The elevation of the Moncada Theater in the Librino neighborhood. In the background: the Samonà Tower on the left and the Leone Tower on the right

A participatory project for the Librino Social Housing Community

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Abstract: Social housing is the outcome of policymaking aimed at guaranteeing adequate living conditions for disadvantaged social groups. In Italy, in the post-war reconstruction period, buildings designed by internationally renowned architects, led to results of such high design quality that it is essential to preserve them. Nevertheless, their advanced degradation and functional obsolescence are due to being built with construction systems focused on quick completion and cost-effectiveness, as well as a lack of maintenance. Such conditions now impose performance upgrades and reuse for services and collective spaces. The paper addresses the issue of the recovery of this housing stock in the Italian context, analyzing the case of Librino (Catania). The research question is based on evidence that the lack of services and collective spaces in the suburbs leads people to move to other areas of the city for work, health, education, culture, and leisure. The proposed approach investigates the overall organization of the neighborhood, up to reuse pilots, as for the Moncada Theater, to improve the overall quality and attractiveness of the area, even with minor renovations. The theatre, which was abandoned before completion, is an example of how only housing was built or completed in residential areas designed to provide a wide range of services for citizens as a result of a funding shortfall. Reuse decisions are the result of user involvement with a view to social and cultural sustainability.

Keywords: social housing; participatory design; adaptive reuse; performance upgrading.

1 Introduction

The regeneration of the built environment is recognized in the European debate as one of the key actions for the sustainable development of cities (European Commission, 2014, 2015). Mediating between appropriate conservation and transformation actions, regeneration can contribute to the transition of territories in a circular and adaptive way (Gustafsson, 2018).

The latest European documents of the Next Generation EU Plan (European Commission, 2020), the New European Bauhaus (European Commission, 2021), and the New Green Deal (European Commission, 2019) look at regeneration as one of the potential tools to respond to the aging of the existing EU built heritage, 35% of which is over 50 years old (Gravagnuolo et al., 2021). The trend of "building in the built" contributes to mitigating land consumption, regenerating heritages as testimonies and stratifications of the identity of places and communities, and contrasting the multi-functionality of the same context with re-zoning practices (Casanova et al., 2014).

In this scenario, adaptive reuse is a strategic process that directs the built environment toward circular sustainability (Lanz et al., 2022), transforming waste (considered as the set of abandoned or degraded buildings) into a resource through the incorporation of new uses. This maximizes the economic and social benefits of heritage structures, returning their value to the community that inhabits those (Li et al., 2021). Adaptive reuse thus establishes a link between past and present, representing modern society's means of passing on heritage to future generations (Pinto, 2004).

Reuse becomes the key to sustainable transition processes (Florida, 2017) of the built environment: on the one hand, it intervenes in the dynamics of enhancing local identity and the sense of belonging to a place (Ginelli, 2022; Viola, 2022). On the other hand, it triggers actions of regeneration of environmental values related to the extension and enhancement of the life cycle of the built environment. In international scholarly debate, reuse is considered as the set of construction and/or intervention actions aimed at functionalizing a building or system of buildings to meet new conditions and requirements (Douglas, 2006). Therefore, adaptive reuse has been progressively enriched with arguments related to cultural, socio-economic, and ecological objectives (Perris, 2013).

Means regeneration is the revitalization of the activities in the perspective of the circular economy/city (Fusco Girard et al., 2019), the necessary use of actions in reference to the built environment generates positive impacts at different scales (Misirlisoy et al., 2016),

primarily activating regimes of interaction and interdependence among the main subsystems (architectural, economic, social, and cultural) of settlements (De Medici et al., 2018). As recognized by the actions of the United Nations 2030 Agenda for Sustainable Development (United Nations, 2015), reuse actions also contribute to the quality of life and individual and community well-being (UNESCO, 2009). Research interprets the pillar of "social" sustainability (CHCfE Consortium, 2015) as an essential requirement for realigning the needs of new community lifestyles with the performance of abandoned or underutilized buildings. The choice of new functions and activities takes on strategic significance concerning both the building being reused and the urban context.

In a regenerative perspective of the urban context, the research looks at the reuse of Social Housing neighborhoods as a strategic field of experimentation in which it mediates between actions of preservation, as the historical testimony of the postwar twentieth-century identity of this residential built heritage (Ascione, 2021); and actions of adaptive transformations attentive to the energy and construction requirements of the new climatic era.

On one hand experiences in more recent years propose flexible housing models and new sustainable buildings; on the other, the booming constructions require substantial rehabilitation and maintenance. Advanced degradation and functional obsolescence of these are due to being built with construction systems focused on quick completion and cost-effectiveness, as well as lack of maintenance and the progressive change in the use performance requirements.

Over time, indeed, Social Housing has represented signature solutions aimed at experimenting with new housing modes as laboratories of shared spaces and activities to generate neighborhood communities. This challenge, often disregarded, yields in the contemporary architectural debate to return the principle of the right to the city to settled communities (Viola, 2012); which concerns the empowerment - both of individuals and most - in the management of the built environment and the regeneration of the relationships generated in it (Sacco et al., 2009). The proposal aims to act on physical degradation, performance mismatch of buildings, and long-term neglect of neighborhood services due in part to disregard for the care and maintenance of public assets (Douglas, 2006).

Thus, the research proposes a model of adaptive reuse attentive to the emergencies of the fabric of Italian Social Housing neighborhoods in order to offer a system

of punctual actions that improve the performance of the settlement system as a whole. The research focuses on the unique heritage of the Moncada Theater in the Social Housing neighborhood of Librino in Catania, Italy. The case study is chosen for its emblematic qualities of historical testimony (Ost, 2009) and potential for adaptability. The methodology adopted resorts to the construction of a circular approach, based on a systemic analysis of the context and a participatory approach extended to all the actors of the area in the reuse process (Aigwi et al., 2020; Misirlisoy, 2016; Wilson 2016). On the one hand, the systemic logic, applied to the urban scale, allowed for an understanding of the history of communities and the identity of places, and the reasons for urban planning choices. On the other hand, involvement and participation allowed proceeding to the scale of housing solutions designed for users and the technologies used, without losing sight of the complexity as a whole.

The choice of new functions to be integrated can be defined as compatible being oriented to the preservation of values related to collective memory (Pinto, 2016), promoting the enhancement of both new dynamics and virtuous ones already in place in the neighborhood (Daldanise et al., 2019).

The research thus returns a timely and widespread model of adaptive reuse actions of the built environment, triggering dynamics of synergistic involvement between decision makers and stakeholders, moving from a centralized management of intervention (top-down) to a shared one (bottom-up). In particular, the elaborated model of adaptive reuse accompanies the participation of inhabitants, direct stakeholders, in the evolution of their personal perception of the place they inhabit, fostering dialogue and awareness of the transformations taking place, determining potential new scenarios of shared care and management of the built environment (Florida, 2017; Stone, 2019).

The paper is therefore divided into 4 sections: the first one presents the theme and the urgency with which to intervene in the contemporary scientific scenario; the second one is dedicated to returning the articulation of the methodological stages, starting from the preliminary one of historical-cultural knowledge, in-depth study, and systemic analysis of the neighborhood, to the participatory-based "Social Planning of Objectives"; a third one devoted to the results received from the Librino neighborhood experimentation, with specific reference to the Moncada theater; and finally, enlightening on the new directions and the potential and innovations introduced by the research.

2. Methodology

In order to deal with the renovation processes of twentieth-century neighborhoods or social housing compounds, a design methodology has been developed and tested by applying it to the case study of the Librino neighborhood in Catania. The methodology is centered on a model that can be defined as "social planning of goals", adopting a participatory approach. The meaning of participatory planning is "a form of planning that implies the association and union of several points of view in order to create the best possible solution in terms of plans, projects, and strategies; it is, therefore, essential that it brings together different skills, competencies and experiences" (Bishop, 1986). Only through a participatory process, whereby citizens are included in the decision-making phases of the regeneration of their neighborhood, we can consider planning as a bottom-up process. Renovation and maintenance strategies have to be built through multi-actor tables, where the different actors involved in the renovation process bring their competencies and skills and, in sharing them, increase the capability to develop projects complying with the values expressed by fragile environments, in which there is a high risk of losing such values (De Medici, 2021). According to Bosone and Ciampa, "the participation of different actors in the regeneration process represents a fundamental condition to achieve sustainable development goals by promoting an inclusive approach able to integrate different actors in the whole planning process", a human-centered approach based "on the collaboration and co-production of stakeholders as enablers of policies and actions" (Bosone et al. 2021). In the framework of a renovation project in a social housing neighborhood, the proposed methodology consists of five main phases. The phases are dynamic and can be adjusted in progress, concerning the peculiarities of the case study and the social implications derived (Fig. 1).

Figure 1 | Librino Social Housing neighborhood community meetings for participatory planning.

- Cognitive framework: the first phase is related to the knowledge of the project, starting from history and arriving at the present day through the analysis of the built and infrastructural system, analyzing the housing and social conditions that animate it. The purpose of this phase is the definition of the design reasons and objectives that animated the original designers of the Housing, the identification of the peculiarities of the neighborhood, starting to define the potential and criticalities.

- Identification of the problems and objectives: this phase involves the designer's participation in a series of meetings with the neighborhood inhabitants with the main objective of understanding the dynamics and problems as well as observing people's behavior and the way they interact with the surrounding space. In the experimental case, the meetings were organized thanks to the support of the Third Sector, which is often strongly active and lively in the most problematic neighborhoods of contemporary cities.

- Identification of participative strategies: the project must take into account the existing physical context and social fabric and must refer to as wide a target audience as possible. This phase, like the previous one, is strongly linked to the strategy of participation and inclusion of the inhabitants in the recovery project. For the analysis of the physical and social context, the "Lynch system" (Lynch, 2006) was selected: through direct observation of the context and the preparation of questionnaires to be administered to the neighborhood's inhabitants, it is possible to outline the citizens' needs, strengths and criticalities of the places where they live. In the experimentation on the Librino neighborhood, having identified young people as the main target, a system of online questionnaires was set up and swiftly disseminated by the neighborhood associations in order to facilitate user participation. The questionnaires administered, consisting of about twenty questions, were structured in two parts: the first aimed at defining the profile of the inhabitants (gender, age group, area of residence in the neighborhood, working condition), the second dedicated to the perception and expectations of the inhabitants of the social housing neighborhood, with the aim of identifying possible poles of attraction, as well as the presence or need for services to meet the inhabitants' needs.

- Elaboration of the project that crosses the needs of the inhabitants of the social housing neighborhood with the peculiarities of the built environment, respecting the constraints to transformation.

- Management and maintenance plan: this phase requires special care and attention and may also include participatory care pacts.

3. The case study: Librino neighborhood

The case study identified is the social housing district of Librino (Fig. 2), located in Catania (Sicily). The district, of 420 ha, is currently inhabited by 62,000 people and has a land density of 150 inhabitants/ha.

The district was created in response to an urgent housing need, linked to a serious situation of over-crowding in the city of Catania, which was also highlighted at the Second National Congress of Urban Planning and Construction in Rome in 1948. The saturation of the urban grid after World War II led to a voluntary and unregulated expansion of the city, resulting in the development of the first nucleus of Librino, known as 'Borgo Librino'. With Piccinato's Master Plan, drawn up in 1964 and approved five years later, the planning of the Librino district officially began, with the aim of creating a social housing district for 60,000 people. Librino's location is not accidental: it is planned on a natural promontory, both to guarantee a favorable vantage point and, above all, to connect the city's peripheral area with the main services, thus defining a new urban centrality, connected to the existing city but in a certain sense independent. The Plan was then taken up and implemented by Japanese architect Kenzo Tange, becoming executive in 1979. The Plan for the construction of Librino envisages an urban layout divided into ten residential nuclei, each capable of accommodating 6000/7000 inhabitants. The residential cores were designed so that each one could guarantee different services, with the aim of constituting new poles and promoting the mobility not only of the district's residents but also of the other citizens of Catania within the 'New Town'. The six urban cores are connected through a ring road network and a system of soft mobility and green plugs, designed based on the residents' welfare needs.

The construction of the Librino neighborhood Plan is based on a project by several prominent professionals, such as Giacomo Leone, Edoardo Detti, Giuseppe Samonà, and Maurizio Clerici. Nonetheless, as in many Italian suburbs, the need to provide low-cost housing has taken priority over the construction of buildings for collective services and public green spaces. In Librino, buildings, and civic spaces were only partially completed. This has seriously compromised the quality of the urban environment, exacerbating social problems and crime.

Figure 2 | View of the Librino neighborhood.

Figure 3 | View of the Librino neighborhood: foreground of G124's urban mending project.

The cognitive phase allowed for the reconstruction of a picture that, beyond the Plan's comprehensive and promising approach, revealed quite a few critical issues. In the preliminary phase, two peculiarities of the project area were not taken into account: firstly, the effective proximity to the airport was not taken into account, with the consequent problem of acoustic and atmospheric pollution; secondly, the climate that characterized the area, particularly sultry and torrid, was not taken into account. During the construction phase, the delay in the execution of the primary urbanization works, which began only after the residential building works, generated quite a few inconveniences in the development and life of the district.

The failure of Kenzo Tange's plan can mainly be traced back to the failure and delays on the part of the municipal administration in the construction of many of the planned public works - theatres, squares, sports facilities, etc. - leading to a sudden transformation of Librino from a 'New Town' with poles of attraction to a simple 'dormitory district' with all the negative consequences common to many suburban complexes of that period. - leading to a

sudden transformation of Librino from a 'New Town' with poles of attraction to a simple 'dormitory district' with all the negative consequences common to many suburban complexes of that period.

In 2014, the G124 Working Group, led by architect Renzo Piano, launched the project 'BAL. Good Actions for Librino" of urban mending of Librino, to mend the social housing district with the city of Catania, and above all, of mending the social fabric. Through a series of meetings with the neighbourhood's inhabitants, aimed at activating practices of inclusion and participation of the resident population in the planning process for the neighborhood's recovery and regeneration, a particularly important area of experimentation and intervention for the community was identified: "San Teodoro Liberato", a non-place where there is a school and some sports facilities. The project, thanks to strategies such as securing the area, creating a driveway and pedestrian accesses, and installing areas for play and social interaction, has given identity and functions back to the area under intervention, transforming it into Librino's first equipped area (Fig. 3).
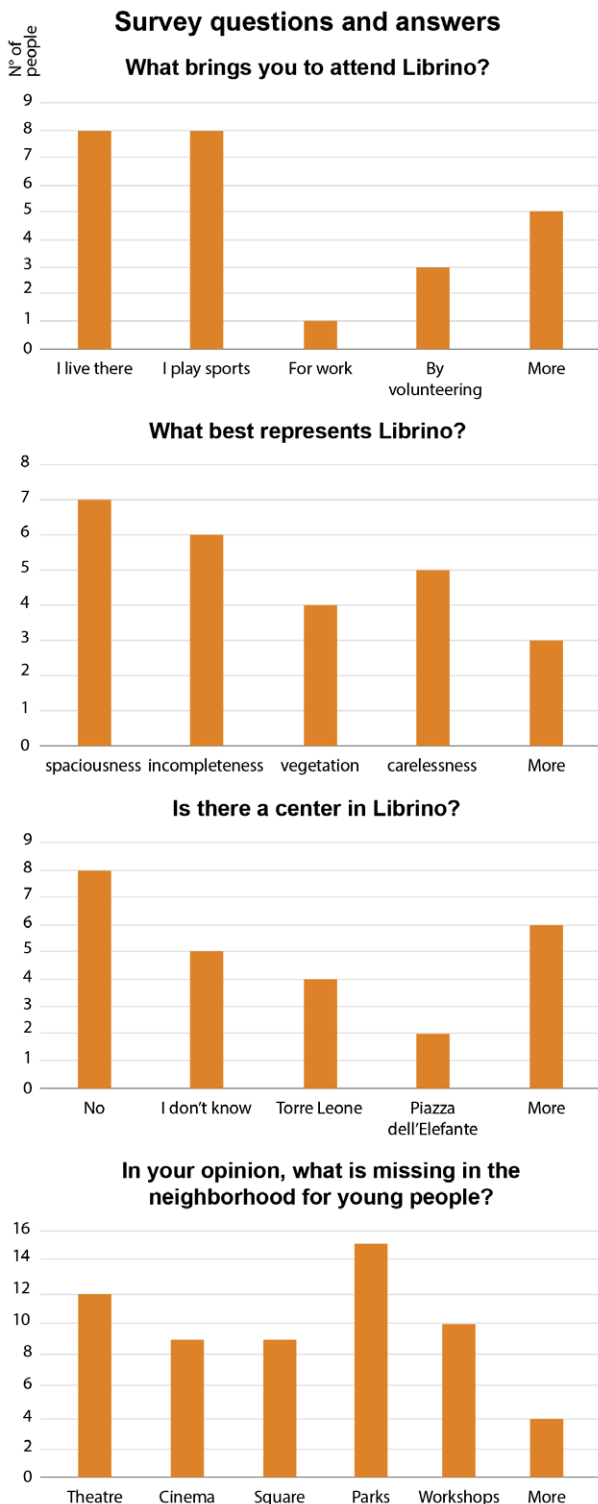
Survey questions and answers

What brings you to attend Librino?

What best represents Librino?

Is there a center in Librino?

In your opinion, what is missing in the neighborhood for young people?

Figure 4 | The graphs represent some of the citizens' answers to the survey.

Following the methodological approach described above, with reference to the case study of the Librino district, once the knowledge phase was completed, the phases of identifying the problems and objectives and identifying participatory strategies were set up, through the administration of questionnaires during a series of meetings with the Librino community.

The survey of residents' needs was carried out with the involvement of the neighborhood associations in order to build a relationship of trust with the residents. The aim and methods of the survey were explained at neighborhood meetings, and the questionnaires were then distributed through social channels. The initiative involved a sample of about 50 young people, the main residents of the neighborhood. The decision to focus on the viewpoint of the youngest age groups stems from the willingness to adopt strategies that encourage them to stay in the neighborhood and stay away from criminal activities. Such strategies, as a knock-on effect, can have a significant impact on the quality of life of residents of all ages. Figure 4 shows some graphs that summarize the results of the administered questionnaire (Fig. 4).

From the interviews emerged the need to mend the relationship of affection of the inhabitants of the district, introducing a mix of activities and services, with the virtuous aim of making the district a pole of attraction also for the citizens of Catania, partly taking up the objectives of the neighborhood generator plans. With the support of the inhabitants, for each of the six nuclei that make up the Social Housing district of Librino, strategic areas have been identified in which to experiment with recovery and regeneration processes. For each selected area, detailed analysis sheets were drawn up for the identification of the residual spaces on which to intervene, considered strategic for achieving the neighborhood revitalization objectives. Among the strategic areas identified, a residual space, considered particularly critical, located within the urban nucleus of Moncada, was chosen as the field of experimentation of the methodology. The experimentation area includes a space built with a theatre, the pertinent shops, and the relative external spaces. The building, which was never used, became a symbol of physical and social decay in the neighborhood.

The Moncada Theater project already owes its origins to the 1976 Zone Plan, but following a series of administrative and judicial problems, the structure was completed only in 2000, without ever being put into operation and officially handed over to the city and to the community.

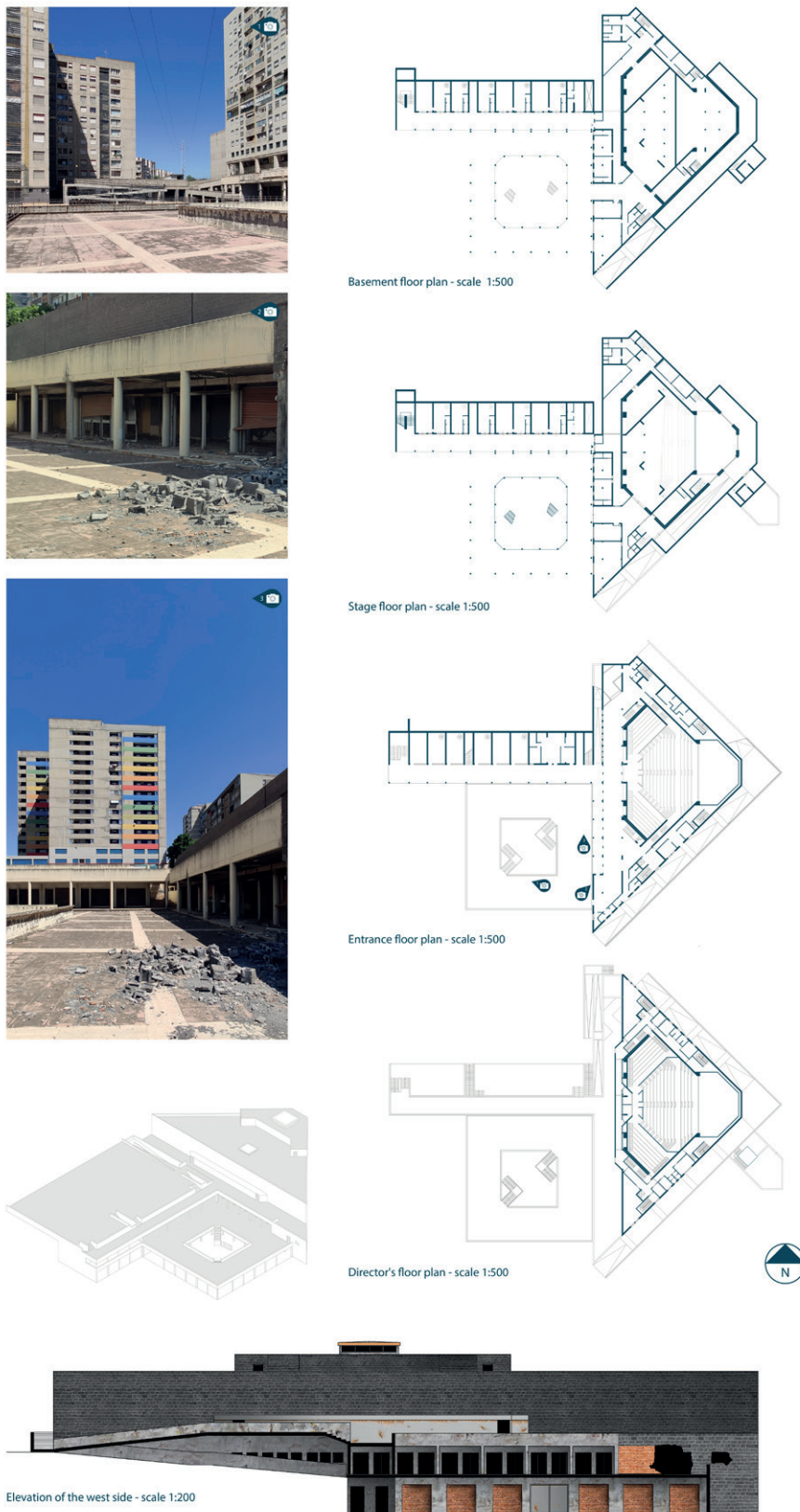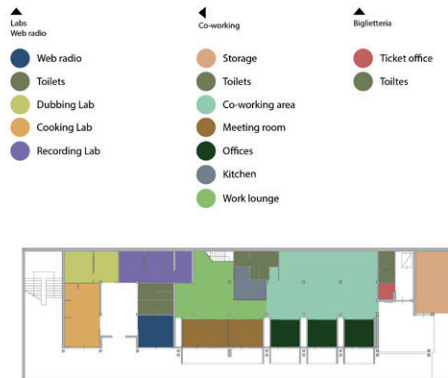The theater has a seating capacity of 500, but it never actually came into use (Fig. 5).

Basement floor plan - scale 1:500

Stage floor plan - scale 1:500

Entrance floor plan - scale 1:500

Director's floor plan - scale 1:500

Elevation of the west side - scale 1:200

Figure 5 | The Moncada Theatre in Librino, Catania (Italy).

The distribution of functions
Ground floor

Labs
Web radio

- Web radio
- Toilets
- Dubbing Lab
- Cooking Lab
- Recording Lab

Co-working

- Storage
- Toilets
- Co-working area
- Meeting room
- Offices
- Kitchen
- Work lounge

Biglietteria

- Ticket office
- Toiltes

First floor

Labs

- Painting Lab
- Farming Lab
- Toiltes

Library

- Library

0   5 m   20 m
  2,5 m   10 m

N

Variable spaces

TOUCH AND GO
Temporary and quick support station, used to send emails or work during short waits.

WORK LOUNGE
A working lounge, ideal for short-term activities in a pleasant and relaxing space that encourages collaboration.

OFFICES AND BRAINSTORMING
Meeting and working space for small teams, designed as a confidential space that can stimulate concentration and crativity.

OPEN SPACE
Workstations placed in a large workspace that can be easily reconfigured, fosters communication and strengthens relationships.

Figure 6 | New function for the project of workshop area (Moncada Theatre)

The main objective of the intervention is to activate a polarization mechanism of the place, through a re-functionalization intervention of the existing structures put into a system with the activation of the green spine and the related cycle-pedestrian paths.

In a short time, the theater has become a logistic center of the underworld, used for the dealing and illegal sale of weapons. The frequent acts of vandalism to which it is subjected make access to the structure highly insecure. During the preliminary and fact-finding phase of the specific area examined, the conditions of the existing heritage were also assessed: the phenomenon of abandonment has accelerated a widespread general deterioration, especially as regards the external coverings, exacerbating the real safety problems or perceived. The planning phase led to the identification of a series of necessary interventions linked to the specific needs that the inhabitants of the district expressed through the participatory process, also in line with the regulations for improving the safety of cities:

- draw the guidelines for the recovery of the Moncada theater, with the aim of reactivating its original function as well as its attractiveness, making it available to the neighborhood and citizens;

- reconvert the abandoned shops (which were originally supposed to house shops) into laboratories and coworking spaces, web radio and library (Figs. 6-7).;

- re-functionalize the access space to the theatre, making it a functional place at the service of the community throughout the day. (Fig. 8).

The project has the general objective of organizing a service hub with the functions of a new catalyst for events and activities, capable of attracting both the citizens of Librino and the inhabitants of the city, not only by defining group workspaces and reserved areas for individuality but also by strengthening the system of social relations. The choice of new functions is primarily aimed at providing training and employment opportunities for young people in the neighborhood, offering them alternatives to crime to build their future without necessarily having to leave the neighborhood.

The proposal not only aims to create spaces for socializing but also to channel the possible interest of companies and start-ups, which can collaborate in order to structure an ecosystem using the functions and services made available.
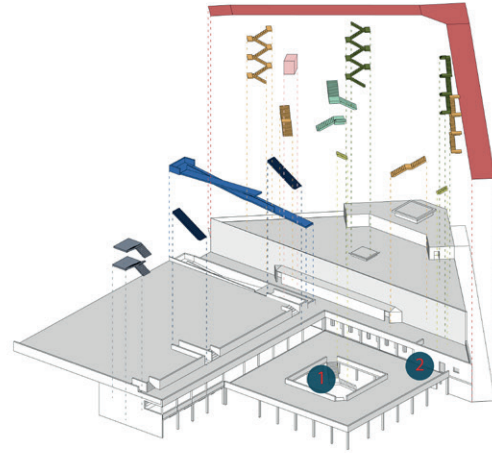
Following the needs expressed by the inhabitants of the Social Housing, the first planning phase focused on

Vertical connections

External ramp
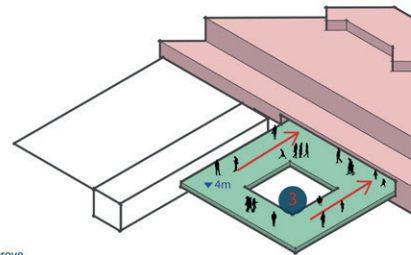- 4m → 8,25m
- 0m → 8m

Indoor staircase
- 4m → 7,3m
- -1,15m → 13,45m
- 0m → 4m
- 0m → -1,15m

External staircase
- 4m → 8,25m
- 0m → 8,25m

Elevator
- 0m → 4m
- 0m →
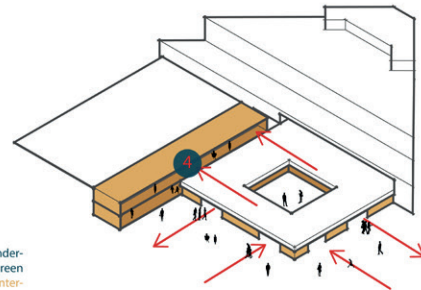
Design concept

SQUARE AND THEATER

- Equipped square
- Multidisciplinary theater

The activation of the planned services will improve the existing outdoor space and the square, which will be the element that can relate the theater to the outdoor space.

LABS AND ENTERTAINMENT

- Co-working
- Web radio
- Labs
- Library

Stores are converted into labs, and the space underneath the square is equipped as permeable green space, with areas set aside for coworking and entertainment.

GREEN LUNG

- Street art
- Equipped park
- Connection to the green plug
- Footpaths
- Bicycle routes
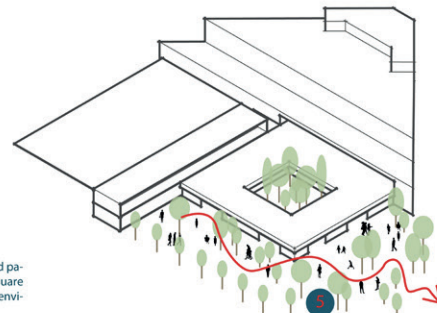
The outdoor space is configured with wide paved pathways that connect to the green plug and the square courtyard, composing a "green lung" in the built environment.

Figure 7 | Photos of the current status on the left, project concepts on the right. Photo 1: view of stairs from ground floor to public platform for theatre access (upper floor). Photo 2: view of areas designated for labs (ground floor). Photo 3: view of the public platform for accessing the theatre (upper floor). Photo 4: view of the laboratory areas from the square (upper floor). Photo 5: view showing the two levels used for theatre and public space.

Figure 8 | Rendered view of the external project context (Moncada Theatre).

the redevelopment and enhancement of the disused shops, foreseeing a change of destination through the activation of a mixite of services, made available for the young people of the neighborhood, residents and non-residents. The area of the shops, by conformation, allows for the systemization of various functions, making it possible to determine a distinction between the driving and driven functions. The following services have to be activated inside the abandoned shops: agriculture laboratory; cooking laboratory; recording laboratory; dubbing laboratory; painting workshop; web radios; coworking space; library. The enhancement of this building is a potential turning point, since the active functions will determine positive effects also through collaborations and partnerships between companies, laboratories, and functions. For example, the establishment of an agricultural laboratory will be able to facilitate the maintenance and monitoring of the green assets available to Librino, such as the urban gardens, the urban park, and the green thorns under construction, through theoretical

and practical courses aimed at environmental education and agricultural practices. Furthermore, the organization by functional areas will favor the revitalization of the open space devoid of identity, ensuring the necessary dynamism so that it can fulfill the role of catalyst for relationships (Fig. 9).

4. Conclusions

The renovation and adaptive reuse of the built heritage, in particular of the Social Housing heritage, can be considered a practice oriented towards sustainability in the broad sense, in line with the most recent European programs which address not only the energy transition, the adoption of circular economy processes, zero consumption of non-renewable resources, including soil, but also social and cultural inclusion. "Social regeneration and social infrastructures are linked to inclusion policies, dedicated to segments of the population who live

Figure 9 | Render view of the project layout.

Figure 10 | Render elevation of the project (Moncada Theatre)

in conditions of social marginalization, supported with interventions to enhance public residential construction, temporary housing, with the Municipalities operational protagonists and metropolitan areas where conditions of social hardship and vulnerability are more widespread" (Ginelli, 2022).

From this point of view, adequate regulatory instruments in the form of "collaboration agreements"

become indispensable: real "horizontal" agreements in which citizens active within the community and public subjects define and collaborate for a plan for the care of the commons. Taking up the motto of the New European Bauhaus –Beautiful, sustainable, together– the social housing recovery project must be based on practices of participation and sharing of decision-making processes which, starting from the real needs of the communities, aim to re-propose living environments and quality work,

to restore a sense of belonging to the District, to promote collaboration between public bodies and citizens in taking care of common spaces (Fig. 10).

Acknowledgments

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