# Co-evolution between space, nature, and society. The Milanese fringes: Porto di Mare as a case study

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## Abstract

*The contribution presents the results of a design driven research about the topic of co-evolution between space, nature and society, focusing on a Milanese fringe, in which human activities and natural capital co-exist with no dialogue. The project assumes the new European Bauhaus as a framework, reflecting upon the spatialization of theoretical instances aimed at the physical impacts of a co-evolutionary transformation. The output of the research is the promotion of design actions for a resilient landscape prototype, linking productive activities to natural and social capital, through circular and Nature-based solutions. Thus, attention is given to spatial configurations that aim to increase biodiversity in human settlement, through the design of ecological corridors, and to inclusiveness, in the redesign of former industrial facilities and local community habitats.*

Il contributo presenta i risultati di una ricerca orientata al progetto sul tema della coevoluzione fra spazio, natura e società, concentrandosi su una frangia urbana di Milano in cui le attività umane e il capitale naturale co-esistono senza dialogo. Il progetto assume così il framework del New European Bauhaus, interpretandone la spazializzazione delle istanze proposte, cercando di restituire le ricadute fisiche di una trasformazione che tende a processi di co-evoluzione.
L'esito della ricerca è la promozione di azioni progettuali atte ad un prototipo di paesaggio resiliente, connettendo le attività produttive al capitale naturale e sociale, attraverso l'uso di soluzioni circolari e nature-based. Quindi, si pone attenzione su configurazioni spaziali che hanno l'obiettivo di incrementare la biodiversità nell'insediamento umano, attraverso la progettazione di corridoi ecologici, e all'inclusività, nel ridisegno degli ex impianti industriali e degli habitat delle comunità locali.

## Keywords

*Urban fringe regeneration, rurban ecologies, nature-based solutions, inclusive design, design-driven research.*

Rigenerazione di frange urbane, ecologie rurbane, soluzioni basate sulla natura, progettazione inclusiva, ricerca orientata al progetto.

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**Introduction**

Peripheries, where urbanity transitions to rurality, are spaces of conflict and expulsion (Sassen, 2014). Their intermediate area characteristics, between an urban fabric and a rural one, have become uncertain over time, producing a low-density settlement, with a continuous exchange of relations and intrusions between these two entities, and where the territory assumes the characters of both (Mininni, 2013).

The aspect of "rurbanity", which merges the characteristic of rural ecologies and the urban ones, connotates the fringe areas shared by the two juxtaposed environments, generally limiting each other in the expression of both the agricultural urban potential (Firey, 1946). The invasion operated by human settlements, brown fields, and industries mixes with the agro-productive site, turning a territory of farms and crops into the rurban fringe, in which the two anthropic and natural ecologies co-exist. This condition of vagueness (De Solà-Morales, 1996) that stems from consolidated dualisms – wild-domestic, productive-unproductive, urban-rural – reducing reality to a more comprehensible and imaginable entity, has severely influenced the spatial, social and economic development of these places. It produces "waste also in terms of landscape: abusive and dense buildings, spaces without quality, without accessibility, without porosity, without identity." (Russo, 2018, p. 42), affecting the composition of the territory.

The topic of territorial fragilities in fringes (Fontanella, 2021) brings forward a synthetic approach that seeks to mend the traditional gap between wilderness and urbanity, society and nature. Here the contribution proposes to recast the discipline of architecture as a creative mediation tool, encompassing the notions of co-existence and co-evolution within the territorial relationship between urbanity and rurality, reaching an intermediate scale of action. The complexity of these themes, together with the climate crisis (Bulkeley, 2013), and the urgency of a renovation wave prompted by the European Green Deal, brought the European Union to propose a cultural and interdisciplinary initiative able to give an impulse to the built environment transformation.

The New European Bauhaus (NEB) is a framework that considers a harmonious relationship with nature, the environment and people at its core (European Commission, 2021). In a holistic perspective, the initiative proposes three pillars for the foundation of the contemporary transformation. These pillars are expressed by the NEB slogan "beautiful, sustainable, together": "beautiful", in terms of spatial quality and aesthetic beyond functionality; "sustainable", referring to the climate change goals

**Fig. 1** – Porto di Mare, Looking Towards the Urban Side (image by the Authors).

**Fig. 2** – Porto di Mare, Looking Towards the Rural Side (image by the Authors).

and resource use; while and "together" gives value to inclusivity and affordability.. They could generate a set of values from which to look at the transformation of the project, in a multi scalar and creative perspective, from the single architecture to the landscape.

Approaching this framework, the city's fringes could constitute a fertile ground for design experimentations, generating structural transformations to face the rising environmental and social crises. Accordingly, the NEB objectives shall possibly inform and implement the co-evolutionary project with a renewed attitude and sensibility.

The aim of the contribution is to bring forward a theoretical and design-driven reflection on co-evolution, as a potential for urban fringe regeneration. It frames the authors' position - through a design experimentation – on the possible impact of the NEB framework for the design practice and theory, in the possibility of regenerating neglected fragments, reconnecting with nature and restoring social relationships. Specifically, the focus is on Porto di Mare, in the southern fringe of Milan, which is configured as a polluted industrial site between the city and the countryside (Fig. 1; Fig. 2).

## Grounding the co-evolutionary project with a design-driven method

The contribution presents the results of a design driven research (Roggema, 2017; Schoonderbeck, 2017) about the co-evolution of a rural and urban habitat, in which both the project and the theoretical assumptions arise from a double step of investigation. The first step was led within the Politecnico di Milano[1], in which the relevance of the design strategies for contemporary Milanese outskirts was conceived by shaping spatial answers to specific territorial fragilities. The second step stems from the NEB, launched between the 2020 and the 2021, giving new insights to initial research project. Here

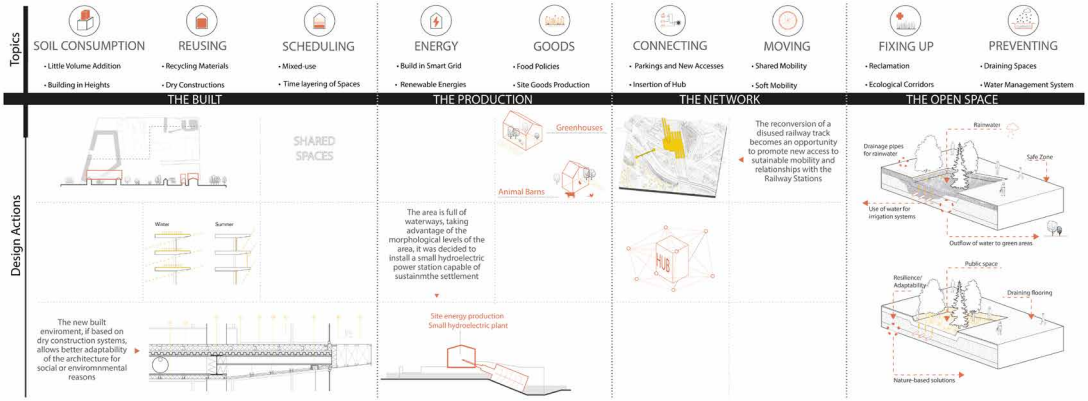



**Fig. 3** – Design Matrix, Urban Design for Sustainability (elaboration by the Authors).

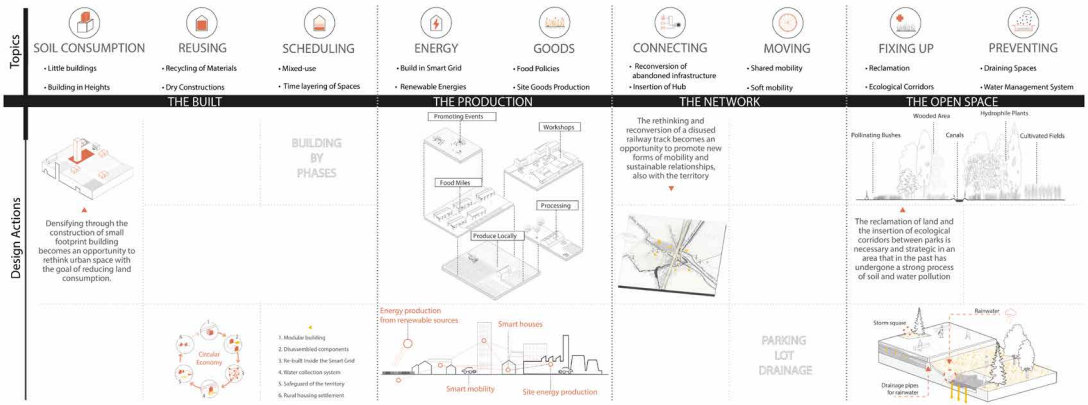



**Fig. 4** – Design Matrix, Relation with the Rural Territory (elaboration by the Authors).

the theoretical background and the design experimentation have evolved not only to address spatial and social themes of territorial fragilities in the selected outskirt, but also deepening the reconnection with nature for a new, and possible, co-evolution for the intermediate areas.

In the first step, the main objective was to analyse and identify the spatial condition of urban-rural margins. The project, aimed for spatial reconnection proposals between the limits of urbanity and rurality and was considered, an explorative tool, used to reveal potentialities and to solve the necessities of a place. About this design output experimentation, the urgencies highlighted in the NEB slogan – "beautiful, sustainable, together" – were already present in non-mediated way. Porto di Mare, the selected outskirt of Milan, was reconfigured through a design abacus intersecting social problems (need for affordable houses, need for workspaces, need for qualitative public spaces...) and environmental issues (e.g: high level of air pollution, needs of ground reclamation, water contamination due

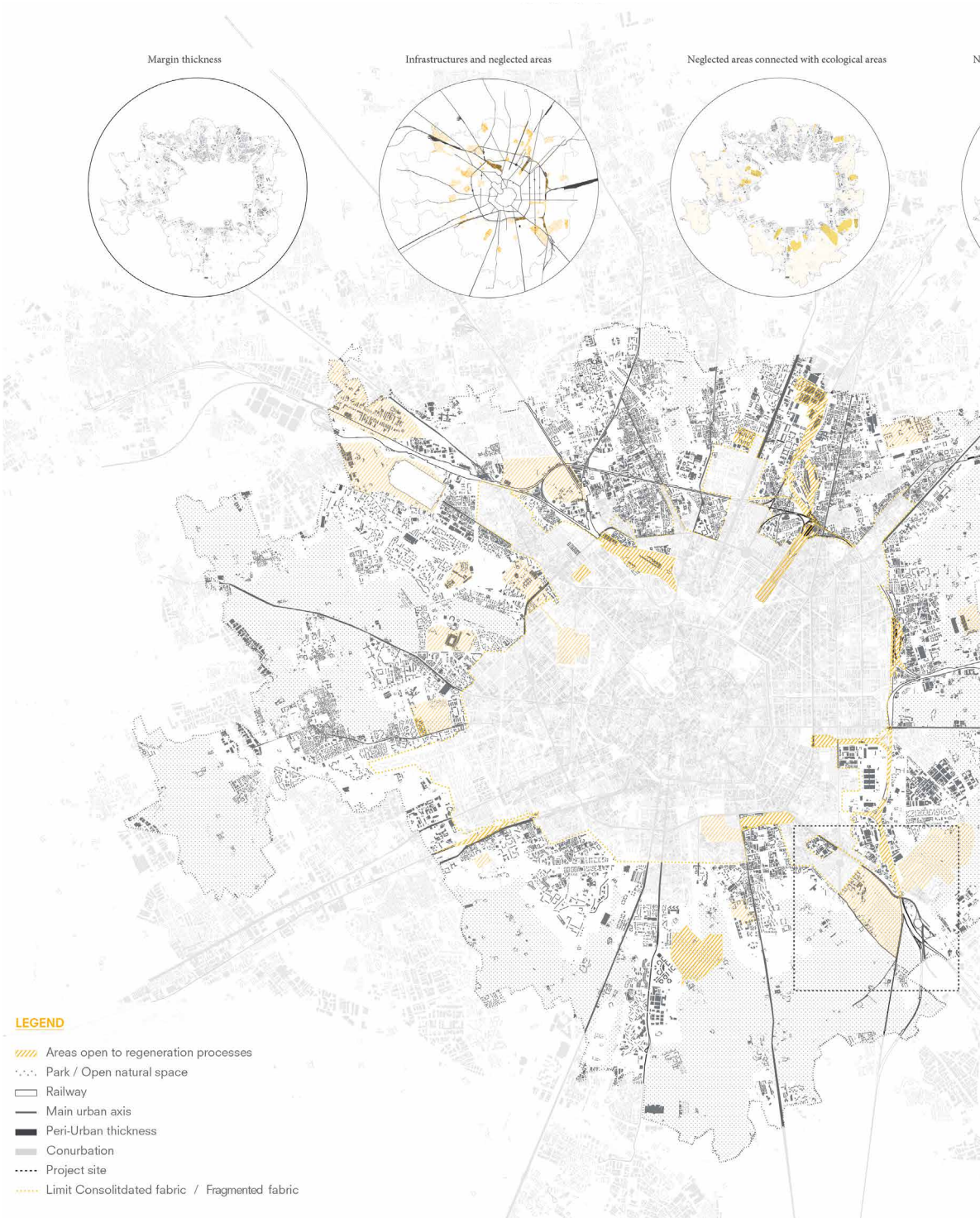



 **Fig. 5** – Geography of Modification (elaboration by the Authors).


to abusive productive areas) (Fig. 3; Fig. 4). In this phase, the issues were tackled in a pragmatical approach, through design solutions collected and mediated from a bibliographical and consolidated research of previous case studies.

After the publication of the NEB initiatives, with the promotion of its themes the research has brought forward the topics. In this second step of the presented project, the theoretical and bibliographical background is no more to be intended as *ex-ante* to shape design solution. Instead, an *ex-post* critique of the project led the authors themselves to a reformed theoretical position.

The project is considered as an essential tool for the prefiguration of this kind of practice-based research (Blythe, van Shaik, 2014), a tool that can immediately test architectural and landscapes prefigurations of marginal areas within a wide frame of issues/possibilities (Schön, 1983). The physical transformation of territories needed to be understood starting from a pragmatic and direct study of an urban/natural ecology.

Indeed, the design-driven research shows an immediate empirical reflection related to a theoretical horizon that lies beneath the project, where practice and theory cannot be divided. Rather, they are shared in a mutual relation within the project, and it is necessary to simultaneously approach both.

**Porto di Mare, a denied coexistence between fragilities and possible relationships**

Bernardo Secchi, in his article *Le condizione sono cambiate* (1984) imagined the contemporary city composed of hard and malleable fabrics, on which architecture and urban design could produce modifications.

Focusing on the city of Milan, we transposed these two categories by interpreting what could be inscribed in the condition of hard and malleable territory, composing a Geography of Modification (Fig. 5). This process has been the starting point that helped

**Fig. 6** – Aerial View of Porto di Mare Fringe (elaboration by the Authors).

revealing which urban fabrics were open to modification. Often neglected, those spaces are composed of abandoned artifacts and urban voids, railway yards, places that once characterized and structured portions of the territory and which, today, are open to new interpretations. Alongside these spaces, figuratively imagined as dead nodes of urban network, we found a sequence of marginal areas of recurrent characteristics. These intermediate places seem to be disconnected from the city and overlook large open spaces, which recall untwisted threads, open terminals of the urban network, and lost spaces between the city and the open space.

Part of this system is Porto di Mare, a hinge between the urban fabric and the rural area of Parco Agricolo Sud, and characterized by a stratification of unfinished projects for the commercial harbour for the city of Milan, that have left permanent scars on the territory (Fig. 6). Nowadays, it presents several recurrent phenomena of fragility that impact both the social and the environmental balance affecting the possible co-existence between space, nature and society. The area runs for 1.5 km and in a polluted industrial settlement, between a dense social housing context and the open countryside. There are buildings in a state of neglect that appear as 'urban skeletons' invaded by phenomena of crime and decay, circumscribed by infrastructures with different speeds: the motorway junction, the Rogoredo railway station, and the disused railway branch toward Chiaravalle. The main street shows the closeness of its fronts: nature takes possession of human artifices; humans colonize spaces and illegally cement them, giving life to a syncopated rhythm in which spaces, fences and barriers alternate. Concrete bricks and the locked gates surrounding the former harbour follow one another with rural trees and brambles, which partially hide the factories, packaging companies or waste disposal companies. A chaotic and visually impermeable settlement, leading to a "sfarinamento dei luoghi" (Becattini, 2016). Beyond the fronts, among the fences, emerge the everyday objects that are no longer useful; metal sheets, scraps, and remains of human activities are abandoned at

**Fig. 7** – A Persistent Fragility: States of Degradation (elaboration by the Authors).

the property border, accumulated in interstitial spaces of passage, or wrapped in brambles and creepers. These remains show an evident exploitation relationship, settled over time, between the presence of the man-worker and the productive landscape, between the man-visitor and the park with nature trails (Fig.7). The mixture of abandonment, unregulated construction, illegal building and pollution have left scraps and skeletons of structures. The advance of the forest, due to the lack of care on the part of the community, is chaotic and pervasive. Each element is in proximity but seems to have developed autonomously, building limits and barriers, denying the possible process of co-evolution of architectures and landscapes.

However, it is a place of immense potential, not only in its physical representation (the forms of architecture) but also in investigating the possible relationships it can foster. Therefore, the response to the fragility of the territory is a project that dialogues with the surrounding territory, reaffirming an identity.

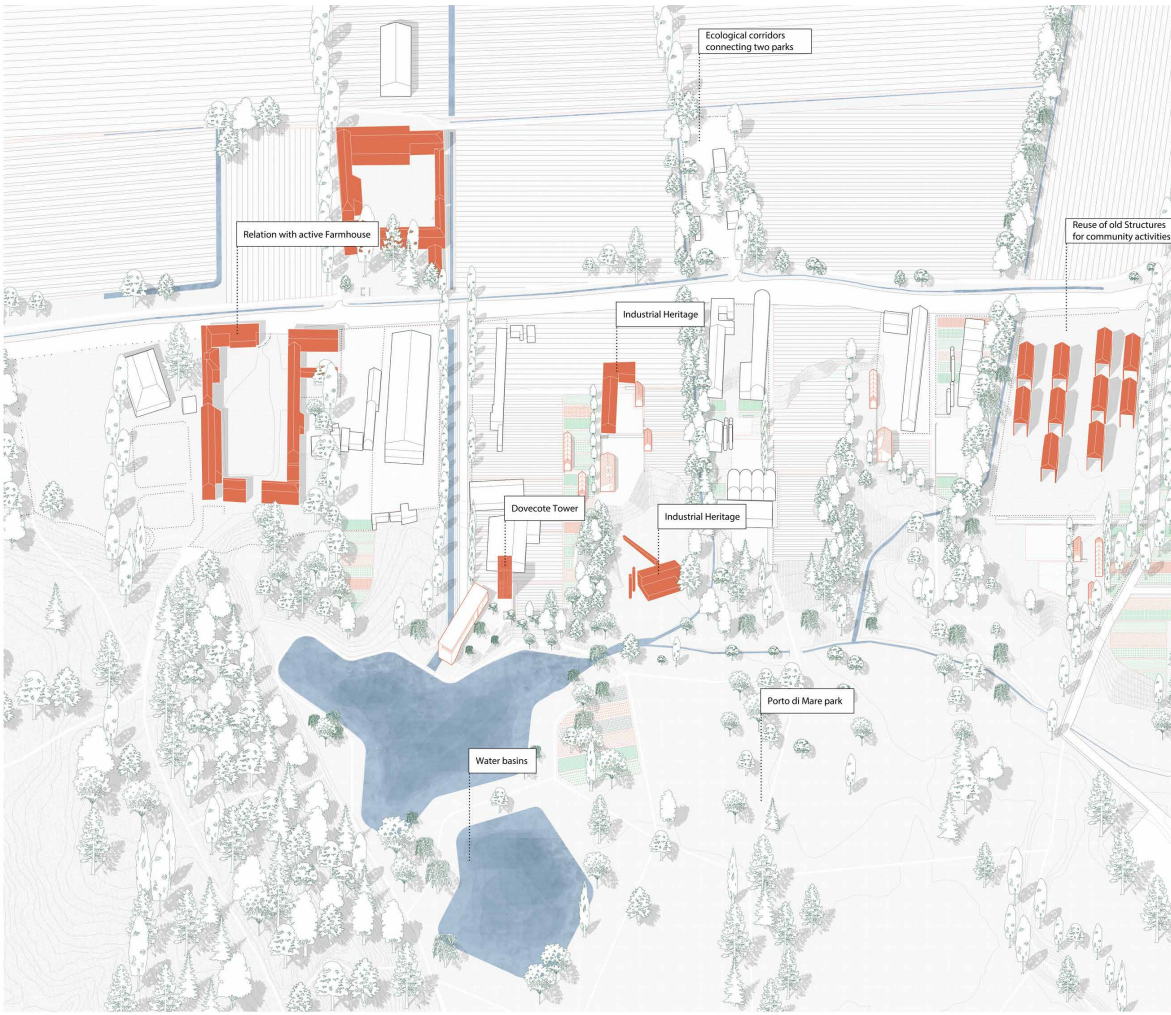



**Fig. 8** – Masterplan of Porto di Mare (elaboration by the Authors).

**Shaping a renewed territory**

The current polluted industrial area where spatial and social inequalities overlap, requires a reflection on the relationship between social and spatial models (Stiegler, 2019; Bulkeley, 2013) investigated through the design action for the area. The necessity of dismantling some of the industries set up the urgency of identifying a series of key objectives that could highlight the sustainable transition of the territory, translating values of climate resiliency and social equality.

This is achieved through a spatial strategy aimed at creating a resilient landscape, enhancing the green leftovers, the reuse of structures, and the implementation of social services, producing a renewed harmonious relation between nature, industries, and citizens. This scope foresees a new aesthetic of the rurban territory, making closer local communities and restoring the area's natural capital (Fig. 8). Therefore, a resilient, shared regeneration methodology that fosters a renewed practice of co-existence between nature, society and physical space,


involves both tangible and intangible values, able to promote a physical transformation, but also a socio-cultural one tackling the architectural, spatial, environmental and social transformation simultaneously.

The reuse and recycling of former structures, partially abusive and built with polluting materials, is brought forward through the promotion of a circular approach (Cheshire, 2016; Ellen McArthur Foundation, 2013) in the redesign of neglected spaces into a new social hub for the community, from an industrial area into a dynamic space for the city. Moreover, buildings contribute to the general image of the place, using local materials such as bricks, reused wood, etc., and are framed as instruments to reinforce ecological connections, preserving the life and the landscape itself, as exemplified by the placement of a dovecote tower (Fig.9), tipical construction of local rural environment.

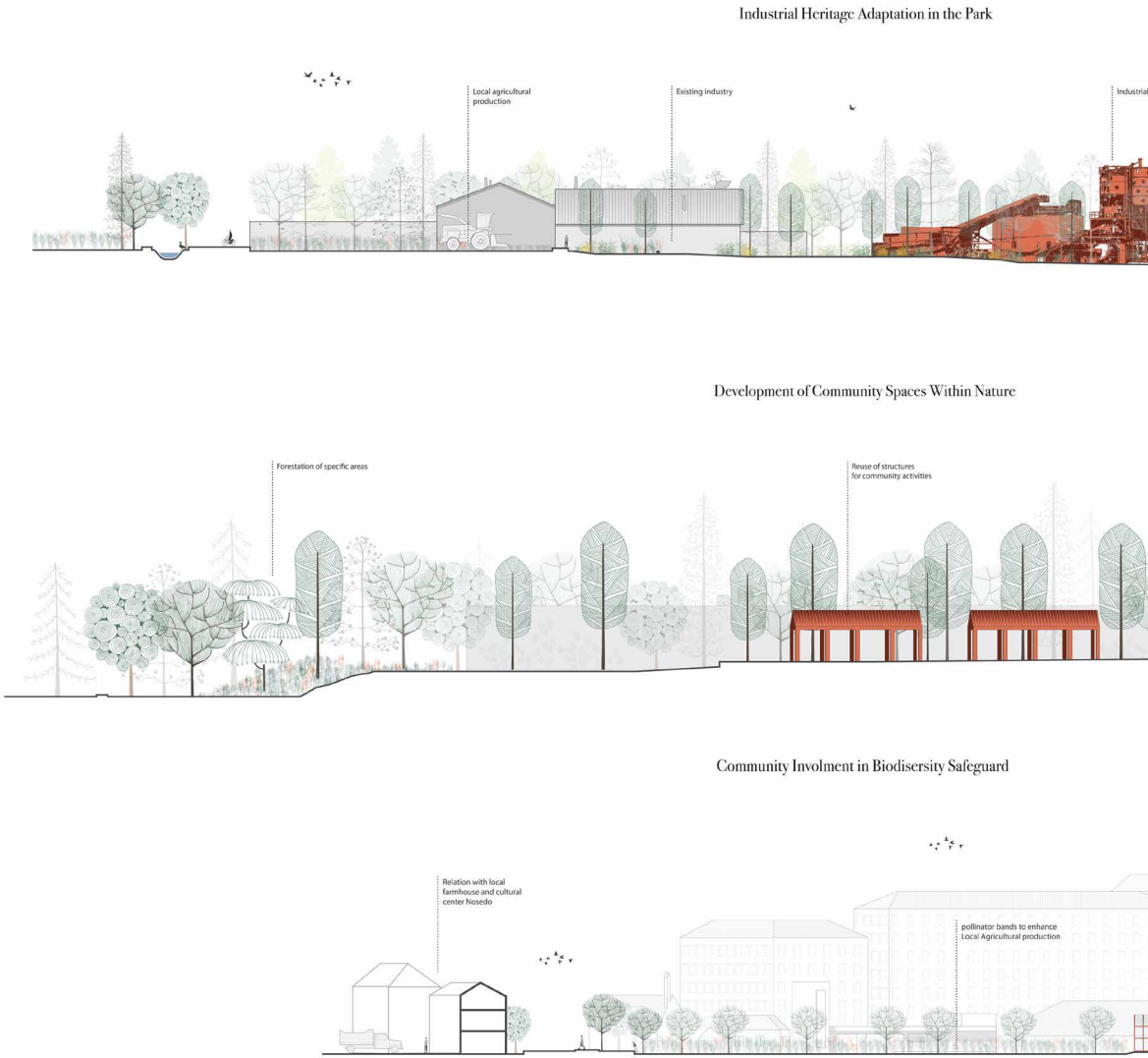
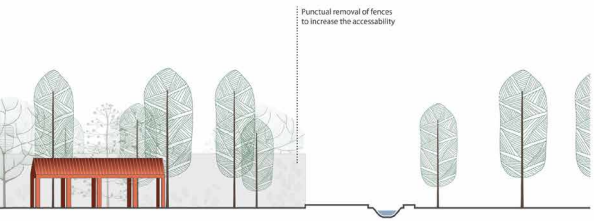
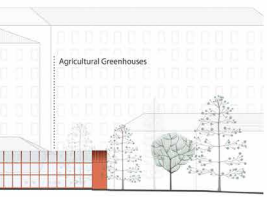



**Fig. 9** – Territorial Sections (elaboration by the Authors).

At the same time, the project wanted to investigate how the use of nature-based solutions (NBS) could affect the reclamation of a polluted territory and increase the urban biodiversity. This process is pursued using local species of vegetation, able to restore the natural capital of the area, connecting the industrial landscape with nature, implementing green corridors, and increasing the possible social value of this portion of the territory (Biddau, Marotta, Sanna, 2020).

The project shows how implementing ecological corridors, and the re-naturalization of some former industrial areas could generate a new landscape (Hosey, 2012). To achieve this objective, the first action is the identification of design areas, working on the possible relation between active factories,


in the form of industrial heritage adaptation, dismissed spaces to be reused, and the necessity to boost the ecological potential of the site, providing ecological corridors between the case study area and the countryside. The project suggests a strategy for the ecological regeneration, using natural elements as a design tool (Eekelen, Bouw, Shapiro-Kline, 2021). Indeed, an abacus of trees and flowers (pollinator bands) represents a nature-based solution set to reclaim the polluted soils and facilitate faunistic repopulation, thus highlighting the ecological role that the project could envision. The architectural action is focused on the shaping of open green spaces, selecting specific areas to implement actions of forestation, where the ecological role of the project goes beyond the architecture

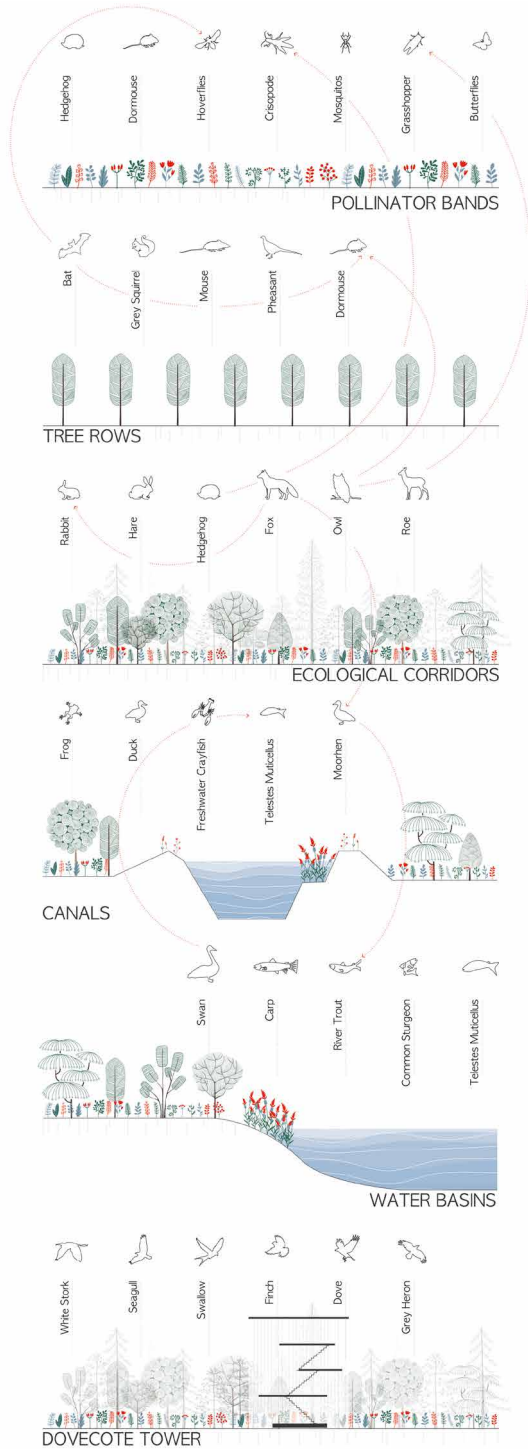



**Fig. 10** – Reconnecting Ecological Habitats (elaboration by the Authors).

and entangle the wildlife and the biosphere of the fringe (Fig. 10).

Designing with NBS, indeed, goes in the direction of increasing the presence of local fauna (Stabinsky, 2021), such as birdlife and pollinator insects, which promote a renewed biodiversity at the city's margin, where the experience of space relates with a new sensoriality of nature and the remaining productive buildings. In this perspective, the project aims to define a new ecosystem in which the landscape blends natural elements with the built environment. The nature-based solutions, such as the implementation of ecological corridors, seem to outline an emerging aesthetic connected to the *Tiers Paysage* (Clément, 2005) concept, defining a connection between regeneration processes and environmental urgencies. Hence, the role of nature overcomes the technical solution, reflecting upon a new landscape between rurality and urbanity, making the user and the environment closer and configuring the project as a resilient system for the territory (Natstasi et al., 2018). Finally, the regenerated landscape relates to the rural aesthetic, currently fragmented and polluted by the abusive industries built in the second half of the XX century. In these terms, the project serves as a pioneering prototype for the periphery, where productive plants, fragmented fields, and historic farms could merge. The final scope is a territorial repair, assumed to systematize the areas with the context, to reactivate social dynamics and the metabolic cycles, and to produce co-existence practices of territorial care. Hence, together with actions on the spatial feature of the site, the project develops a transversal action where social inclusion and engagement are at the centre of the transformation, with the idea that a process of restoration of the territory could happen only through active involvement of communities, building local knowledge (Becattini, 2016) and a sense of caring (Tronto, 2005) towards self-reliant communities (Shuman, 2000).

To do so, we propose implementing social activities connected with nature; among others the realization of urban gardens dialoguing with the close Cascina Nocetum, becoming spaces of learning and experimentation, as well as of dialogue. By fostering the construction of these spaces, the project aims to promote a shared urban culture – based on collective values, on the coexistence with other people, species and nature, encompassing the notion of diversity and multiplicity. Accordingly, this local rural community works to give equal opportunities to migrants and fragile people integrating them into the social fabric. Thus, inclusiveness is framed as a design action among people and spaces to have cultural and social needs at the core of the project.

Moreover, to combine socio-ecological actions with local communities, the project proposed the organization of self-construction workshops, where the recycling of materials could serve as a possibility of social engagement for co-creation processes. In this sense, the involvement of vulnerable groups could foster an inclusive regeneration, that considers their needs and uses of space, by giving birth to a strategy that takes shape within neighborhoods in "a communal enterprise", taking up the definition of architecture as "spontaneous and continuing activity of a whole people with a common heritage, acting under a community of experience" proposed by Pietro Belluschi (Rudofsky, 1964, pp. 3-4). This is also achieved thanks to the possible relationship with local organizations that could take part in these workshops.

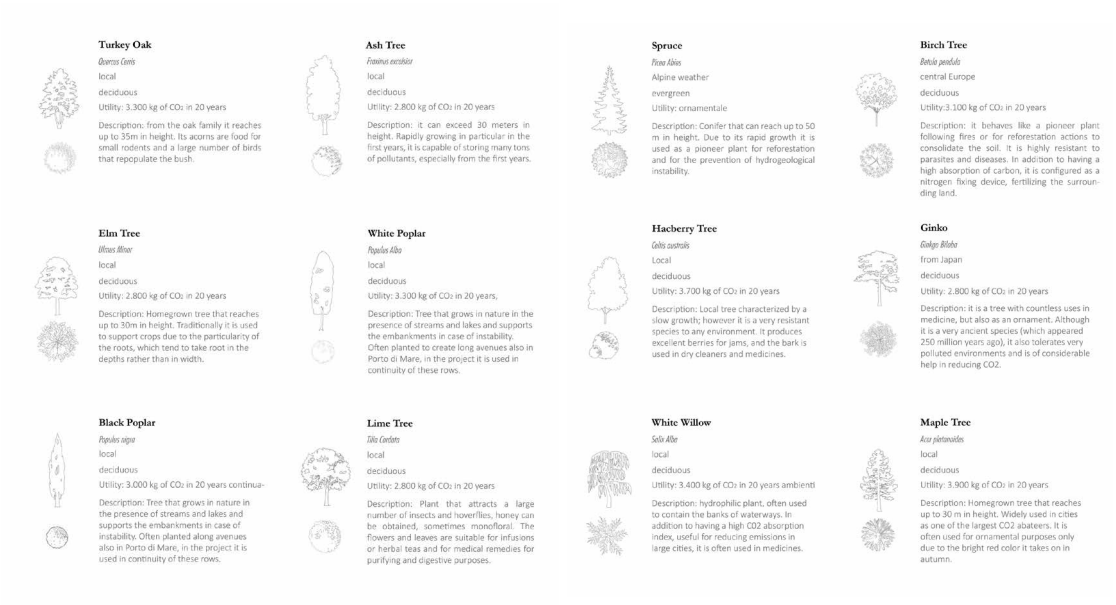
The citizen participation and engagement processes are thought to be a fundamental part of the regeneration. "These values refer to an ethical dimension of architecture, which embraces the concepts of care (Tronto, 2005), for the environment and the community, of diversity within the ecosystem and the society, the right to the city and space and the need for ecological and social resilience." (Santus, Scaioli, 2021, p. 218). Indeed, only through active involvement of people there could be an effective act of social care of the site, reducing the current degradation and restoring a sense of identity. Architecture, in this sense, recasts this condition of co-existence and co-evolution of human and environment through time; where the project, in its complexity and with its body of knowledge, tools and techniques contributes to shape and articulate new territories and landscapes. The architectural project is therefore confronted with the design of open spaces, acting on the broader landscape system of the Milanese southern fringes, encompassing both formal stances and appropriation values, that contribute to frame this territory as a common good. A reflection upon this condition of co-evolution among nature, man and architecture in a design perspective is strongly indebted with the notion of landscape as stated by the European Landscape Convention. What guides the territorial transformation is a biunivocal relationship rooted in the local community who becomes culturally and spatially bound with the place.

**A design interpretation of co-evolution**

The project is based on the idea that sustainability, ecological and social values can be achieved only taking into simultaneous considerations: the effectiveness of the solutions applied; the aesthetic of the intervention, questioning the impact that sustainable strategies could have on projects; the social involvement, as a crucial element to generate an active and long-lasting sustainable project grounded in the community. Because of this relation, the whole project should be read through this triple-lens.

This synergy helps the project to develop a relationship between the productive spaces and a renewed natural value, working on constructing the image of the future city, both in terms of aesthetic and effectiveness of resilient actions. This means that the design action generates the capacity of the

## Abacus of local trees boosting air reclamation




## Reconnecting with nature - ecological corridors section

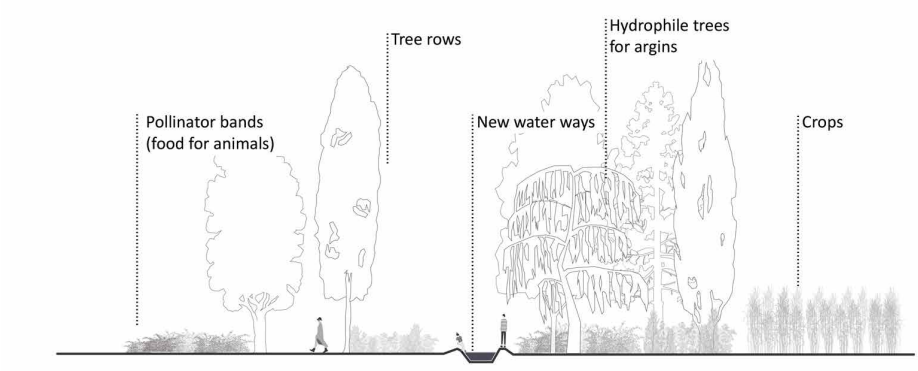



 **Fig. 11** – Beautiful. Local Ecology of Reconnecting with Natural Habitats (elaboration by the Authors).

territory to be adaptive for future stress; operating to achieve this aim, the proposed project considers an intermediate scale between the city and the single architecture to act on the local metabolism, allowing interaction with communities and generating an environmental impact on the southern fringe of Milan. Moreover, the design proposal applies NBS and circular strategies not as technical solutions, instead, as a systemic approach to increase local biodiversity and reinforce the ecosystem of the peri-urban Milanese area between rural/urban spaces, reducing the usage of resources.

The intervention is based on the vision that the project could be a tool to regenerate a polluted marginal area. The combination of nature-based solutions, circular economy strategies, and a social-sensitive approach hints alchemy that open to the possibility to repair and sustain the territory, in a co-evolutionary perspective (Benedict, McMahon, 2009). This shows the theme of regeneration as a growing and adaptive instrument, anchoring the project in its specific urban landscape, intimately entangled with the community process among the sites.

The implementation of nature, useful to create ecological corridors, and enhance the biodiversity of the urban fringe (Somarakis, Stagakis, Chrysoulakis, 2020), is also an essential element that could transform the aesthetic of industrial plants (Fig. 11). Nowadays, these present a set of neglected spaces that could be re-designed in an environmental adaptation perspective, working on the open spaces among the fabrics. Moreover, NBS and circularity are displayed choosing effective technical devices, but thinking to the specificity of the place, using local vegetal species, and reusing the local materials, to achieve an image of the project that could be rooted in the specificities of the territory. The application of circular strategies is essential to reduce the consumption of resources mitigating carbon emissions (Cottafava, Ritzen, 2021), but it is also a possibility to work with the local communities for activities that imply public participation (Shaw, Colley, Connell, 2019).

In these terms, people are more than users since they are actively involved in caring for the territory through their active participation in urban gardening, but also thanks to the creation of new places for gathering that could work as spatial platform for workshops (Fig. 12). This approach, both in its materiality and immateriality, aims at the construction of a local knowledge and a sense of caring for the territory, where, through the appropriation of a place, people can become a driving force in the regeneration of the area (Lepik, 2010) (Fig. 13), where the architectural and territorial project becomes a shared landscape.

To conclude, the project could be seen as an operative resilient design prototype, working as a synthesis of contemporary ecological values, exploring rurban spatial and expressive possibilities (Gandy, 2022). This is achieved through a design-driven approach, example of a methodology that could be applied in similar urban fragile contexts.

**A theoretical foundation toward a design practice**

Dealing with the topic of co-evolution and its relationship with the architectural and territorial design project means considering the raising fragilities of places and societies, working at the intermediate scale where the project deals with the design of open spaces, defining their physical presence and resilient capacity to be adaptive also interpreting the cultural imaginary of the climate crisis (Graham, Blanchfield, 2016). This also means identifying the places in which the development and growth of the past few decades has left scars and uncertain spaces. By working on the intermediate scale, the architectural project opens renewed possibilities of interpreting the co-evolutionary relationship between society and nature. This scale allows recasting the design of architectures and open spaces in a dialogue with the forms and in-

**Abacus of productive work places**

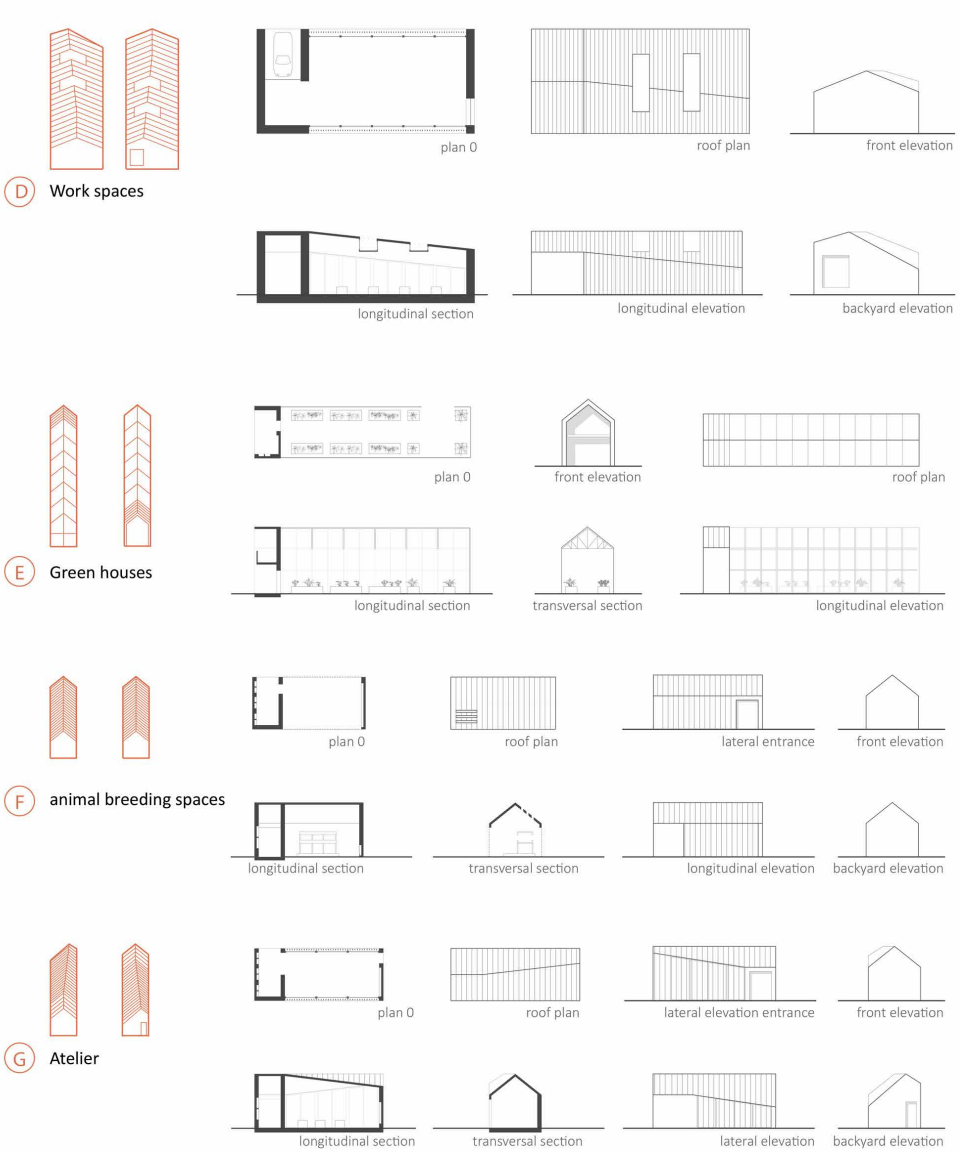
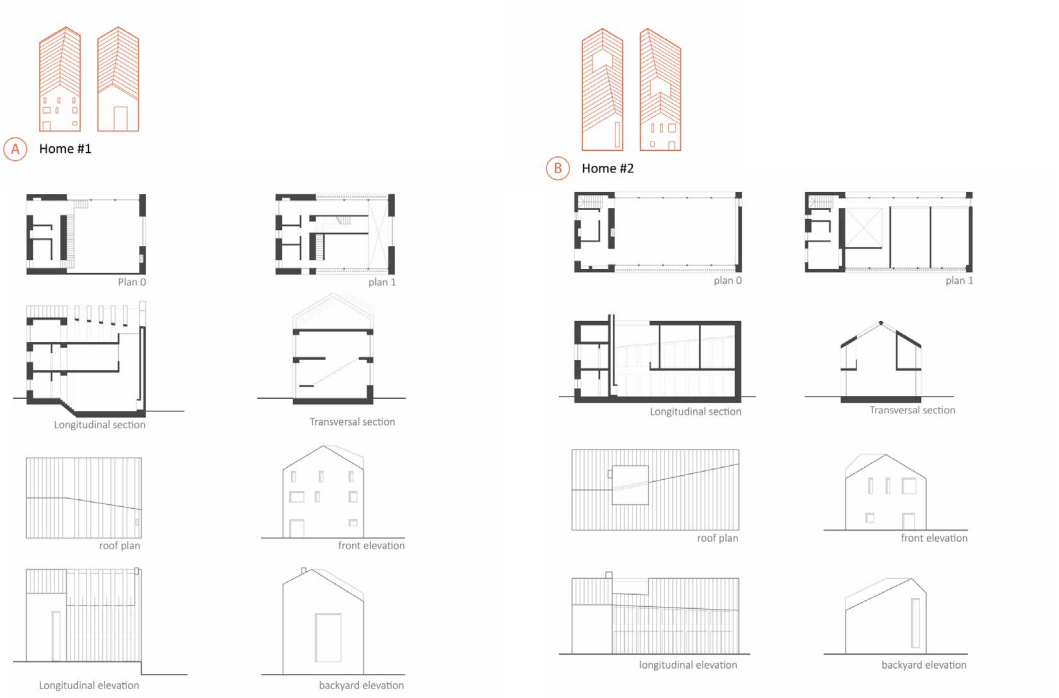



 **Fig. 12** – Sustainable. Local Ecology, Workshops and Rural Production (elaboration by the Authors).

## Abacus boosting biodiversity within productivity

| Arboreal Essences | | Step 1: to fertilise | | Step 2: to spread blooming | | | Step 3: for living | |
|---|---|---|---|---|---|---|---|---|
| | | Nitrogenising | Animal food | bees | Crisopodes | Hoverflies | Anti-mosquitos | Edible |
| |  Dill | ☐ | ■ | ☐ | ■ | ■ | ■ | ■ |
| |  False incense | ☐ | ☐ | ■ | ☐ | ☐ | ■ | ☐ |
| |  Lemongrass | ☐ | ☐ | ☐ | ■ | ■ | ■ | ■ |
| |  Coriander | ☐ | ■ | ☐ | ■ | ■ | ☐ | ■ |
| |  Achilea | ☐ | ☐ | ■ | ■ | ■ | ☐ | ■ |
| |  Antirrhinum Maius | ■ | ■ | ■ | ☐ | ☐ | ☐ | ☐ |
| |  Aquilegia | ☐ | ■ | ■ | ■ | ☐ | ☐ | ☐ |
| |  Aster | ■ | ■ | ■ | ■ | ☐ | ☐ | ■ |
| |  Calendula officinalis | ☐ | ■ | ■ | ■ | ☐ | ☐ | ■ |
| |  Helianthus Tuberosus | ■ | ☐ | ■ | ■ | ■ | ☐ | ■ |
| |  Sunflower | ■ | ■ | ■ | ■ | ■ | ☐ | ■ |
| |  Anthemis tinctoria | ☐ | ■ | ■ | ■ | ■ | ☐ | ☐ |
| |  Cosmos bipinnatus | ☐ | ■ | ■ | ■ | ■ | ☐ | ☐ |
| |  Carnation | ☐ | ■ | ■ | ■ | ■ | ■ | ☐ |
| |  Geranium | ☐ | ☐ | ☐ | ☐ | ■ | ■ | ☐ |
| |  Centranthus ruber | ☐ | ■ | ■ | ■ | ☐ | ☐ | ☐ |
| |  Lavender | ☐ | ■ | ■ | ☐ | ■ | ■ | ☐ |
| |  Agastache foeniculum | ☐ | ■ | ■ | ☐ | ☐ | ☐ | ☐ |
| |  Ajuga reptans | ■ | ■ | ■ | ☐ | ■ | ☐ | ■ |
| |  Lupinus albus | ■ | ■ | ■ | ☐ | ☐ | ☐ | ■ |

### Abacus architectures for living




### Reconnecting with local cascine culture - relation between buildings

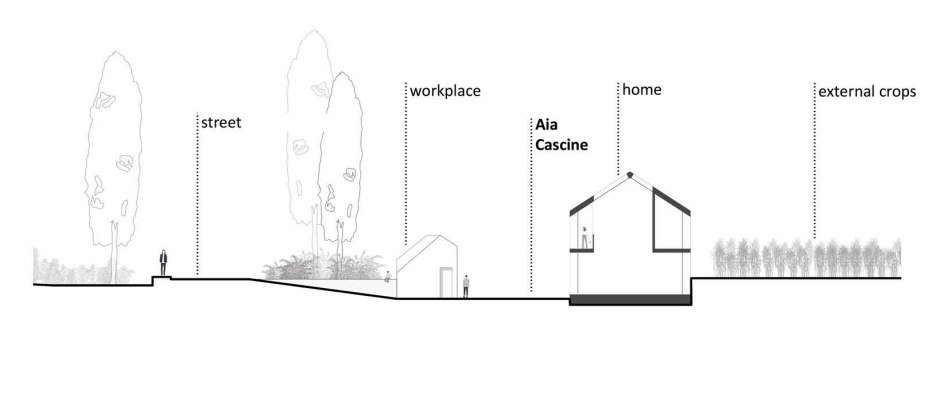
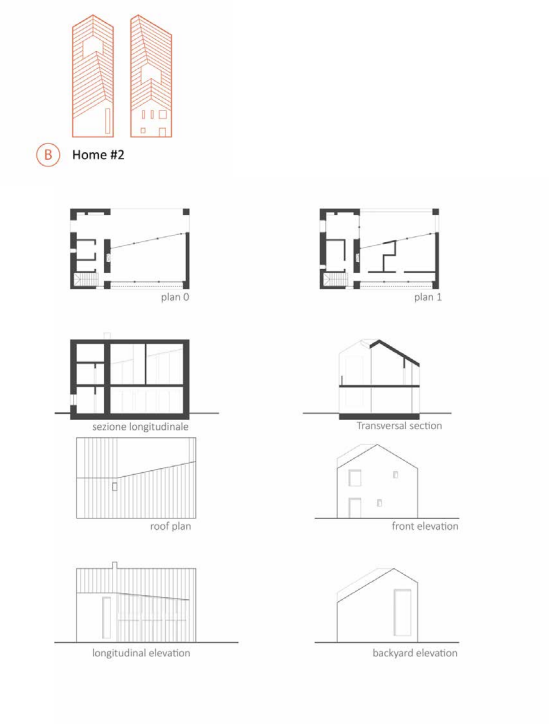



 **Fig. 13** – Local Ecology of building Inclusiveness (elaboration by the Authors).




stances of the landscape. Accordingly, this design approach brings to the foreground the physical characteristics of the landscape, along with cultural, social and heritage stances and with perceptual and aesthetic qualities. In this sense, this attitude towards the project in Porto di Mare, is indebted to a stream of research in landscape and territorial design that see in the project of Emscher Park a precursor, where the stratification and co-evolution of architectures and landscape, dismissed industrial sites and the preservation and valorisation of a local biodiversity contribute to shape the project. Moreover, the question of resilience, both social and environmental, becomes crucial in this discussion; where the project considers how the different cycles of people, nature and architecture which can be short or prolonged, unique or repetitive, find a synthesis in the project. Resilience is here intended as a form of adaptation and openness, a capability to face and react to the changing conditions of the place. Stressing the attention to the coevolutionary approach allows to design self-reliant territories, which have the intrinsic ability of regenerating and transforming themselves, without always relying to external interventions. The contribution becomes part of this reflection proposing a design-driven approach, assuming a conceptual position in the discourse between theory and practice (Schön, 1983). Reflecting on a co-evolutionary principle related to space transformation, necessary correlates a reflection on ethical-cultural values of the project, but also on its spatial configuration, on its uses and measures. The aim is to understand the value of this co-evolutionary approach, but also the form it assumes in space and its implications, both disciplinary and non-disciplinary. By critically observing the project, it echoes the words used by Jeremy Till: "This empathy extends beyond the human to the non-human, meaning we should see the world, nature, atmospheres, animals, geology, as interconnected living agents, and so treat them all with equivalent empathy. Creative practice is exemplary in understanding connections, operating iteratively and laterally." (Till, 2021, p. 36). Moreover, working on the urban fringes shows they can still be a fertile ground for design experimentations from which to set up co-evolutionary processes between urbanity and rurality. Therefore, these are territories where it is necessary giving meaning to both physical and social relationships. The design tools – the use of nature, circular economy and social-sensitivity are seen within the New European Bauhaus framework, contributing to experiment its spatial impact, guiding a pragmatic approach to research on the topics of territorial and social fragilities. In this scenario, architecture guides the process of

co-evolution, giving shape to theoretical instances, where the reflections produced through disciplinary tools and methods, opens towards other disciplines, giving an impact beyond the architectural field. The NEB becomes indeed a framework able to bring together tenets of spatial, environmental and social sustainability, where a research-by-design approach is crucial to ground the theoretical instances into practice and the other way around. To conclude, dealing with the topic of co-existence is not only about setting up the conditions of proximity, but also, and especially, about weaving the relations of reciprocal interdependencies and intersections among the design tools and their presence in space.

## Note

[1] The results of the first step of the research converged into a Master Thesis titled *City sides. Re-thinking Porto di Mare through design strategies of circular economy and resilience* with the supervision of Prof. Ilaria Valente. Further information about the result: Santus, K., Sartorio, S., Scaioli, A. 2022, *City sides. Re-thinking Porto di mare through design strategies of circular economy and resilience*, in Berlingieri F., Cavallo R., Corradi E., De Boer H. (Eds), *Design Action for Shifting Conditions*, TU Delft Open, pp. 164-169, <https://doi.org/10.34641/mg.24>.

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