Strapaese", where today do business some craftsmen, including a goldsmith, a cabinet maker, a blacksmith and a stylist. The project has minimized the demolitions, confining the innovations in the interstitial margins. Consequently, the complex has been so restored in architectural elements and renovated under ordinary items, but, above all, has been reorganized around an unusual inner square, performed in the background by thick trees that describe the bend of the nearby river Tiber and dotted with vernacular elements that tend to evoke the climax of artisans picturesque villages: the alley, the avenue, the portal, the public clock, the secret garden. While the attitude of the only factory added body disputes the original plant squareness. The chapel, located in the perceptual center of gravity of the square, is dedicated to the "Madonna della Ceramica" and was conceived not as architecture, but as an art installation. Seen from the tree-lined avenue, the oratory, it seems symmetrical, but it is not, because it really has a skewed triangular layout.	Adaptation of new buildings to the existing ones, going so to create a small village. The point of innovation could be considered the fact that all new activities affecting the whole have a handcrafted nature.
	2	**THE BURRI COLLECTION – THE OLD TOBACCO DRYHOUSES**	7500	EXHIBITION AREA	7000	9 sheds divided into 11 exhibition spaces and green area that houses three sculptures. The warehouses have a height of about 15 meters and are characterized by a reinforced concrete support structure with prefabricated curtain panels, while the roof is steel trusses with hollow clay tiles and jet overhead.	

TOSCANA	**1**	**STUDIO E GALLERIA COMMERCIALE EX I.L.R**	125	MEZZANINE	25	It is a space of 100 square meters, inside the gallery, covered by a barrel vault, with a maximum height of 6.50 m. Therefore, it was realized a mezzanine structure set to 3.20 m gaining additional 30 square meters of floor space, with two access stairs. The intent was to keep as much as possible the appearance already compromised - industrial flavor, it was decided to leave it to view all existing surfaces, brick walls, vaul in cement mix with its steel cables and introducing contemporary elements conceptually in continuity: loft stairs and iron structure calamine; concrete quartz floor; walkable gratings in galvanized steel; polycarbonate walls; to view installations. The result is an open space arranged on two levels.	Have been introducted contemporary elements conceptually in continuity with the industrial flavor of the space. In order to divede the space maintaining the open space, has been inserted a steel mezzanine.
	2	**MUSEO DELLA CONCIA**				The analysis of the existing buildings on the site has led to the decision to keep only the main body of the tannery and slaughterhouse prospectus, the latter destined to become a sort of isolated portal in the new public square. Two new elements defining the edges of the square: a long loggia and a transparent lens-shaped building, deputy to host the introductory and educational sections of the museum. The new building figured entirely as a double-height space, crossed longitudinally by a gallery and lit mostly from above, to take advantage of the maximum of exhibition space. The route takes place as a kind of ring starting from the entrance, on the end of the new building, at the loggia. After having passed through the ground floor hall of the museum, the public can access the tannery, visit workplaces reconstructed in both plans, and through a connecting element between the two buildings, back in the new building to the level of the gallery; from here, via a ladder or a lift, it will finally be possible to reach the exit, coincident with the input. Similar observations can be made, in the former tannery, about the overlap of a light path, with metal walkways above the system of tanks; or inclusion of new scale discreet that you can reach the second floor. But undoubtedly the most delicate issue is the transition between the old factory and the new wing. The intermixing of the two volumes, with the partial emptying of the angle of the tannery to insert the body connection glassed on two levels, is, in fact, an opportunity not to be missed to turn a necessary functional zipper in a much more representative place and able to offer a new perspective to understand the stratigraphic character of the entire intervention.	
	3	**GALLERIA PROJECT GENTILI**	500	EXHIBITION AREA	450	The renovation has tried to preserve the character and the original spatiality through a strategy aimed at highlighting the one hand, through the neutrality of the great walls and floor, the large wooden cover that unifies the entire space and the other to concentrate all the service areas within a white cube that divides the exhibition space into two parts, a larger and a smaller one can also be used separately. Natural light comes from skylights on the roof while artificial light was placed at the trusses so as not to invade the space below with appropriate structures.	The service areas have been positioned within a white cube, which divides the exhibition space into two parts, a larger and a smaller also be used separately.
	4	**MUSEO DEL TESSUTO**	8.500	COVERED AREA	2500	At the end of the nineteenth century, the building was a double storey quadrilateral shape around a rectangular courtyard, featuring a large tank for water collection and a 40-metre high brick chimney at the centre. The factory only reached the current size and conformation in the middle of the twentieth century thanks to modifications and expansions, such as the construction of the beautiful vaulted arched dye-works, which now houses the entrance to the library. The urban renewal, achieved by the City Council, was born from the desire to transform an industrial container, a symbol of the civil history of the city, into a cultural centre. The restoration work was strictly conservative and allowed for the preservation of the original character of the structure and the subsequent historical layers. From the old factory sign to the steam-powered boiler room, from the vaulted ceiling of the historic textiles room to the aged wood beams on the upper floor.	
				EXHIBITION AREA ON TWO FLOORS	2000		
				SERVICES AREA	500		
	5	**PRATO LOFTS**	900			The new facade clearly explicits the metamorphosis of the existing building: a wall made of pigmented conctete is clearly pronounced by the presence of a series of vertical cut that lead to small entry courts. Each loft exploits the specific spatial and constructive elements of the existing building, generating informal spaces for life in wich contemporary issues are related to the former industrial past of the building. Besides the horizontal enclosure towards the city, on the opposite the interiors are based on a refined vertical openness towards the sky: the skylights, the internal courts, the wide terraces on the upper floor generate open and well-lighted places of living, deeply connected to the variations of the sky.	
LAZIO	**1**	**LANIFICIO - STUDIO KAMI**	3500			**STUDIO KAMI** Changes proportions, platforms and railings create various environments within a single space and are used in order to define the different purposes specifically contemplated for an architectural firm (meeting rooms, model rooms, workstations for staff, private offices) all without ever losing the awareness of an encounter with the reality of an industrial past. **LANIFICIO** The entrance of the location is at street level, consists of a single room of about 250 square meters and a terrace of 70 square meters near the river Aniene. The handicraft industry essence lives on in the activities and artistic and cultural events that enjoy this large space, divided into three sections, each used for some other purpose. The lower floor, where the restaurant is spread (400 square meters), has a fully equipped room (300 square meters) for live performances by artists and events. The 1000 square meters of the first level are entirely reserved to the Dance, for a total of 9 rooms, until you reach the second floor, a large area of 600 square meters conceived as an exhibition space for exhibitions and installations. The structure, designed with a view to complementarity and maximum use of the environments, allows access to a bright space, comfortable and welcoming able to satisfy the various needs of the visitors center, both in the study times that recreational ones.	

LAZIO	**2**	**MACRO TESTACCIO**	2000	AREA OF EACH PAVILION	1036	The pavilions consist of a masonry shell that defines a single large room of about a thousand square meters, covered by trusses Polonceau. The interior space is ordered by massive cast-iron columns, iron beams and hoists that structured the matting cells. In this original structure, characterized by a refined design that interprets innovative functional reasons, "it overlaps" in 1925 a horizontal network of rails, hoists and hooks for handling meat from the inside of the various slaughterhouses in the largest "refrigerator" building, constructed masonry and reinforced concrete in 1911 by Ferrobeton. The project focuses on the original relationship between the pavilions and what Ersoch calls the "central rectangle": a large space marked transversely by the symmetry of the slaughterhouses, longitudinally, a long city plug that separated their remittances in iron and cast iron. The newfound "mainstreaming" of the pavilions divided the use of the interior space allowing the organization of museum activities in several areas: a central one, which proposes a philological the original architectural features ersochiana, through the removal of the rails of '25, and two header that organize the "second tranche" of the rails a series of plateau - floating geometry in space - that multiply the prospects and possibilities of fruition, proposing in contemporary terms the systemic seriality of the complex. the materials are those of origin: mastic asphalt for indoor flooring ; travertine stone, brick, stucco and lime colors for the facades; bardiglio, cast iron and iron inside but also steel and glass for new plateau. The new structural elements disappear behind neutral floors, bulky plant pipes mainly exploit the subsoil. Particular attention is paid to lighting environment that discreetly emphasizes the soffit of the roof and the old channels of the floor. Between these two portions, it runs an atmospheric space, clearly marked, but also empty and flexible. Available with the terms and diverse artistic expressions.	
PUGLIA	**1**	**CANTIERI TEATRALI KOREJA**	3000	THEATER	203		
				REHEARSAL ROOM	150		
				ROOM LAB	250		
				FOYER	200		
				LIBRARY	50		
	2	**OFFICINE CANTELMO**					
SICILIA	**1**	**CENTRO FIERISTICO LE CIMINIERE**	25000				
	2	**MUSEO TECNOLOGICO DEL LATERIZIO**	18.000	COVERED AREA	1350	The new architecture is developed in the longitudinal direction, supporting the leadership of the Hoffmann kiln. A housing top mt body. 16, in the shape of parallelepiped with a square base of ml. 14 x 14, is the first architectural form perceived, conceived as a kind of "hinge" between the furnace and the rest of the new building. Through an elevator you can go two different vantage points. The furnace tunnels, at night, light through a diffused light, rain, placed into the holes of the vault, which once served to introduce the fuel. The presence of the large picture window of the central body cancels the gap between outside and inside. From every part of the building organism again you can see all the places outside the machinery as well as you can see from the outside some places machines inside. The exhibition space is modeled around long central area which all services for the museum were displaced. In the large entrance hall were set up the most important services for the first reception of visitors, and that is the reception and the ticket office; to the right is a large room for the historical documentation of the art of the brick work and a multimedia station, the space of the bookshop, and an elevator to access the terrace. Entire new structure was made of steel, while the external coatings were made with prefabricated insulated panels in pre-painted aluminum white color inside, and copper-red color on the outside. All routes are available and accessible by wheelchair users. The external arrangement was achieved by reusing the same artifacts brick. For the accommodation of the free spaces it has used a compound made by crushing waste from decommissioned material of the old factory.	The brick structure of the furnace that is not collapsed completely was enclosed in a glass and steel structure in order to make an all one with the external environment.
	3	**ZO CULTURE**	1600	COVERED AREA	1100		

REGION	N°	CASE STUDY	ACCESSIBILITY			TIME AND COSTS			INTERVENTION CHARACTERISTICS				
			LOCATION WITH RESPECT TO HISTORIC CENTRE (KM)	LOCATION WITH RESPECT TO INFRASTRUCTURES (TRAM - BUS)	STRATEGIC POSITION (CHARACTERISTICS OF THE AREA)	START OF WORKS	END OF WORKS	INVESTMENT MLN €	TYPE OF REFURBISHMENT	TYPE OF BROWNFIELD SITE	DISTRICT REFURBISHMENT	TYPE OF STRUCTURAL RETROFIT	STRUCTURAL REFURBISHMENT
PIEMONTE	1	MUSEO DEI CAMPIONISSIMI	0,75	2			2003	0,85	F/E	DHMR/UTR		RES/RET	
	2	CASA ZERA	2	8	THE SITE IS WELL CONNECTED TO THE HISTORIC CENTRE OF TURIN AND TO THE URBAN FABRIC.	2013	ON GOING	7	F/E	DHMR/UTR	It is located in one of the most innovative and residential neighborhoods of Turin, subject of significant urban development plans being implemented and characterized by the presence of numerous green areas and the river Dora proximity.	RES	
	3	QUARTIERE AURORA	1,5	10	The site is adjacent to the historic center of Turin, 500 meters from the Mole Antonelliana, 30 minutes from the airport "Sandro Pertini" (To), 50 meters of the Dora River, 500 meters from the River Po.	2004	2008	10	F/E	UTR/RR	It is located in one of the most innovative and residential neighborhoods of Turin, subject of significant urban development plans being implemented and characterized by the presence of numerous green areas and the river Dora proximity.	RES/NB	
	4	LA CASA DEI PRODUTTORI	2,1	4	The site is adjacent to the historic center of Turin, 500 meters from the Mole Antonelliana, 30 minutes from the airport "Sandro Pertini" (To), 50 meters of the Dora River, 500 meters from the River Po.	2003	2008	8,5	F/E	UTR/RR	It is located in one of the most innovative and residential neighborhoods of Turin, subject of significant urban development plans being implemented and characterized by the presence of numerous green areas and the river Dora proximity.	RES/NB	Has been kept the original structural elements such as the "shed" roof or the base of the old chimney, the perimeter walls with exposed brick and original windows.
	5	MUSEO ETTORE FICO	2,6	1	The MEF has a pretty strategic position, as it is the first museum that visitors will meet entering the city from Milan and the whole eastern region as well. There is a plan for a new underground stop only few blocks away (in piazza Conti di Rebaudengo) and for the new stretch of the covered city rail link, which will connect the MEF to the city centre in very few minutes.	2013	2014	2,4	F/E	DHMR/UTR/RR	Curreotly the museum is located at the center of an extensive redevelopment program of an abandoned industrial site, so it is actively participating to the regeneration of the neighborhood.	RES	INTERNAL AND EXTERNAL RECOVERY THAT DO NOT INTEREST THE LOAD-BEARING STRUCTURE
	6	FONDAZIONE MERZ	3,9	5	THE FOUNDATION IS WELL CONNECTED TO THE HISTORICAL CENTRE AND TO THE TRAIN STATION OF TURIN	2005	2007	4	F/E	DHMR/UTR	It is located in Borgo San Paolo, an area now undergoing the urban and cultural revitalisation and refurbishment affecting much of Turin in recent years.		
	7	FABBRICA DELLA RUOTA	3,2	0		1981	1984	0,8	F	UTR/RR		RES/RET	
	8	FONDAZIONE PISTOLETTO	1,5	1		1998	2003	1,1	F/E	UTR/RR		RES/RET	
LOMBARDIA	1	FONDAZIONE PRADA	3,5	2	The area south of the railway station of Porta Romana, between Corso Lodi, Via Ripamonti and Viale Ortles, presents itself as an excellent point of access from any area of milan. (METRO STATION LODI - TRAM 24 FROM DUOMO) THIS AREA IS INTERESTED BY NUMEROUS REAL ESTATE DEVELOPMENTS	2009	2015	60	F/E	UTR/RR	The Foundation is an inspiring starting point for the recovery of an area now abandoned, dated symbol of the glorious town industriousness: factories, rail, water towers.	RES/RET/NB	3 NEW BUILDINGS 7 REFURBISHED BUILDINGS (WAREHOUSES, LABORATORIES AND SILOS) The existing constructions are characterized by a series of steel structures applied to the load-bearing walls during the phase of restoration. They provide structural reinforcement and was allowed to keep the original surfaces, including the vaulted ceiling of the bar.

LOMBARDIA	2	ARMANI SILOS	2,8	2	TORTONA DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES	2014	2015	50	F/E	UTR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS AND GREEN SPACES CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES/RET	NEW CONSTRUCTION: STEEL SLABS INTERIOR WALLS, AND PLANTS REFURBISHED STRUCTURES: FRAMEWORKS AND GREEN SPACES
	3	BIRRIFICIO DI LEGNANO	0,45	0	THE BREWERY IS LOCATED IN THE OLD TOWN OF LEGNANO CITY AND CAN BE REACHED EASILY	2013	2014		F/E	UTR/RR		RES	
	4	ECOMUSEO MINERARIO DELLA BAGNADA	19	0		2005	2008		F			RES/RET	
	5	MASSIMIANO 25	5,5	5	THE PLOT OCCUPIES A POSITION CONNECTIONG BEWEEN THE RESIDENTIAL AND THE INDUSTRIAL FABRIC. LAMBRATE DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES. LAMBRATE METRO STATION AND LAMBRATE TRAIN STATION.	2004	2007	4	F/E	DHMR/UTR/RR	YES, THE DISTRICT OF LAMBRATE IS INTERESTED FROM SEVERAL YEARS BY A PROCESS OF URBAN REGENERATION THAT IS SEEING AN INDUSTRIAL DISTRICT BECOMING A CULTURAL REFERENCE FOR MILAN, AND INSERTING ITSELF IN THE URBAN CENTER OF THE METROPOLI	RES/NB	
	6	LAP: LAMBRETTO ART PROJECT	5,9	3	LAMBRATE DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES. LAMBRATE METRO STATION AND LAMBRATE TRAIN STATION.	2007	2009	0,82	F	UTR	YES, THE DISTRICT OF LAMBRATE IS INTERESTED FROM SEVERAL YEARS BY A PROCESS OF URBAN REGENERATION THAT IS SEEING AN INDUSTRIAL DISTRICT BECOMING A CULTURAL REFERENCE FOR MILAN, AND INSERTING ITSELF IN THE URBAN CENTER OF THE METROPOLI	RES/NB	
	7	GALLERIA ZERO	5,5	5	LAMBRATE DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES. LAMBRATE METRO STATION AND LAMBRATE TRAIN STATION.	2007	2008	1	F/E	DHMR/UTR/RR	YES, THE DISTRICT OF LAMBRATE IS INTERESTED FROM SEVERAL YEARS BY A PROCESS OF URBAN REGENERATION THAT IS SEEING AN INDUSTRIAL DISTRICT BECOMING A CULTURAL REFERENCE FOR MILAN, AND INSERTING ITSELF IN THE URBAN CENTER OF THE METROPOLI	RES	
	8	RESEARCH AND DEVELOPMENT CENTER	350	5	THE CENTER IS LOCATED IN AN INDUSTRIAL AREA STILL ACTIVE, AND CAN BENEFITS FROM THE INFRASTUCTURES ALREADY PRESENT.	2010	2014	4	F/E	RR		RES/RET	
	9	EX TESMEC AREA	1	6		2013	2015	2,4	F/E	DHMR/UTR/RR	The site, which is located on an area of about 17,000 square meters, is undergoing a process of transformation linked to the redevelopment and conversion of spaces inside that once housed the Tesmec's production process.	RES/RET	
	10	L'ARSENALE - EDIFICIO PER LABORATORI	2,9	2	TORTONA DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES	2012	2013	1,625	F/E	DHMR/UTR/RR	YES, THE TORTONA DISTRICT HAS BEEN INTERESTED FROM MORE THEN A DECADE BY A PROCESS OF URBAN REGENERATION THAT IS SEEING AN INDUSTRIAL DISTRICT BECOMING A CULTURAL REFERENCE FOR MILAN, AND INSERTING ITSELF IN THE URBAN CENTER OF THE METROPOLI	RES/RET	
	11	BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	2,8	2	TORTONA DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES	2015	2016	3,6	F/E	DHMR/UTR	YES, THE TORTONA DISTRICT HAS BEEN INTERESTED FROM MORE THEN A DECADE BY A PROCESS OF URBAN REGENERATION THAT IS SEEING AN INDUSTRIAL DISTRICT BECOMING A CULTURAL REFERENCE FOR MILAN, AND INSERTING ITSELF IN THE URBAN CENTER OF THE METROPOLI	RES	
	12	GALLERIA MASSIMO DE CARLO	5,5	5	LAMBRATE DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES. LAMBRATE METRO STATION AND LAMBRATE TRAIN STATION.	2004	2005	1,2	F/E	DHMR/UTR	YES, THE DISTRICT OF LAMBRATE IS INTERESTED FROM SEVERAL YEARS BY A PROCESS OF URBAN REGENERATION THAT IS SEEING AN INDUSTRIAL DISTRICT BECOMING A CULTURAL REFERENCE FOR MILAN, AND INSERTING ITSELF IN THE URBAN CENTER OF THE METROPOLI	RES	

LOMBARDIA	13	VIA CASCIA 6 – EX GIO' STYLE	7,7	2		2003	2006	15	F/E	DHMR/UTR	This intervention had as its intention to have a profound effect on the evolution of the surrounding neighborhood degraded by industries fleeing not buffered from urban planning: a large number of new individuals, often from the most central areas of the city, mainly engaged in the tertiary sector and aged between 30 and 40 years, attracted by the ability to contain costs and work in a more human environment and attentive to their needs moved into the complex via Cascia.	RES	
	14	VIA VENTURA 3,5,15	5,5	5	LAMBRATE DISTRICT IS PART OF THE URBAN CENTRE AND THE AREA IS WELL SERVED IN THERMS OF SERVICES AND INFRASTRUCTURES. LAMBRATE METRO STATION AND LAMBRATE TRAIN STATION.	2006	2009	7	F/E	UTR	YES, THE DISTRICT OF LAMBRATE IS INTERESTED FROM SEVERAL YEARS BY A PROCESS OF URBAN REGENERATION THAT IS SEEING AN INDUSTRIAL DISTRICT BECOMING A CULTURAL REFERENCE FOR MILAN, AND INSERTING ITSELF IN THE URBAN CENTER OF THE METROPOLI	RES/RET	
	15	OFFICINE DEL VOLO	5,1	3	A few minutes drive from the city center and Linate Airport Car / East ring road exit Forlanini avenue From Piazza Duomo Tram 27 for 20 minutes	2003	2004	0,8	F/E	UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA, LEADING TO A STARTING POINT FOR THE DISTRICT AMELIORAMENT	RES	Everything that could possibly be recuperated has been renovated. The parquet flooring, the roof beams, the brick facades, the stonework, the plaster walls and the windows have been restored and cleaned using special techniques that have brought out all their original features while also safeguarding the marks left by time. The recovery has been characterized by three materials that were used throughout the original building: concrete, wood and iron. The roof covering has a layer of soundproofing panels, to guarantee excellent acoustics.
	16	PIRELLI HANGAR BICOCCA	7,4	3	LILLE METRO LINE THAT STOPS RIGHT INTO BICOCCA NEIGHBORHOOD	2001	2004	4	F/E	DHMR/UTR	Bicocca is a district designed on the basis of a true mix of uses that offers houses, shops, a university center and research, offices, a theater and the hangar that is the pride of the neighborhood with its 280 thousand visitors per year (of which 20% from abroad).	RES	Programmatic and technical refurbishment: offices, services, cabling and underfloor heating
	17	FRIGORIFERI MILANESI	3,3	6	A few minutes drive from the city center and Linate Airport Parking nearby Railway Link / Porta Vittoria 5 bus and 2 Tram Car / East ring road exit Forlanini avenue From Duomo Square Tram 27 for 20 minutes	2002	2008	19,5	F/E	RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA, LEADING TO A STARTING POINT FOR THE DISTRICT AMELIORAMENT	RES/RET	The project involves the transformation of the large space under the steel roof in a multipurpose space for events and meetings. The interventions focus on two volumes backing the palace foyer, bar and restaurant, exhibition spaces are designed as galleries that overlook the picturesque central space.
	18	LA FABBRICA DEL VAPORE	3	2	The place is easily accessible thanks to the presence of multiple public transport, by tram to the subway.	2012	2013	7,6	F/E	DHMR/UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS AND GREEN SPACES CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES/RET	The construction features of the volumes are uniform across construction techniques, bad conditions of instability. Executed in masonry, suffered significant damage due to atmospheric agents of the subsequent long period of neglect, poor static conditions have in fact imposed extensive consolidation work of masonry structures and replacement of all the horizontal elements. Even the shell have been replaced, recovering the metal trusses in building 7, integrating the damaged parts with new workmanship elements. The internal structures were performed with steel beams and pillars and slabs of predalle type, bound by perimeter walls, guarantee stability. The coversnewly built, faithfully replicate the types and sections of the lost existing roofs. The supports, built from scratch on concrete curbs hidden from view by paramanto wall, are also replica of the original, and are joined by metal chains. The changing needs and destinations of the buildings have required extensive wrap insulation process through the installation of insulation panels in false walls plastered and ventilated crawl space over the entire surface of the ground floor. Even the windows, while respecting the formal and material characteristics of the original elements stranded, have been equipped with adequate glazing to the achievement of project transmittance values. The external areas, partially planted were realized by searching the continuity with the paths from surrounding areas and on the context, in order to ensure the greatest accessibility to the site.
LIGURIA	1	NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	3,4	1		2014	2015	1	F	DHMR (LANDS POLLUTED BY HYDROCARBONS)	Cultural hub capable of bringing sustainable development for the entire area that seems to be abandoned.	RES	The conservative restoration project has affected mainly the outward appearance, with minimal changes necessary to make the building compatible with the new functions, in compliance with the fire and earthquake safety regulations, in accordance with the relevant Superintendents. The interior has been treated while preserving the most of the existing one, with ceilings and beams object of partial and local maintenance, simply pillars treated and left with colors and "defects" existing. The new volumes of the exhibition were made with materials and finishings in wood or steel, in order to accentuate their distinctiveness from the existent, but placing them in a uniform architectural solution for the entire building.

LIGURIA	2	IMMOBILE CONCORDE	3,5	3	THE BUILDING IS LOCATED IN AN INDUSTRIAL-RETAIL AREA THAT HOSTS SEVERAL BIG RETAIL STORES (IKEA - LEROY MERLIN - DECHATLON)	2009	2010		F/E 400 square meters of photovoltaic panels (two electric mini-power plants from 20 kW each) and 4 solar thermal panels for hot water.	UTR/RR	NO	RES/RET	INTERNAL AND EXTERNAL RECOVERY
EMILIA ROMAGNA	1	AUDITORIUM NICCOLO' PAGANINI	1,5	9	THE BUILDING IS LOCATED IN A STRATEGIC URBAN AREA FOR ITS LOCATION BETWEEN THE CITY CENTER AND AREAS OF EXPANSION	1999	2001	26	F/E	DHMR/UTR/RR	The structure becomes the reference point of a large area used to green, leading to the refreshment of the area that once was abandoned.	RES/RET	The recovery has required major interventions of restoration and structural reinforcement: around the load-bearing brick walls was built a box-like structure made of reinforced concrete with septa 15 centimeters thick; coverage, in compliance with the original configuration, was completely rebuilt by replacing the old iron truss affected by widespread phenomena of oxidation with new metal trusses in sight; the roof covering has been realized in copper pretreated green color. The peculiarity of the intervention, in addition to the integration of sophisticated technological and acoustic systems, lies in the choice of eliminating the head walls of the main body, replacing them with three large windows, so as to create a transparent telescope along the longitudinal axis, and then have always a fascinating perspective view from inside the green behind the stage.
	2	OPIFICIO GOLINELLI	3,5	14	15 minutes drive from the city center and 10 minutes from Bologna Airport Good connection with infrastructures due to its proximity to the Ospedale Maggiore	2014	2015	12	F/E	DHMR/UTR/RR	The refurbishment of the industrial site partecipate to the urban regeneration of the peripheral area continuing the regeneration process started shortly before by the inauguration of the MAST.	RES/RET	The project acts on the existing following a double register, limiting the structural recovery where necessary, functional and modernization of building components on one side and to the realization of ex novo of the other areas to achieve a modern building, flexible and efficient able to manage initiatives for an expected 150,000 people a year. The underlying theme of the project is the creation of flexible, contemporary spaces suitable for young users but also to recall the old industrial vocation of the place, with exposed materials that prefer dry systems and make extensive use of colored polycarbonate panels, MDF, oSB, metal and wood. From a structural standpoint, the steel dominates both the old structures that the new ones. With regard to the existing load bearing structures of buildings, in overall good condition, they have been adjusted without replacement of components and painted the dominant white, as well as the old shed roof, which remains the hallmark of the new function . One of the new internal volumes, in which is placed the Giardino delle Imprese, is characterized by an overhang of 15 m supported by a steel frame and sheet metal ceilings fretted with uncooperative jet. Particular attention was given to the energy aspects and the greater possible reduction of noise in environments where the echo can be significant. From this point of view, the walls are internally lined with sound-absorbing plaster and mineral wool and cotton wool cover lower surfaces of the cover. The building is equipped with radiant panels below the flooring and is served by a photovoltaic system can produce 50 kilowatts for the illumination. Great attention has been paid to air exchange, carried out in a uniform and consistent way over time for the entire building. The system works through heat exchangers that allow to limit the energy consumption of air exchange.
	3	SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	0	15	THE SHOWROOM IS LOCATED IN THE CENTRE OF IMOLA, A FEW MINUTES WALK FROM THE TRAIN STATION	2011	2012	3	F	UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES/RET	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS, WHILE THE INTERNAL PARTITIONS (IN THIS CASE ARE PANELS THAT DONT TOUCH THE EXISTING STRUCTURE) HAS BEEN INSTALLED BY NEW. A STEEL DIAPHRAGM CORTEN REDRAWS THE FRONT ENTRANCE AND PROTECTING IT FROM WEATHER AND GIVING GREATER RESISTANCE TO DECAY.
	4	SCUOLA MEDIA - EX FORNACE	0,5	7	The intervention area, is set in a privileged context, just outside the city center, acting as a hinge between the urban center, the river park of the Rio Melo and the new urbanization.	2012	2014	5,5	F/E	UTR/RR	The structure becomes the reference point of a large area used to green, leading to the refreshment of the area that once was abandoned. Goal of the Municipality of Riccione is increasing as well the cultural and tourist offer of the city, with spaces equipped and directly connected, through nature trails, to the port and the city center.	RES/RET/NB	The goal is to reduce the environmental impact, so the old buildings have been replaced by new high standards ones, without occupying new areas. The structures have simple and recognizable shapes, with the same materials and colours, and the historical and architectural features are now read according to a contemporary point of view. On one hand, the project wants to renovate and enhance the old brick walls, on the other hand, it wants to establish a difference between the existing buildings and the new ones, keeping a coherence in the entire intervention. As far as the theatre is concerned, the relationship between existing and new is faced keeping the same materials but changing the shapes, so hat a bond is created between the existing building and the contemporary one.
	5	VIA PASUBIO 3	1,5	9	THE BUILDING IS LOCATED IN A STRATEGIC URBAN AREA FOR ITS LOCATION BETWEEN THE CITY CENTER AND AREAS OF EXPANSION				F	UTR/RR	The presence of Lenz Theatre within the neighborhood S. Leonardo, represents the displacement of the place of artistic production from the center to the periphery, the move away from traditional culture concentrations, the identification of the axis output from the city (highway A1 and rail) as a possibility of communication with the extra-urban territory. The recovery of this space represent the ability to refurbish and reuse with new functions an urban area with an extraordinary historic and symbolic importance for the city.	RES	The project aims to minimize the demolition of the original structures, while includes the demolition of all the partitions and the additions made later, which alter the spatial perception of the local and divide environments incongruously and not compatible with a their new functionalization. Existing spaces, freed from partitions, are reorganized in terms of internal distribution and equipped with new facilities and service blocks (toilets, warehouse, kitchen).
	6	TECNOPOLO DI REGGIO EMILIA	1,8	17	THE BUILDING IS LOCATED IN A STRATEGIC URBAN AREA FOR ITS LOCATION BETWEEN THE CITY CENTER AND AREAS OF EXPANSION, ONE MINUTE WALK FROM THE TRAIN STATION	2011	2013	5,5	F/E	DHMR/UTR/RR	It is part of a wider program which aims to put the Innovation Park, Knowledge and Creativity within the area became property of the City.	RES/RET	A total renovation not only of the building but also of process residues, stains, written, imperfections. The structural consolidation of the foundations has allowed, then, to distribute the plant complex system leaving unchanged the original architecture; the replacement of the roof covering with skylights juxtaposed allowed to illuminate the space below in more levels.
	7	CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	0,2	10	THE SITE IS LOCATED IN THE CENTRE OF BUDRIO, A FEW MINUTES WALK FROM THE TRAIN STATION	2007	2009		F	DHMR/UTR/RR	The structure becomes the reference point of a neighborhood that once used to be abandoned.	RES	Programmatic and technical refurbishment: offices, services, cabling and underfloor heating The bearing-load structure has been left as it is, while the interiors and exteriors has been restorated

EMILIA ROMAGNA	**8**	**MINO OSTELLO DELLA GIOVENTU'**	0,6	1	THE HOSTEL IS LOCATED IN THE CENTRE OF MIGLIARINO, A FEW MINUTES WALK FROM THE TRAIN STATION	2011	2012	0,27	F/E	UTR/RR	NO BUT THE RECOVERY OF THE EXTERNAL WALLS CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS, WHILE THE INTERNAL PARTITIONS AND PLANTS HAS BEEN INSTALLED BY NEW.
TRENTINO ALTO ADIGE	**1**	**NEW SWS OFFICE BUILDING**	1	2	It is located a few minutes walk from the historic heart of the city and next to the train station of Mattarello.	2006	2007	1,25	F/E The mechanical system consists of a cooling system, air conditioning and air treatment called at all-air, accompanied by a cooling system or floor heating depending on the season. In winter the system works like a classic under-floor heating, while in summer, during the first and last hours of the day in the floor pipes circulates cold water to create a cold mass and to avoid condensation problems and purify the air , the same air is treated and cooled using a refrigerator and an AHU (air handling units). The lighting system works on bas with automatic light intensity regulation depending on the overall brightness.	UTR/RR	NO BUT THE RECOVERY OF THE EXTERNAL WALLS CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA, LEADING TO A DISTRICT AMELIORAMENT	RES/RET	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS, WHILE THE INTERNAL PARTITIONS AND PLANTS HAS BEEN INSTALLED BY NEW.
FRIULI VENEZIA GIULIA	**1**	**POLO MUSEALE DEL PORTO DI TRIESTE**	2,7	9	It is located a few minutes walk from the historic heart of the city and next to the train station of Trieste.	2012	2014	12,00	F/E	DHMR/UTR/RR	The refurbishment of the industrial site partecipate to the urban regeneration of the area, constituting a landmark of the master plan for the redevelopment of the Old Port of Trieste.	RES/RET	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS, WHILE THE INTERNAL PARTITIONS AND PLANTS HAS BEEN INSTALLED BY NEW.
VENETO	**1**	**THE CONTERIE**	0,4	4	It is located in the centre of Murano.	2010	2015	34 MLN	F/E	DHMR/UTR/RR	The project is part of a plan to revitalise the industrial area in the island of Murano. This decision was taken because the former industrial site was deemed to offer significant urban development opportunities on account of its extent, location and the variety of building which makes it up.	RES/RET/NB	STATIC CONSOLIDATION - CONSERVATIVE RESTORATION - COMMISSIONING OF THE BUILDING SAFETY - INSTALLATION OF NEW PLANTS
	2	**MTMA SPAZIO ZEPHIRO**	2,5	4	THE BUILDING IS LOCATED IN A STRATEGIC URBAN AREA (PERIPHERAL) FOR ITS LOCATION BETWEEN THE CITY CENTER AND AREAS OF EXPANSION	2015	2015		F/E	UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA, BECOMING A STARTING POINT FOR THE DISTRICT AMELIORAMENT	RES	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS, WHILE THE INTERNAL PARTITIONS AND PLANTS HAS BEEN INSTALLED BY NEW.
	3	**IL PANIFICIO DELLA PROVIANDA DI SANTA MARTA - POLO UNIVERSITA' DI VERONA**	1,2	15	It is located a few minutes walk from the historic heart of the city and next to the train station.	2009	2015	40,65	F/E Energy savings 30% higher than the standards required by legislation. 3,65 MLN invested in energy plants.	UTR/RR	The redevelopment project is part of a much larger master plan which covers 200,000 square meters of the former Barracks S.Marta and Passalacqua complex that includes the creation of redevelopment work and recovery related to residential building - fixed agreement, social, academic and free - and the construction of major works of primary and secondary urbanization and green pubblic. The masterplan entrenches the union between the university and the neighborhood that houses it, with the creation of a sort of open campus whose services and benefits will go to both students and citizens.	RES/RET	Restoration and consolidation of the wall structures, the floors and roofs. The work also involved the partitions glass windows, the metal ladder with vertical connection lifts, the complex apparatus plant: thermal power station and sub-stations, geothermal system and internal distributions.
	4	**ATELIER EERA**	5,4	5	NO	2011	2013		F/E Application of external insulation of thick calcium silicate blocks, the renewal of aluminum frames with thermal cutting, installation in coverage of about 700 m2 of photovoltaic panels.	DHMR/UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS AND GREEN SPACES CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS (shot concrete used to reinforce the perimeter walls, together with punctual concrete buttresses and together with the replacement with increase of the section of the tie rods of the cover once), WHILE THE INTERNAL PARTITIONS (are exhibition structures with uprights and metal crossbars, covered in stone, that allow disassembly and scene changes) AND PLANTS HAS BEEN INSTALLED BY NEW.
	5	**AUDITORIUM LO SQUERO**	1	1	THE AUDITORIUM IS LOCATED IN A HISTORICAL CONTEXT AND LANDSCAPE OF PARTICULAR VALUE	2014	2016		F/E	DHMR/UTR/RR	The insertion of contemporary architecture can improve the ahestetics and the environment of the historical context and landscape of particular value.	RES/RET	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS, WHILE THE INTERNAL STRUCTURE (For this new volume it is all made dry, steel, wood and glass and comes off on all sides by the existing building, as well as from the ground, allowing water to enter the shipyard, because the whole floor slab rests on beams wooden lattice that detach from the ground) AND PLANTS HAS BEEN INSTALLED BY NEW.

MARCHE	**1**	**BIBLIOTECA EFFEMME23**	0,45	2	It is located a few minutes walk from the historic heart of the city and 20 minutes by walk from the closest train station.	2004	2007	2.75 MLN	F/E	DHMR/UTR/RR	The new media library is today a place of great potential for the country of Maiolati Spontini from the point of view of economic regeneration, social and urban planning	RES/RET/NB	Before the intervention of restoration the entire resort was in a state of high degradation and abandonment, with structural parts collapsed. The project for the creation of the library resulted in the restoration of the oven and the adjacent building with works that would ensure the solidity, the elimination of dilapidated material and retrieval of still-usable material or use of similar to the material existing. The floors and the roof have been made with recycled bricks. The floors and the roof were made with steel bearing structure, with wooden floor for a better architectural integration into the local context. The infill walls with bricks of recovery were realized. All the partition between the multipurpose room of the oven is made of sound-absorbing panels laminate with wood finish beech, this should ensure effective sound absorption, particularly important for a library.
UMBRIA	**1**	**CENTRO ARTIGIANALE**	2,3	2	NO	1995	1998	2,5	F/E	DHMR/UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS AND GREEN SPACES CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES/NB	STATIC CONSOLIDATION - CONSERVATIVE RESTORATION - COMMISSIONING OF THE BUILDING SAFETY - INSTALLATION OF NEW PLANTS - 1 NEW BUILDING
	2	**THE BURRI COLLECTION – THE OLD TOBACCO DRYHOUSES**	1,9	5	It is located a few minutes walk from the historic heart of the city well known for tourism.	1989	1990		F	UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS AND GREEN SPACES CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES	(false walls of reduced height and paving)
TOSCANA	**1**	**STUDIO E GALLERIA COMMERCIALE EX LL.R**	0	3	The building is located in front of the railway station in the town of Torrita di Siena. Former industrial area has been incorporated in the second half of the twentieth century, in the expansion of the urban area.	2009	2009	0,1	F/E	DHMR/UTR/RR	Former industrial area has been incorporated in the second half of the twentieth century, in the expansion of the urban area. The building housed the railway workshops, now a commercial gallery / directional. The whole complex was in a state of abandonment after the last war of the last century, the industrial area also included the nearby furnace, now transformed into a commercial center. So we can say that the recovery of the industrial space has partecipated to the regeneration of the entire district.	RES	(MEZZANINE STRUCTURE)
	2	**MUSEO DELLA CONCIA**	0,4	6	It is located a few minutes walk from the historic heart of the city.	2002	2013	2,711	F/E	UTR/RR	The realization, in this area, of the leather museum, is considered by the municipal administration as an opportunity to initiate a process of regeneration the entire district that is characterized by many buildings of the same tipology and in a state of abandonment.	RES/NB	STATIC CONSOLIDATION - CONSERVATIVE RESTORATION - COMMISSIONING OF THE BUILDING SAFETY - INSTALLATION OF NEW PLANTS - 1 NEW BUILDING AND AN OPEN GALLERY BOTH IN REINFORCED CONCRETE AND FULL BRICKS
	3	**GALLERIA PROJECT GENTILI**	0,5	6	It is located in the historic heart of the city and next to the train station of Prato. Furthermore the gallery is served by a large parking.	2007	2007	0,5	F/E	UTR/RR	NO BUT THE RECOVERY OF THE EXTERIOR WALLS CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES	THE BEARING-LOAD STRUCTURE HAS BEEN LEFT AS IT IS, WHILE THE INTERNAL PARTITIONS (HALF WALLS), PAVING AND PLANTS HAS BEEN INSTALLED BY NEW.
	4	**MUSEO DEL TESSUTO**	0,65	6	It is located in the historic heart of the city and 10 minutes walk from the train station of Prato.	1999	2003	4	F/E	UTR/RR	NO BUT THE GENERAL REFURBISHMENT CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA	RES/RET	STATIC CONSOLIDATION OF THE BEARING LOAD STRUCTURE - CONSERVATIVE RESTORATION - COMMISSIONING OF THE BUILDING SAFETY - INSTALLATION OF NEW PLANTS
	5	**PRATO LOFTS**	0,35	6	It is located in the historic centre of the city and less than 10 minutes walk from the train station of Prato.	2006	2008	0,75	F/E	DHMR/UTR/RR	NO BUT THE GENERAL REFURBISHMENT CAN IMPROVE THE AHESTETICS AND THE ENVIRONMENT OF THE AREA. IT CAN BE CONSIDERED AS ONE OF THE MANY INTERVENTIONS THAT THE MUNICIPALITY OF PRATO HAS UNDERTAKEN IN ORDER TO REDEFINE THE RELATIONSHIPS BETWEEN INDUSTRIAL AND RESIDENTIAL ZONES	RES/RET	

LAZIO	**1**	**LANIFICIO - STUDIO KAMI**	5,5	3	THE BUILDING IS LOCATED IN A STRATEGIC URBAN AREA (PERIPHERAL) FOR ITS LOCATION BETWEEN THE CITY CENTER AND AREAS OF EXPANSION. THE SITE OVERLOOKS THE RIVER ANIENE.	2007	2012		F/E	UTR/RR	The redevelopment of the industrial site is involved the regeneration of the urban district of Pietralta and can be considered as one of the main projects that started the revitalization of the neighborhood. The municipal government in 2013 allocated 180 million euro for the demolition and reconstruction of 25 hectares of land and the construction of new facilities, residences, infrastructure and equipped public green right in the Pietralta district.	RES/RET	STATIC CONSOLIDATION - CONSERVATIVE RESTORATION - COMMISSIONING OF THE BUILDING SAFETY - INSTALLATION OF NEW PLANTS
	2	**MACRO TESTACCIO**	2,5	7	It is located in the heart of the historic neighborhood of Testaccio, few minutes walk from the Metro station and from the Train Station of Roma Trastevere.	2002	2007	2	F/E	UTR/RR	The spaces are part of a complex that is now at the center of a redevelopment plan aimed at giving it a strong and incisive vocation center for research and artistic and cultural production - for some years now characterized by the presence of the university of Roma Tre (Faculty of Architecture) and the Academy of Fine Arts - who can reflect the contemporary city, record the developments, put emphasis on the importance and stimulate its evolution.	RES/RET	STATIC CONSOLIDATION OF THE BEARING LOAD STRUCTURE - CONSERVATIVE RESTORATION - COMMISSIONING OF THE BUILDING SAFETY - INSTALLATION OF NEW PLANTS - INSTALLATION OF MEZZANINES
PUGLIA	**1**	**CANTIERI TEATRALI KOREJA**	2,6	0	THE BUILDING IS LOCATED IN A STRATEGIC URBAN AREA (PERIPHERAL) FOR ITS LOCATION BETWEEN THE CITY CENTER AND AREAS OF EXPANSION.				F/E	DHMR/UTR/RR	Cantieri Teatrali Koreja, together with Officine Cantelmo, are part of an urban renewal program and territorial promotion initiated by the public administration of Lecce. Anyway, they are not part of the same district.	RES/RET	
	2	**OFFICINE CANTELMO**	0,8	0	It is located in the heart of the historic centre of Lecce.				F/E	DHMR/UTR/RR	Officine Cantelmo, together with Cantieri Teatrali Koreja, are part of an urban renewal program and territorial promotion initiated by the public administration of Lecce. Anyway, they are not part of the same district.	RES/RET	
SICILIA	**1**	**CENTRO FIERISTICO LE CIMINIERE (CATANIA)**							F/E	DHMR/UTR/RR		RES/RET/NB	
	2	**MUSEO TECNOLOGICO DEL LATERIZIO**	0,9	0	THE MUSEUM IS LOCATED 1 KM FROM THE HISTORIC CENTRE OF CALTAGIRONE - FOR WHAT CONCERN THE INFRASTRUCTURES, IT IS LOCATED ON THE SS124 BUT IS 10 MINUTES BY CAR FROM THE TRAIN STATION.	2007	2008	1,35	F/E	DHMR/UTR/RR	The recovery and reuse of the industrial building, particularly of the Hoffmann kiln, together with the construction of new buildings is an important opportunity for urban renewal, with clear also cultural impact; in the Municipal Administration will it will mark, in fact, the start of a widespread urban redevelopment process of the entire structure, and therefore with positive consequences for the enhancement of the historical heritage.	RES/RET/NB	The project proposes the maintenance and recovery of the most important elements of the industrial body. In particular, the restoration of the Hoffmann kiln in respect of the constitutive and formal elements that characterize it. The innovations concern exclusively the introduction of certain necessary technological and plant engineering principals. Constuction of a connecting structure.
	3	**ZO CULTURE**	1,5	3	THE CULTURAL CENTER IS ON THE PORT OF CATANIA AND FEW MINUTES WALK FROM THE RAILWAY STATION AND THE HISTORICAL CENTER. 15 MINUTES BY CAR FROM THE AIRPORT.	2009	2010		F/E	DHMR/UTR/RR	THE REFURBISHMENT OF THE OLD RAFINERY IS ONE OF SEVERAL INTERVENTIONS THAT HAVE REGENERATED THE SITE.	RES/RET	STATIC CONSOLIDATION - CONSERVATIVE RESTORATION - COMMISSIONING OF THE BUILDING SAFETY - INSTALLATION OF NEW PLANTS

ATTACHED 2

“Territorial analysis”

	CASE STUDIES: TERRITORIAL AREAS
NORD	43
CENTRO	10
SUD	5
TOT	**58**

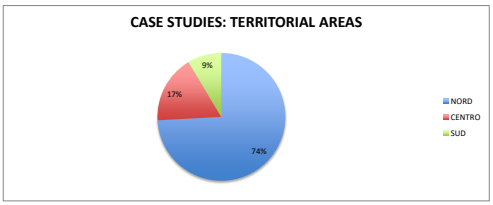
	CASE STUDIES: NORTH ITALY
PIEMONTE	8
LOMBARDIA	18
EMILIA ROMAGNA	8
LIGURIA	2
VENETO	5
FRIULI	1
TRENTINO	1
TOT	**43**

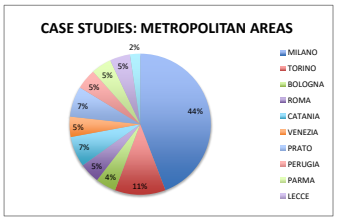
	CASE STUDIES: CENTER ITALY
TOSCANA	5
UMBRIA	2
LAZIO	2
MARCHE	1
TOT	**10**

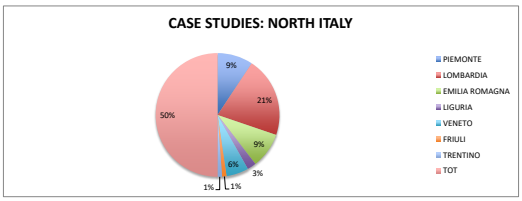
	CASE STUDIES: SOUTH ITALY
SICILIA	3
PUGLIA	2
TOT	**5**

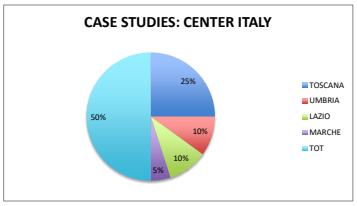
	CASE STUDIES: METROPOLITAN ARE.
MILANO	19
TORINO	5
BOLOGNA	2
ROMA	2
CATANIA	3
VENEZIA	2
PRATO	3
PERUGIA	2
PARMA	2
LECCE	2
ALTRO	1
TOT	**43**

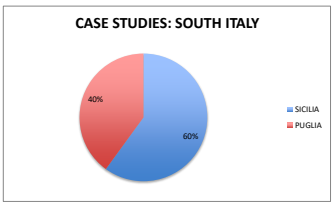
	TERRITORIAL AREAS AND PROMOTERS		
	PUBLIC	PRIVATE	PP
NORD	15	22	6
CENTRO	4	6	0
SUD	5	0	0
TOT	**24**	**28**	**6**
NORD	***35%***	***51%***	***12%***
CENTRO	***40%***	***60%***	
SUD	***100%***		

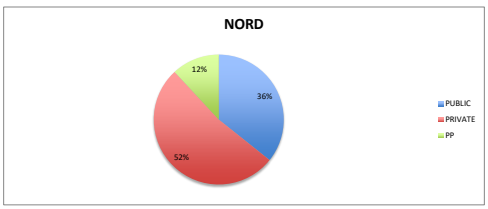


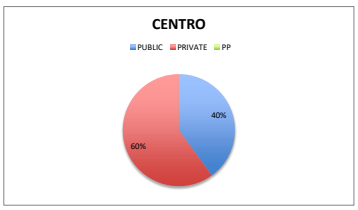


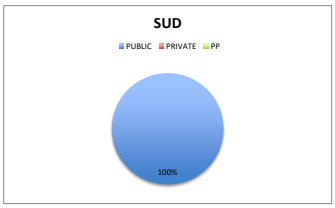












ATTACHED 3

"New uses and promoters analysis"

	INTENDED USE
	CASE STUDIES
SOCIO-CULTURAL	36
RESIDENCES	4
R&D	2
OFFICIES	3
HOSPITALITY	1
COMMERCIAL/PROD.	4
MIX	6
INSTITUTIONAL	2
TOT	**58**

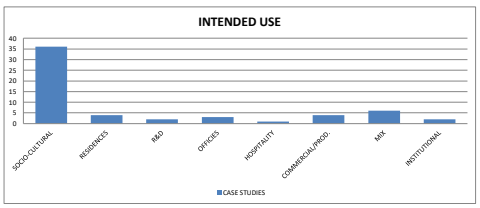
	CASE STUDIES
MUSEUM	9
ART GALLERY	10
PERFORMING ARTS CENTER	4
CENTER FOR CULTURE AND CREATIVITY	11
LIBRARY	2
TOT	**36**

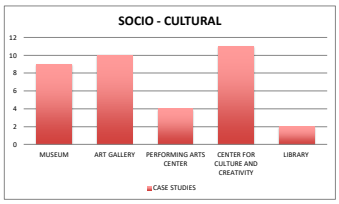
	PUBLIC	PRIVATE	P/P
MUSEUM	7	2	0
ART GALLERY	1	8	1
PERFORMANCE ART	2	0	2
CENTER FOR CULTURE AND CREATIVITY	5	4	2
LIBRARY	2	0	0
TOT	**17**	**14**	**5**

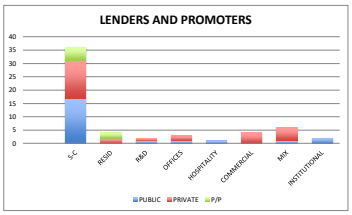
	PROMOTERS		
	PUBLIC	PRIVATE	P/P
S-C	17	14	5
RESID	0	2	2
R&D	1	1	0
OFFICES	1	2	0
HOSPITALITY	1	0	0
COMMERCIAL	0	4	0
MIX	1	5	0
INSTITUTIONAL	2	0	0
TOT	**23**	**28**	**7**

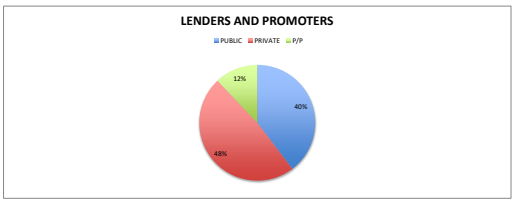
	PROMOTERS		
	PUBLIC	PRIVATE	P/P
S-C	78%	50%	71%
RESID		7%	29%
R&D	4%	4%	
OFFICES		7%	
HOSPITALITY	4%		
COMMERCIAL		14%	
MIX	4%	18%	
INSTITUTIONAL	9%		

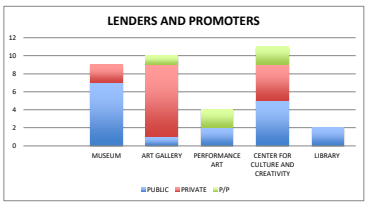
	PUBLIC	PRIVATE	P/P
MUSEUM	41%	14%	
ART GALLERY	6%	57%	20%
PERFORMANCE ART	12%		40%
CENTER FOR CULTURE AND CREATIVITY	29%	29%	40%
LIBRARY	12%		

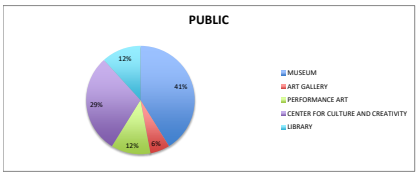


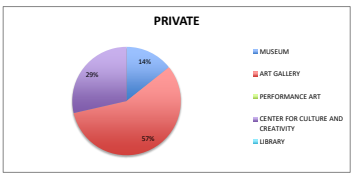


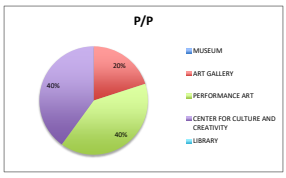


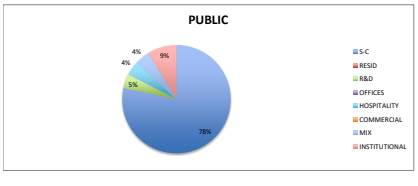


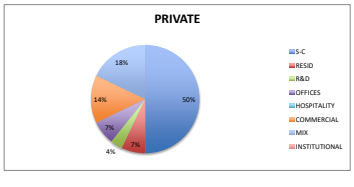


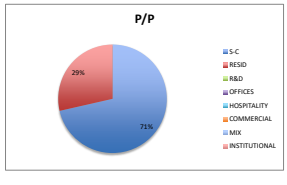












ATTACHED 4

"Processing data"

REGION	N°	CASE STUDY	SQ. M	ACCESSIBILITY				TIME AND COSTS				REFURBISHMENT
				LOCATION WITH RESPECT TO HISTORIC CENTRE (KM)	LOCATION WITH RESPECT TO INFRASTRUCTURES	METRO STATION (>1 km = 4) (<1 km = 8)	STRATEGIC POSITION (BUS/KM)	START OF WORKS	END OF WORKS	UNIT COST (€/SQ.M)	INVESTMENT MLN €	INTERVENTION TYPOLOGY
PIEMONTE	1	MUSEO DEI CAMPIONISSIMI	3000	0,75	2		2,67	2000	2003	283	0,85	RES/RET
	2	CASA ZERA	4300	2	8		4,00	2013	2017	1600	7	RES
	3	QUARTIERE AURORA	7000	1,5	10		6,67	2004	2008	1429	10	RES/NB
	4	LA CASA DEI PRODUTTORI	6000	2,1	4		1,90	2003	2008	1417	8,5	RES/NB
	5	MUSEO ETTORE FICO	2000	2,6	1		0,38	2013	2014	1200	2,4	RES
	6	FONDAZIONE MERZ	3200	3,9	5		1,28	2005	2007	1250	4	RES
	7	FABBRICA DELLA RUOTA	3500	3,2	1		0,31	1992	2995	229	0,8	RES/RET
	8	FONDAZIONE PISTOLETTO	8500	1,5	1		0,67	1998	2003	129	1,1	RES/RET
LOMBARDIA	1	FONDAZIONE PRADA	18.900	3,5	2	4	1,71	2009	2015	3175	60	RES/RET/NB
	2	ARMANI SILOS	4.500	2,8	2	4	2,14	2014	2015	11111	50	RES/RET
	3	BIRRIFICIO DI LEGNANO		0,45	1		2,22	2013	2014			RES
	4	ECOMUSEO MINERARIO DELLA BAGNADA		8	1		0,13	2005	2008			RES/RET
	5	MASSIMIANO 25	4225	5,5	5	4	1,64	2004	2007	947	4	RES/NB
	6	LAP: LAMBRETTO ART PROJECT	1550	5,9	3	4	1,19	2007	2009	529	0,82	RES/NB
	7	GALLERIA ZERO	600	5,5	5	4	1,64	2007	2008	1667	1	RES
	8	RESEARCH AND DEVELOPMENT CENTER	4220	1,9	5		2,63	2010	2014	948	4	RES/RET
	9	EX TESMEC AREA	3800	1	6		4,14	2013	2015	632	2,4	RES/RET
	10	L'ARSENALE - EDIFICIO PER LABORATORI	1000	2,9	2	4	2,07	2012	2013	1625	1,625	RES/RET
	11	BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	8000	2,8	2	4	2,14	2015	2016	450	3,6	RES
	12	GALLERIA MASSIMO DE CARLO	1100	5,5	5	4	1,64	2004	2005	1091	1,2	RES
	13	VIA CASCIA 6 – EX GIO' STYLE	20.000	7,7	2	4	0,78	2003	2006	750	15	RES
	14	VIA VENTURA 3,5,15	16.600	5,5	5	4	1,64	2006	2009	422	7	RES/RET
	15	OFFICINE DEL VOLO	1500	5,1	3		0,59	2003	2004	533	0,8	RES
	16	PIRELLI HANGAR BICOCCA	15.000	7,4	3	4	0,95	2001	2004	267	4	RES
	17	FRIGORIFERI MILANESI	27.500	3,3	6		1,82	2002	2008	709	19,5	RES/RET
	18	LA FABBRICA DEL VAPORE	14.000	3	2	8	3,33	2012	2013	543	7,6	RES/RET

LIGURIA	1	NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	18.000	3,4	1		0,29	2014	2015	56	1	RES
	2	IMMOBILE CONCORDE	5.300	3,5	3		0,86	2009	2010	377	2	RES/RET
EMILIA ROMAGNA	1	AUDITORIUM NICCOLO' PAGANINI	18000	1,5	9		4,14	1999	2001	1111	20	RES/RET
	2	OPIFICIO GOLINELLI	4500	3,5	10		2,86	2014	2015	2667	12	RES/RET
	3	SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	3000	0,4	5		4,14	2011	2012	1000	3	RES/RET
	4	SCUOLA MEDIA - EX FORNACE	3.400	0,5	6		4,14	2012	2014	1618	5,5	RES/RET/NB
	5	VIA PASUBIO 3		1,5	9		4,14					RES
	6	TECNOPOLO DI REGGIO EMILIA	5400	1,8	10		4,14	2011	2013	1019	5,5	RES/RET
	7	CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	2500	0,4	5		4,14	2007	2009	400	1	RES
	8	MINO OSTELLO DELLA GIOVENTU'	580	0,6	1		1,67	2011	2012	466	0,27	RES
TRENTINO ALTO ADIGE	1	NEW SWS OFFICE BUILDING	1000	1	2		2,00	2006	2007	1250	1,25	RES/RET
FRIULI VENEZIA GIULIA	1	POLO MUSEALE DEL PORTO DI TRIESTE	3270	2,7	9		3,33	2012	2014	3670	12,00	RES/RET
VENETO	1	THE CONTERIE	15.500	0,4	4		10,00	2010	2015	2194	34	RES/RET/NB
	2	MTMA SPAZIO ZEPHIRO	550	2,5	4		1,60	2015	2015	545	0,3	RES
	3	IL PANIFICIO DELLA PROVIANDA DI SANTA MARTA	25.500	1,2	10		8,33	2009	2015	1594	40,65	RES/RET
	4	ATELIER EERA	600	5,4	5		0,93	2011	2013	667	0,4	RES
	5	AUDITORIUM LO SQUERO	508	1	1		1,00	2014	2016	2953	1,5	RES/RET
MARCHE	1	BIBLIOTECA EFFEMME23	700	0,45	2		4,44	2004	2007	3929	2,75	RES/RET/NB
UMBRIA	1	CENTRO ARTIGIANALE	6.000	2,3	2		0,87	1995	1998	417	2,5	RES/NB
	2	THE BURRI COLLECTION	7500	1,9	5		2,63	1989	1990	400	3	RES

TOSCANA	1	STUDIO E GALLERIA COMMERCIALE EX I.L.R		0,4	3		4,14	2009	2009		0,1	RES
	2	MUSEO DELLA CONCIA		0,4	5		4,14	2005	2013		2,71	RES/NB
	3	GALLERIA PROJECT GENTILI	500	0,5	6		4,14	2007	2007	1000	0,5	RES
	4	MUSEO DEL TESSUTO	2.500	0,65	6		4,14	1999	2003	1600	4	RES/RET
	5	PRATO LOFTS	900	0,4	5		4,14	2006	2008	833	0,75	RES/RET
LAZIO	1	LANIFICIO - STUDIO KAMI	3500	5,5	3		0,55	2007	2012	857	3	RES/RET
	2	MACRO TESTACCIO	2000	2,5	7	4	4,14	2002	2007	1000	2	RES/RET
PUGLIA	1	CANTIERI TEATRALI KOREJA	3000	2,6	1		0,38	2012	2013	833	2,5	RES/RET
	2	OFFICINE CANTELMO		0,8	1		1,25	2012	2012			RES/RET
SICILIA	1	CENTRO FIERISTICO LE CIMINIERE	16000	1	3		3,00	2009	2011	1875	30	RES/RET/NB
	2	MUSEO TECNOLOGICO DEL LATERIZIO	1.350	0,9	1		1,11	2007	2008	1000	1,35	RES/RET/NB
	3	ZO CULTURE	1600	0,5	3		4,14	2009	2010	1250	2	RES/RET
		MEDIANA	***3500***	***2,05***	***3,5***		***2,11***	***2007***	***2010***	***1000***	***2,7305***	
		MODA	*3000*		***1,7***		*10,00*			***€/SQ.M***	***MLN €***	
		VALORE MAX	*27500*				*100*					
		VALORE MIN	*500*									
		TOTAL AREA	*333153*									

ATTACHED 5

"Quality of Location data"

REGION	N°	CASE STUDY	ACCESSIBILITY (PUBLIC TRANSPORT)	ECOLOGICAL QUALITY OF THE BUILDING SITE	BICYCLE PARKING	QUALITY OF LOCATION AND EQUIPMENT
PIEMONTE	1	MUSEO DEI CAMPIONISSIMI	64	60	100	66
	2	CASA ZERA	97	90	60	93
	3	QUARTIERE AURORA	100	80	80	94
	4	LA CASA DEI PRODUTTORI	46	70	60	52
	5	MUSEO ETTORE FICO	9	90	70	31
	6	FONDAZIONE MERZ	31	60	70	40
	7	FABBRICA DELLA RUOTA	8	100	60	32
	8	FONDAZIONE PISTOLETTO	16	90	60	36
LOMBARDIA	1	FONDAZIONE PRADA	41	70	90	51
	2	ARMANI SILOS	52	70	90	58
	3	BIRRIFICIO DI LEGNANO	54	60	60	56
	4	ECOMUSEO DELLA BAGNADA	3	100	50	28
	5	MASSIMIANO 25	40	60	60	46
	6	LAP: LAMBRETTO ART PROJECT	29	80	70	43

ACC	ECO	PARK
0,71	0,23	0,06

LOMBARDIA	7	GALLERIA ZERO	40	60	70	46
	8	RESEARCH AND DEVELOPMENT CENTER	64	70	90	67
	9	EX TESMEC AREA	100	90	80	97
	10	L'ARSENALE - EDIFICIO PER LABORATORI	50	60	80	54
	11	BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	52	70	90	58
	12	GALLERIA MASSIMO DE CARLO	40	60	70	46
	13	VIA CASCIA 6 – EX GIO' STYLE	19	70	70	34
	14	VIA VENTURA 3,5,15	40	70	70	49
	15	OFFICINE DEL VOLO	14	50	60	25
	16	PIRELLI HANGAR BICOCCA	23	80	80	40
	17	FRIGORIFERI MILANESI	44	80	80	54
	18	LA FABBRICA DEL VAPORE	81	60	80	76
LIGURIA	1	NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	7	60	60	22
	2	IMMOBILE CONCORDE	21	50	50	29
EMILIA ROMAGNA	1	AUDITORIUM NICCOLO' PAGANINI	100	100	80	99
	2	OPIFICIO GOLINELLI	69	80	80	72
	3	SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	100	60	70	89
	4	SCUOLA MEDIA - EX FORNACE	100	100	100	100
	5	VIA PASUBIO 3	100	80	70	94
	6	TECNOPOLO DI REGGIO EMILIA	100	80	90	95
	7	CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	100	80	80	94
EMILIA	8	MINO OSTELLO DELLA GIOVENTU'	40	90	100	55

TRENTINO ALTO ADIGE	1	NEW SWS OFFICE BUILDING	48	90	100	61
FRIULI VENEZIA GIULIA	1	POLO MUSEALE DEL PORTO DI TRIESTE	81	70	70	78
VENETO	1	THE CONTERIE	100	70	50	90
	2	MTMA SPAZIO ZEPHIRO	39	80	100	52
	3	POLO UNIVERSITA' DI VERONA	100	70	90	93
	4	ATELIER EERA	22	70	70	36
	5	AUDITORIUM LO SQUERO	24	90	50	41
MARCHE	1	BIBLIOTECA EFFEMME23	100	70	60	91
UMBRIA	1	CENTRO ARTIGIANALE	21	100	100	44
	2	THE BURRI COLLECTION	64	80	80	69
TOSCANA	1	STUDIO E GALLERIA COMMERCIALE EX I.L.R	100	80	60	93
	2	MUSEO DELLA CONCIA	100	80	80	94
	3	GALLERIA PROJECT GENTILI	100	90	80	97
	4	MUSEO DEL TESSUTO	100	80	80	94
	5	PRATO LOFTS	100	80	70	94
LAZIO	1	LANIFICIO - STUDIO KAMI	13	70	70	30
	2	MACRO TESTACCIO	100	80	80	94
PUGLIA	1	CANTIERI TEATRALI KOREJA	9	60	60	24
	2	OFFICINE CANTELMO	30	70	70	42
SICILIA	1	CENTRO FIERISTICO LE CIMINIERE	72	80	80	74
	2	MUSEO TECNOLOGICO DEL LATERIZIO	27	100	100	48
	3	ZO CULTURE	100	80	80	94

ATTACHED 6

"Flex Analysis – Adaptability assessment"

FLEX LIGHT 2.0

SITE NAME: MUSEO DEI CAMPIONISSIMI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2		2			4
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2		2			4
		11(57)	Surplus capacity of facilities	3		2			6
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3	1				3
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1		2			2
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		92
							Adaptivity Class:		2

CLASS TABLE	SCORE
Class 1: Not adaptive	17-54
Class 2: Hardly adaptive	55-92
Class 3: Limited adaptive	93-130
Class 4: Good adaptive	131-168
Class 5: Excellent adaptive	169-204

FLEX LIGHT 2.0

SITE NAME: CASA ZERA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2		2			4
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		132
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: QUARTIERE AURORA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3		2			6
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2		2			4
		11(57)	Surplus capacity of facilities	3		2			6
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		97
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: LA CASA DEI PRODUTTORI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3		2			6
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		107
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME:MUSEO ETTORE FICO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		130
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: FONDAZIONE MERZ					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		133
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: FABBRICA DELLA RUOTA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3	1				3
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2		2			4
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1	1				1
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2		2			4
		11(57)	Surplus capacity of facilities	3		2			6
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3	1				3
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1		2			2
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3	1				3
		17(79)	Disconnecting / detailed connection interior walls or vertical	3	1				3
								Total Adaptivity score:	74
								Adaptivity Class:	2

FLEX LIGHT 2.0

SITE NAME: FONDAZIONE PISTOLETTO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
								Total Adaptivity score:	110
								Adaptivity Class:	3

FLEX LIGHT 2.0

SITE NAME: FONDAZIONE PRADA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		149
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: ARMANI SILOS					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		121
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: BIRRIFICIO DI LEGNANO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3		2			6
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		90
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: ECOMUSEO MINERARIO DELLA BAGNADA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1	1				1
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2	1				2
		03(11)	Surplus free of floor height	3	1				3
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2	1				2
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3	1				3
		06(29)	Extendible building / unit horizontal	3	1				3
		07(30)	Extendible building / unit vertical	1	1				1
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2		2			4
		11(57)	Surplus capacity of facilities	3	1				3
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1	1				1
	5.3 Technical	15(77)	Removable, relocatable units in building	3	1				3
		16(78)	Removable, relocatable interior walls in building	3	1				3
		17(79)	Disconnecting / detailed connection interior walls or vertical	3	1				3
							Total Adaptivity score:		52
							Adaptivity Class:		2

FLEX LIGHT 2.0

SITE NAME: MASSIMIANO 25					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		118
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: LAMBRETTO ART PROJECT					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		138
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: GALLERIA ZERO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		138
							Adaptivity Class:		2

FLEX LIGHT 2.0

SITE NAME: RESEARCH AND DEVELOPMENT CENTER					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		153
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: EX TESMEC AREA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1		2			2
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		121
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: L'ARSENALE - EDIFICIO PER LABORATORI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		114
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: BASE MILANO - CENTER FOR CULTURE AND CREATIVITY					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		125
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: GALLERIA MASSIMO DE CARLO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		131
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: VIA CASCIA 6 - EX GiO' STYLE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		109
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: VIA VENTURA 3,5,15					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		141
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: OFFICINE DEL VOLO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		128
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: PIRELLI HANGAR BICOCCA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		143
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: FRIGORIFERI MILANESI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		149
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: LA FABBRICA DEL VAPORE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		140
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: NOVA - OPIFICIO VACCARI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2		2			4
		11(57)	Surplus capacity of facilities	3		2			6
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		100
							Adaptivity Class:		3

CLASS TABLE	SCORE
Class 1: Not adaptive	17-54
Class 2: Hardly adaptive	55-92
Class 3: Limited adaptive	93-130
Class 4: Good adaptive	131-168
Class 5: Excellent adaptive	169-204

FLEX LIGHT 2.0

SITE NAME: IMMOBILE CONCORDE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		115
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: AUDITORIUM NICCOLO' PAGANINI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		143
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: OPIFICIO GOLINELLI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		150
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		145
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: SCUOLA MEDIA - EX FORNACE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		129
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: VIA PASUBIO 3 - PARMA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		130
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: TECNOPOLO DI REGGIO EMILIA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		157
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: CENTRO MULTICULTURALE LE TORRI DELL'ACQUA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3		2			6
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		95
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: MINO OSTELLO DELLA GIOVENTU'					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3					0
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		141
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: NEW SWS OFFICE BUILDING					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3		2			6
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		102
							Adaptivity Class:		3

CLASS TABLE	SCORE
Class 1: Not adaptive	17-54
Class 2: Hardly adaptive	55-92
Class 3: Limited adaptive	93-130
Class 4: Good adaptive	131-168
Class 5: Excellent adaptive	169-204

FLEX LIGHT 2.0									
SITE NAME: POLO MUSEALE DEL PORTO DI TRIESTE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		142
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: THE CONTERIE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1	1				1
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2	1				2
		11(57)	Surplus capacity of facilities	3	1				3
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1		2			2
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		95
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: MTMA SPAZIO ZEPHIRO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		134
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: IL PANIFICIO DELLA PROVIANDA DI SANTA MARTA - POLO UNIVERSITA' DI VERONA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		123
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: ATELIER EERA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3		2			6
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		134
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: AUDITORIUM LO SQUERO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3				4	12
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3				4	12
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3				4	12
							Total Adaptivity score:		143
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: BIBLIOTECA EFFEMME23					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3		2			6
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		111
							Adaptivity Class:		3

CLASS TABLE	SCORE
Class 1: Not adaptive	17-54
Class 2: Hardly adaptive	55-92
Class 3: Limited adaptive	93-130
Class 4: Good adaptive	131-168
Class 5: Excellent adaptive	169-204

FLEX LIGHT 2.0

SITE NAME: CENTRO ARTIGIANALE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		123
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: THE BURRI COLLECTION					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2				4	8
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2				4	8
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		142
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: STUDIO E GALLERIA COMMERCIALE EX L.R					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		123
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: GALLERIA PROJECT GENTILI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		112
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: MUSEO DEL TESSUTO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3	1				3
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2		2			4
		11(57)	Surplus capacity of facilities	3		2			6
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		95
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: MUSEO DELLA CONCIA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3	1				3
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3				4	12
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3	1				3
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2	1				2
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2		2			4
		11(57)	Surplus capacity of facilities	3		2			6
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1		2			2
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3	1				3
		17(79)	Disconnecting / detailed connection interior walls or vertical	3	1				3
							Total Adaptivity score:		77
							Adaptivity Class:		2

FLEX LIGHT 2.0

SITE NAME: PRATO LOFTS					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3		2			6
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3				4	12
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		116
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: LANIFICIO - STUDIO KAMI					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2		2			4
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3		2			6
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2				4	8
		11(57)	Surplus capacity of facilities	3				4	12
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		107
							Adaptivity Class:		3

CLASS TABLE	SCORE
Class 1: Not adaptive	17-54
Class 2: Hardly adaptive	55-92
Class 3: Limited adaptive	93-130
Class 4: Good adaptive	131-168
Class 5: Excellent adaptive	169-204

FLEX LIGHT 2.0

SITE NAME: MACRO TESTACCIO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1			3		3
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2		2			4
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3	4	21
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		139
							Adaptivity Class:		4

FLEX LIGHT 2.0									
SITE NAME: CANTIERI TEATRALI KOREJA					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3		2			6
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2		2			4
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		102
							Adaptivity Class:		3

FLEX LIGHT 2.0									
SITE NAME: OFFICINE CANTELMO					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3			3		9
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3			3		9
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3		2			6
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3				4	12
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		119
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: CENTRO FIERISTICO LE CIMINIERE (CATANIA)					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1				4	4
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2				4	8
		03(11)	Surplus free of floor height	3				4	12
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2				4	8
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3				4	12
		07(30)	Extendible building / unit vertical	1				4	4
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1				4	4
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		133
							Adaptivity Class:		4

FLEX LIGHT 2.0

SITE NAME: MUSEO TECNOLOGICO DEL LATERIZIO (CHIUSO)					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1		2			2
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2			3		6
		03(11)	Surplus free of floor height	3		2			6
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2		2			4
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3			3		9
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2			3		6
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3		2			6
		16(78)	Removable, relocatable interior walls in building	3		2			6
		17(79)	Disconnecting / detailed connection interior walls or vertical	3		2			6
							Total Adaptivity score:		101
							Adaptivity Class:		3

FLEX LIGHT 2.0

SITE NAME: ZO CULTURE					ASSESSMENT VALUE				
LAYER	SUBLAYER	Nr.	FLEXIBILITY PERFORMANCE INDICATOR	WEIGHTING	BAD	NORMAL	BETTER	BEST	SCORE
1.SITE/LOCATION		01(2)	Surplus of site space	1			3		3
2.STRUCTURE	2.1 Measurements	02(5)	Surplus of building space / floor space	2		2			4
		03(11)	Surplus free of floor height	3		2			6
	2.2 Access	04(17)	Access to building: location of stairs, elevators, core	2			3		6
	2.3 Construction	05(21)	Surplus of load bearing capacity of floors	3		2			6
		06(29)	Extendible building / unit horizontal	3		2			6
		07(30)	Extendible building / unit vertical	1		2			2
3.SKIN	3.1 Facade	08(42)	Dismountable facade	3			3		9
4. FACILITIES	4.1 Measurements & control	09(53)	Customisability and controllability of facilities	2			3		6
	4.2 Dimensions	10(56)	Surplus facilities shafts and ducts	2			3		6
		11(57)	Surplus capacity of facilities	3			3		9
		12(65)	Disconnection of facilities components	2		2			4
5. SPACE PLAN/FINISHING	5.1 Functional	13(70)	Distinction between support - infil (fit - out)	3			3		9
	5.2 Access	14(73)	Access to buiding: horizontal routing, corridors, gallery	1			3		3
	5.3 Technical	15(77)	Removable, relocatable units in building	3			3		9
		16(78)	Removable, relocatable interior walls in building	3			3		9
		17(79)	Disconnecting / detailed connection interior walls or vertical	3			3		9
							Total Adaptivity score:		106
							Adaptivity Class:		3

ATTACHED 7

"Processing data – Radar Charts data"

REGION	N°	CASE STUDY	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
PIEMONTE	1	MUSEO DEI CAMPIONISSIMI	66	4	3	3000	40	283	92
	2	CASA ZERA	93	12	4	4300	60	1600	132
	3	QUARTIERE AURORA	94	12	4	7000	60	1429	97
	4	LA CASA DEI PRODUTTORI	52	8	5	6000	60	1417	107
	5	MUSEO ETTORE FICO	31	4	1	2000	60	1200	130
	6	FONDAZIONE MERZ	40	4	2	3200	80	1250	133
	7	FABBRICA DELLA RUOTA	32	8	4	3500	60	229	74
	8	FONDAZIONE PISTOLETTO	36	8	5	8500	60	129	110
LOMBARDIA	1	FONDAZIONE PRADA	51	8	6	18.900	40	3175	149
	2	ARMANI SILOS	58	8	1	4.500	60	11111	121
	3	BIRRIFICIO DI LEGNANO	56	8	1		80		90
	4	ECOMUSEO MINERARIO DELLA BAGNADA	28	8	3		60		52
	5	MASSIMIANO 25	46	4	3	4225	40	947	118
	6	LAP: LAMBRETTO ART PROJECT	43	4	2	1550	60	529	138
	7	GALLERIA ZERO	46	4	1	600	60	1667	138
	8	RESEARCH AND DEVELOPMENT CENTER	67	8	4	4220	60	947	153
	9	EX TESMEC AREA	97	8	2	3800	40	632	121
	10	L'ARSENALE - EDIFICIO PER LABORATORI	54	4	1	1000	40	1625	114
	11	BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	58	4	1	8000	60	450	125
	12	GALLERIA MASSIMO DE CARLO	46	4	1	1100	60	1091	131
	13	VIA CASCIA 6 – EX GIO' STYLE	34	12	3	20000	60	750	109
	14	VIA VENTURA 3,5,15	49	8	3	16600	60	421	141
	15	OFFICINE DEL VOLO	25	4	1	1500	80	533.33	128

LAYOUT OF SPACES AND FUNCTIONS	VERY STRUCTURED	100
	STRUCTURED	67
	LOW STRUCTURED	33

PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD (100 POINTS)	DISPOSAL OF HARMFUL MATERIAL	-20
	RESTORATION	-20
	STRUCTURAL RETROFIT	-20
	NEW CONSTRUCTION	-20

LOMBARDIA	16	PIRELLI HANGAR BICOCCA	40	4	3	15000	60	267	143
	17	FRIGORIFERI MILANESI	54	4	6	27500	60	709	149
	18	LA FABBRICA DEL VAPORE	76	4	1	14.000	40	543	140
LIGURIA	1	NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	22	4	1	18.000	60	77	100
	2	IMMOBILE CONCORDE	29	4	1	5300	60	377,5	109
EMILIA ROMAGNA	1	AUDITORIUM NICCOLO' PAGANINI	99	4	2	18000	40	1111	143
	2	OPIFICIO GOLINELLI	72	12	1	4500	40	2667	150
	3	SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	89	8	1	3000	60	1000	151
	4	SCUOLA MEDIA - EX FORNACE (RICCIONE – RI)	100	12	2	3.400	20	1618	129
	5	VIA PASUBIO 3	94	4	0,6	3.500	80	1020	130
	6	TECNOPOLO DI REGGIO EMILIA	95	12	2	5400	40	1019	157
	7	CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	94	8	2	2500	60	400	95
	8	MINO OSTELLO DELLA GIOVENTU'	55	12	1	580	80	466	141
TRENTINO ALTO ADIGE	1	NEW SWS OFFICE BUILDING	60,78	12	1	1000	60	1250	102
FRIULI VENEZIA GIULIA	1	POLO MUSEALE DEL PORTO DI TRIESTE	77,81	8	2	3270	40	3669	142
VENETO	1	THE CONTERIE	90,1	12	5	15500	20	2194	95
	2	MTMA SPAZIO ZEPHIRO	52,09	8	0,6	550	80	545	134
	3	POLO UNIVERSITA' DI VERONA	92,5	8	6	25500	60	1594	123
	4	ATELIER EERA	35,92	4	2	600	60	667	134
	5	AUDITORIUM LO SQUERO	40,74	4	1	508	40	2953	143
MARCHE	1	BIBLIOTECA EFFEMME23	90,7	4	3	700	20	3929	111
UMBRIA	1	CENTRO ARTIGIANALE	43,91	8	3	6.000	40	417	123
	2	THE BURRI COLLECTION	68,64	4	1	7500	80	400	142

TOSCANA	1	STUDIO E GALLERIA COMMERCIALE EX I.L.R	93	8	0,6		60		123
	2	MUSEO DELLA CONCIA	94,2	4	8		60		112
	3	GALLERIA PROJECT GENTILI (CLOSED)	96,5	4	0,6	500	80	1000	95
	4	MUSEO DEL TESSUTO	94,2	4	4	2.500	60	1600	77
	5	PRATO LOFTS	93,6	8	2	900	40	833	116
LAZIO	1	LANIFICIO - STUDIO KAMI	29,53	4	5	3.500	60	857	107
	2	MACRO TESTACCIO	94,2	4	5	2000	60	1000	139
PUGLIA	1	CANTIERI TEATRALI KOREJA	23,79	8	0,8	3.000	40	833	102
	2	OFFICINE CANTELMO	41,6	4	0,6		40		119
SICILIA	1	CENTRO FIERISTICO LE CIMINIERE (CATANIA)	74,32	4	2	16.000	20	1875	133
	2	MUSEO TECNOLOGICO DEL LATERIZIO (CHIUSO)	48,17	4	1	1.350	20	1000	101
	3	ZO CULTURE	94,2	8	1	1.600	40	1250	106

ATTACHED 8

“Radar charts and Final scores”

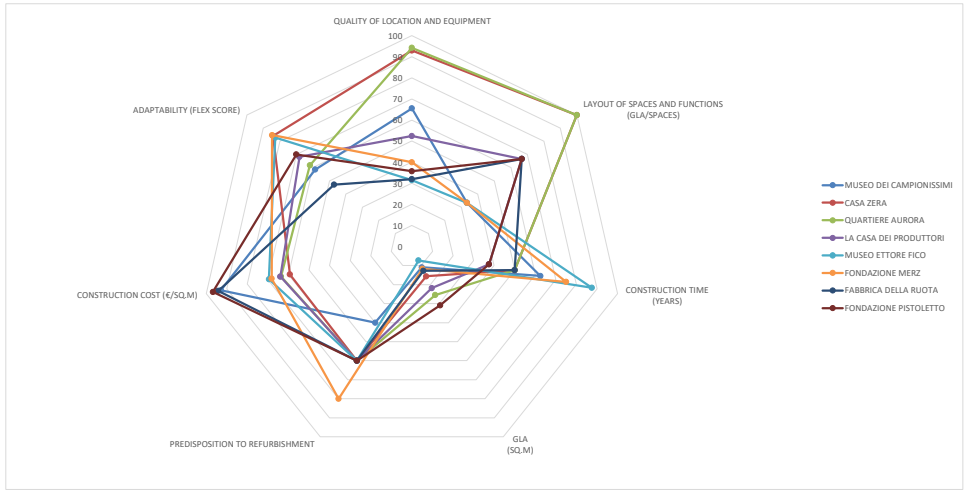
	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
MUSEO DEI CAMPIONISSIMI	72	4	3	3000	40	283	92
CASA ZERA	85	12	4	4300	60	1600	132
QUARTIERE AURORA	88	12	4	7000	60	1429	97
LA CASA DEI PRODUTTORI	59	8	5	6000	60	1417	107
MUSEO ETTORE FICO	55	4	1	2000	60	1200	130
FONDAZIONE MERZ	52	4	2	3200	80	1250	133
FABBRICA DELLA RUOTA	55	8	4	3500	60	229	74
FONDAZIONE PISTOLETTO	55	8	5	8500	60	129	110

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
MUSEO DEI CAMPIONISSIMI	66	33	63	11	40	93	59	62
CASA ZERA	93	100	50	16	60	59	84	76
QUARTIERE AURORA	94	100	50	25	60	64	62	68
LA CASA DEI PRODUTTORI	52	67	38	22	60	64	68	60
MUSEO ETTORE FICO	31	33	88	7	60	69	83	63
FONDAZIONE MERZ	40	33	75	12	80	68	85	67
FABBRICA DELLA RUOTA	32	67	50	13	60	94	47	53
FONDAZIONE PISTOLETTO	36	67	38	31	60	97	70	64

MEDIAN VALUE	63

GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100

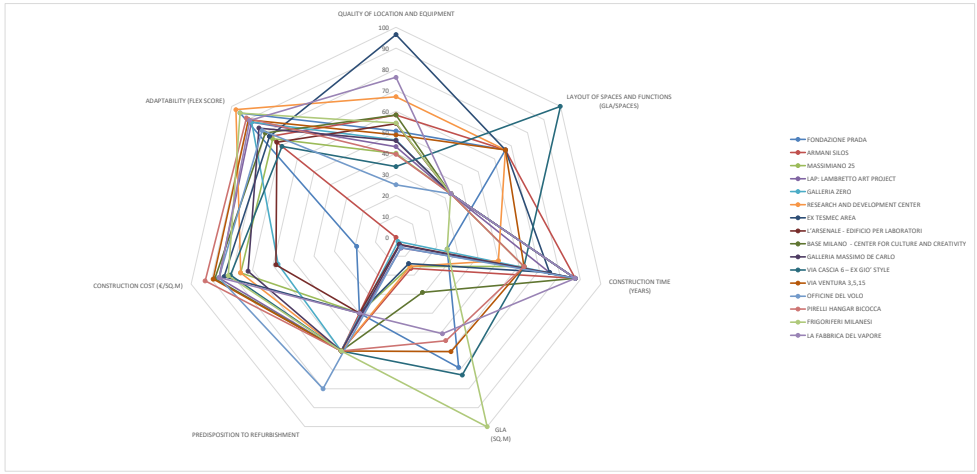
QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,03	0,05	0,094	0,18	0,41



	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
FONDAZIONE PRADA	64	8	6	18900	40	3175	149
ARMANI SILOS	68	8	1	4500	60	11111	121
MASSIMIANO 25	40	4	3	4225	40	947	118
LAP: LAMBRETTO ART PROJECT	58	4	2	1550	60	529	138
GALLERIA ZERO	55	4	1	600	60	1667	138
RESEARCH AND DEVELOPMENT CENTER	73	8	4	4220	60	948	153
EX TESMEC AREA	91	8	2	3800	40	632	121
L'ARSENALE - EDIFICIO PER LABORATORI	61	4	1	1000	40	1625	114
BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	68	4	1	8000	60	450	125
GALLERIA MASSIMO DE CARLO	55	4	1	1100	60	1091	131
VIA CASCIA 6 – EX GIO' STYLE	51	12	3	20000	60	750	109
VIA VENTURA 3,5,15	59	8	3	16600	60	422	141
OFFICINE DEL VOLO	39	4	1	1500	80	533	128
PIRELLI HANGAR BICOCCA	59	4	3	15000	60	267	143
FRIGORIFERI MILANESI	67	4	6	27500	60	709	149
LA FABBRICA DEL VAPORE	73	4	1	14000	40	543	140

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
FONDAZIONE PRADA	51	67	25	69	40	19	95	63
ARMANI SILOS	58	67	88	16	60	0	77	55
MASSIMIANO 25	40	33	63	15	40	76	75	60
LAP: LAMBRETTO ART PROJECT	43	33	75	6	60	87	88	70
GALLERIA ZERO	46	33	88	2	60	58	88	66
RESEARCH AND DEVELOPMENT CENTER	67	67	50	15	60	76	97	78
EX TESMEC AREA	97	67	75	14	40	84	77	76
L'ARSENALE - EDIFICIO PER LABORATORI	54	33	88	4	40	59	73	59
BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	58	33	88	29	60	89	80	72
GALLERIA MASSIMO DE CARLO	46	33	88	4	60	72	83	66
VIA CASCIA 6 – EX GIO' STYLE	34	100	63	73	60	81	69	64
VIA VENTURA 3,5,15	49	67	63	60	60	89	90	76
OFFICINE DEL VOLO	25	33	88	5	80	86	82	66
PIRELLI HANGAR BICOCCA	40	33	63	55	60	93	91	74
FRIGORIFERI MILANESI	54	33	25	100	60	82	95	77
LA FABBRICA DEL VAPORE	76	33	88	51	40	86	89	78

MEDIAN VALUE	68



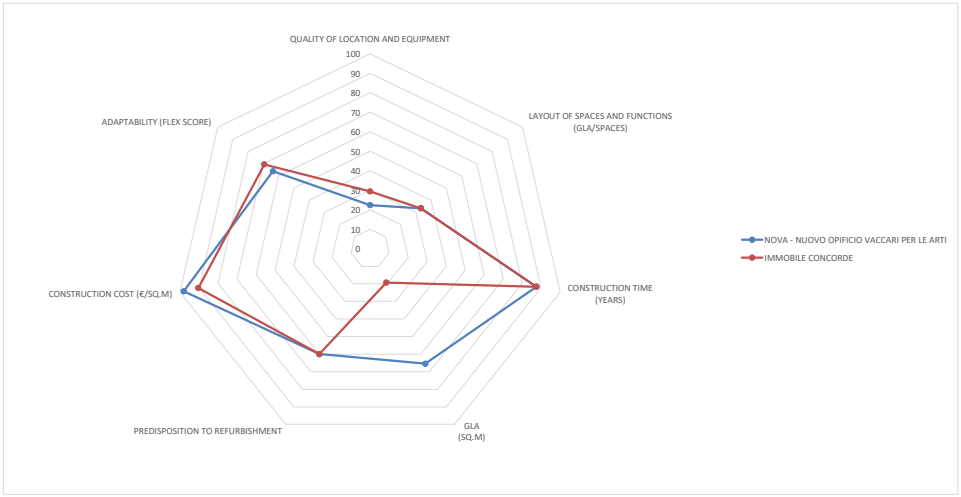
GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100

QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,03	0,05	0,094	0,18	0,41

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	7	4	1	18000	60	77	100
IMMOBILE CONCORDE	21	4	1	5300	60	378	109

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	22	33	88	65	60	98	64	62
IMMOBILE CONCORDE	29	33	88	19	60	90	69	61

MEDIAN VALUE	61



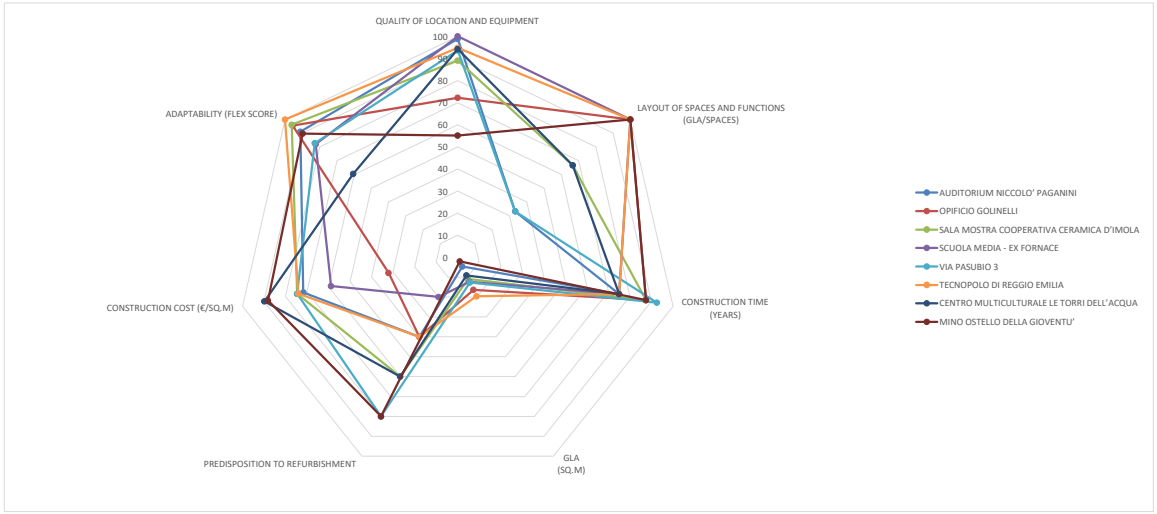
GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100

QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
AUDITORIUM NICCOLO' PAGANINI	99	4	2	1300	40	1111	143
OPIFICIO GOLINELLI	72	12	1	4500	40	2667	150
SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	89	8	1	3000	60	1000	151
SCUOLA MEDIA - EX FORNACE	100	12	2	3400	20	1618	129
VIA PASUBIO 3	94	4	0,6	3500	80	1020	130
TECNOPOLO DI REGGIO EMILIA	95	12	2	5400	40	1019	157
CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	94	8	2	2500	60	400	95
MINO OSTELLO DELLA GIOVENTU'	55	12	1	580	80	466	141

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
AUDITORIUM NICCOLO' PAGANINI	99	33	75	5	40	72	91	78
OPIFICIO GOLINELLI	72	100	88	16	40	32	96	70
SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	89	67	88	11	60	75	96	82
SCUOLA MEDIA - EX FORNACE	100	100	75	12	20	59	82	73
VIA PASUBIO 3	94	33	93	13	80	75	83	79
TECNOPOLO DI REGGIO EMILIA	95	100	75	20	40	74	100	84
CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	94	67	75	9	60	90	61	71
MINO OSTELLO DELLA GIOVENTU'	55	100	88	2	80	88	90	77
MEDIAN VALUE								78

GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100



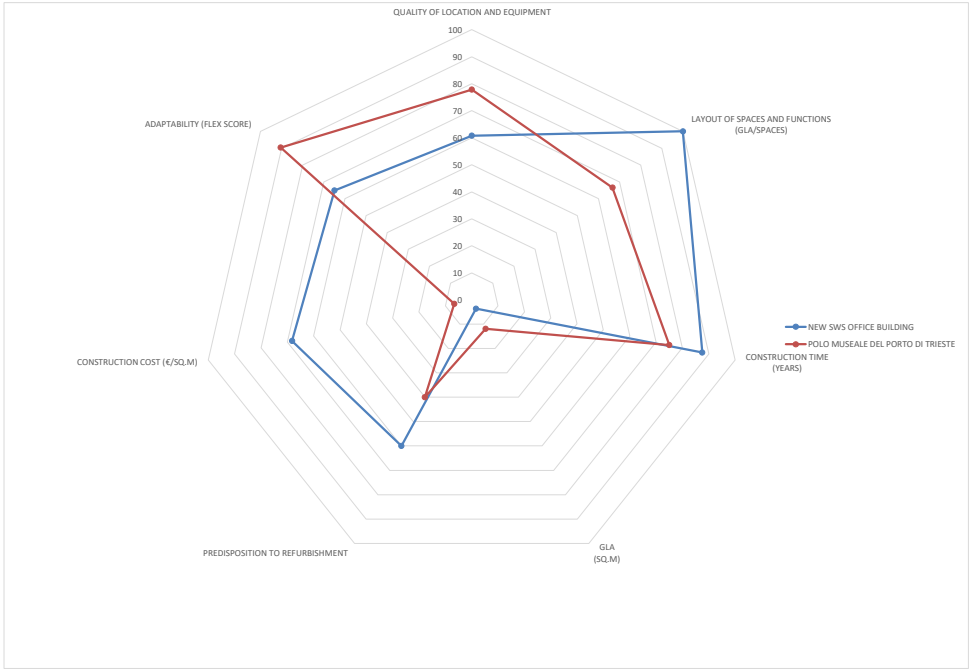
QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
NEW SWS OFFICE BUILDING	77	12	1	1000	60	1250	102
POLO MUSEALE DEL PORTO DI TRIESTE	74	8	2	3270	40	3669	142

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
NEW SWS OFFICE BUILDING	61	100	88	4	60	68	65
POLO MUSEALE DEL PORTO DI TRIESTE	78	67	75	12	40	7	90

FINAL SCORE
63
63

MEDIAN VALUE	63



GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100

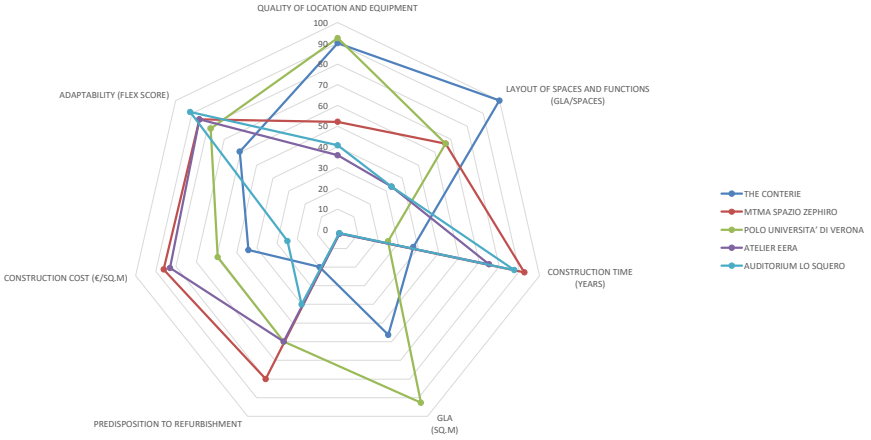
QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
THE CONTERIE	76	12	5	15500	20	2194	95
MTMA SPAZIO ZEPHIRO	70	8	0,6	550	80	545	134
POLO UNIVERSITA' DI VERONA	86	8	6	25500	60	1594	123
ATELIER EERA	52	4	2	600	60	667	134
AUDITORIUM LO SQUERO	55	4	1	508	40	2953	143

GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
THE CONTERIE	90	100	38	56	20	44	61	61
MTMA SPAZIO ZEPHIRO	52	67	93	2	80	86	85	74
POLO UNIVERSITA' DI VERONA	93	67	25	93	60	59	78	76
ATELIER EERA	36	33	75	2	60	83	85	66
AUDITORIUM LO SQUERO	41	33	88	2	40	25	91	58

MEDIAN VALUE	66

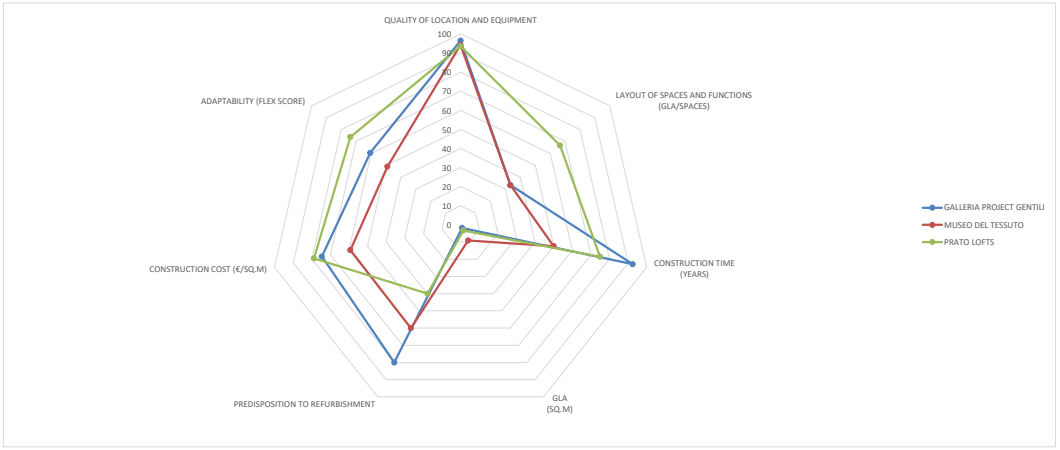


QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
GALLERIA PROJECT GENTILI	91	4	0,6	500	80	1000	95
MUSEO DEL TESSUTO	88	4	4	2.500	60	1600	77
PRATO LOFTS	85	8	2	900	40	833	116

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
GALLERIA PROJECT GENTILI	97	33	92,5	2	80	75	61	70
MUSEO DEL TESSUTO	94	33	50	9	60	59	49	59
PRATO LOFTS	94	67	75	3	40	79	74	72

MEDIAN VALUE	70



GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100

QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

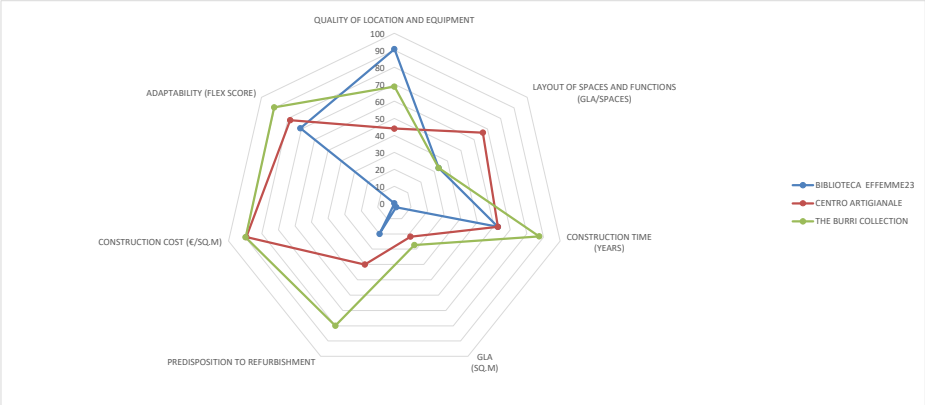
	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
BIBLIOTECA EFFEMME23	79	4	3	700	20	3929	111
CENTRO ARTIGIANALE	70	8	3	6000	40	417	123
THE BURRI COLLECTION	74	4	1	7500	80	400	142

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
BIBLIOTECA EFFEMME23	91	33	62,5	3	20	0	71
CENTRO ARTIGIANALE	44	67	62,5	22	40	89	78
THE BURRI COLLECTION	69	33	87,5	27	80	90	90

FINAL SCORE
53
66
80

MEDIAN VALUE	66

GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100



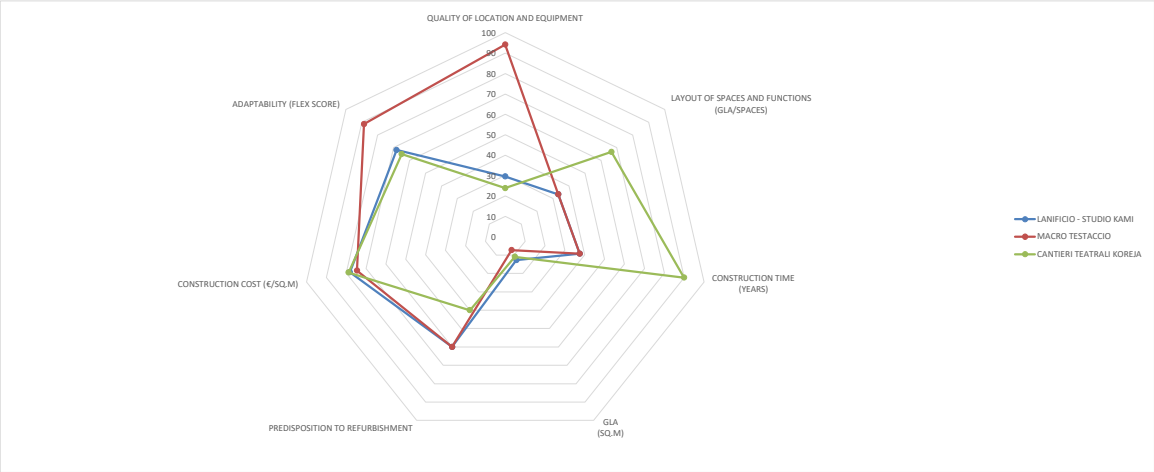
QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
LANIFICIO - STUDIO KAMI	49	4	5	3500	60	857	107
MACRO TESTACCIO	88	4	5	2000	60	1000	139
CANTIERI TEATRALI KOREJA	41	8	0,8	3000	40	833	102

	GLA	FLEX	U.C	C.T	LAYOUT
	27500	157	3929	8	12
	100	100	100	100	100

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
LANIFICIO - STUDIO KAMI	30	33	38	13	60	78	68	57
MACRO TESTACCIO	94	33	38	7	60	75	89	78
CANTIERI TEATRALI KOREJA	24	67	90	11	40	79	65	55

MEDIAN VALUE	57



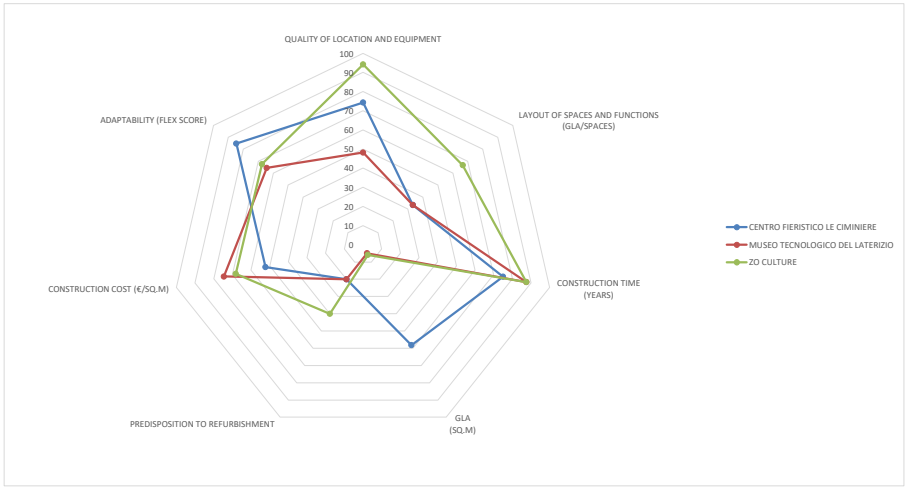
QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
CENTRO FIERISTICO LE CIMINIERE	77	4	2	16000	20	1875	133
MUSEO TECNOLOGICO DEL LATERIZIO	73	4	1	1.350	20	1000	101
ZO CULTURE	88	8	1	1600	40	1250	106

	GLA	FLEX	U.C	C.T	LAYOUT
	27500	157	3929	8	12
	100	100	100	100	100

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT	CONSTRUCTION COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)	FINAL SCORE
CENTRO FIERISTICO LE CIMINIERE	74	33	75	58	20	52	85	68
MUSEO TECNOLOGICO DEL LATERIZIO	48	33	88	5	20	75	64	56
ZO CULTURE	94	67	88	6	40	68	68	68

MEDIAN VALUE	68



QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41

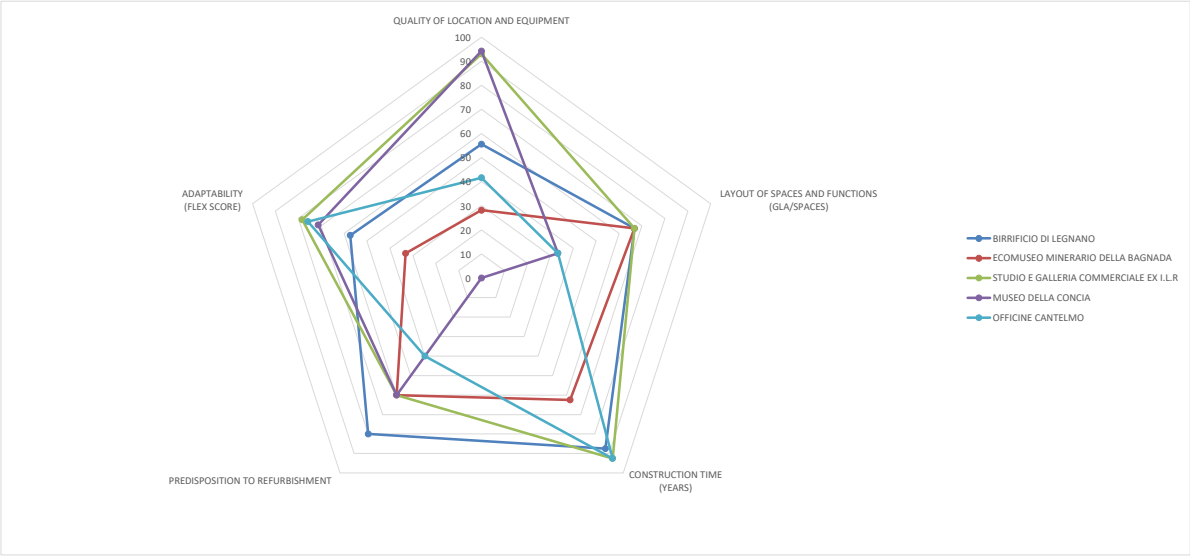
	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	PREDISPOSITION TO REFURBISHMENT	ADAPTABILITY (FLEX SCORE)
BIRRIFICIO DI LEGNANO	56	8	1	80	90
ECOMUSEO MINERARIO DELLA BAGNADA	28	8	3	60	52
STUDIO E GALLERIA COMMERCIALE EX I.L.R	93	8	0,6	60	123
MUSEO DELLA CONCIA	94	4	8	60	112
OFFICINE CANTELMO	42	4	0,6	40	119

	QUALITY OF LOCATION AND EQUIPMENT	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	PREDISPOSITION TO REFURBISHMENT	ADAPTABILITY (FLEX SCORE)
BIRRIFICIO DI LEGNANO	56	67	87,5	80	57
ECOMUSEO MINERARIO DELLA BAGNADA	28	67	62,5	60	33
STUDIO E GALLERIA COMMERCIALE EX I.L.R	93	67	92,5	60	78
MUSEO DELLA CONCIA	94	33	0	60	71
OFFICINE CANTELMO	42	33	92,5	40	76

FINAL SCORE
47
29
62
56
47

GLA	FLEX	U.C	C.T	LAYOUT
27500	157	3929	8	12
100	100	100	100	100

QUALITY OF LOCATION	LAYOUT OF SPACES AND FUNCTIONS (GLA/SPACES)	CONSTRUCTION TIME (YEARS)	GLA (SQ.M)	PREDISPOSITION TO REFURBISHMENT OF THE BROWNFIELD	UNIT COST (€/SQ.M)	ADAPTABILITY (FLEX SCORE)
0,21	0,03	0,025	0,062	0,094	0,183	0,41



ATTACHED 9

"Adaptive Reuse Scores"

REGION	N°	CASE STUDY	ADAPTIVE REUSE SCORE	
PIEMONTE	1	MUSEO DEI CAMPIONISSIMI	62	
	2	CASA ZERA	76	
	3	QUARTIERE AURORA	68	
	4	LA CASA DEI PRODUTTORI	60	
	5	MUSEO ETTORE FICO	63	
	6	FONDAZIONE MERZ	67	
	7	FABBRICA DELLA RUOTA	53	*MIN*
	8	FONDAZIONE PISTOLETTO	64	
LOMBARDIA	1	FONDAZIONE PRADA	63	
	2	ARMANI SILOS	55	
	5	MASSIMIANO 25	60	
	6	LAP: LAMBRETTO ART PROJECT	70	
	7	GALLERIA ZERO	66	
	8	RESEARCH AND DEVELOPMENT CENTER	78	
	9	EX TESMEC AREA	76	
	10	L'ARSENALE - EDIFICIO PER LABORATORI	59	
	11	BASE MILANO - CENTER FOR CULTURE AND CREATIVITY	72	
	12	GALLERIA MASSIMO DE CARLO	66	
	13	VIA CASCIA 6 – EX GIO' STYLE	64	
	14	VIA VENTURA 3,5,15	76	
	15	OFFICINE DEL VOLO	66	
	16	PIRELLI HANGAR BICOCCA	74	
	17	FRIGORIFERI MILANESI	77	
	18	LA FABBRICA DEL VAPORE	78	
LIGURIA	1	NOVA - NUOVO OPIFICIO VACCARI PER LE ARTI	62	
	2	IMMOBILE CONCORDE	61	
EMILIA ROMAGNA	1	AUDITORIUM NICCOLO' PAGANINI	78	
	2	OPIFICIO GOLINELLI	70	
	3	SALA MOSTRA COOPERATIVA CERAMICA D'IMOLA	82	
	4	SCUOLA MEDIA - EX FORNACE	73	
	5	VIA PASUBIO 3	79	
	6	TECNOPOLO DI REGGIO EMILIA	84	*MAX*
	7	CENTRO MULTICULTURALE LE TORRI DELL'ACQUA	71	
	8	MINO OSTELLO DELLA GIOVENTU'	77	
TRENTINO ALTO ADIGE	1	NEW SWS OFFICE BUILDING	63	
FRIULI VENEZIA GIULIA	1	POLO MUSEALE DEL PORTO DI TRIESTE	63	
VENETO	1	THE CONTERIE	61	
	2	MTMA SPAZIO ZEPHIRO	74	
	3	POLO UNIVERSITA' DI VERONA	76	
	4	ATELIER EERA	66	
	5	AUDITORIUM LO SQUERO	58	
MARCHE	1	BIBLIOTECA EFFEMME23	53	
UMBRIA	1	CENTRO ARTIGIANALE	66	
	2	THE BURRI COLLECTION	80	
TOSCANA	3	GALLERIA PROJECT GENTILI	70	
	4	MUSEO DEL TESSUTO	59	
	5	PRATO LOFTS	72	
LAZIO	1	LANIFICIO - STUDIO KAMI	57	
	2	MACRO TESTACCIO	78	
PUGLIA	1	CANTIERI TEATRALI KOREJA	55	
SICILIA	1	CENTRO FIERISTICO LE CIMINIERE	68	
	2	MUSEO TECNOLOGICO DEL LATERIZIO	56	
	3	ZO CULTURE	68	