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Experimenting with the New European Bauhaus Values and Principles in Urban Transformation



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Editors

Alessandro Deserti 
Department of Design
Politecnico di Milano
Milan, Italy

Emma Puerari 
Department of Design
Politecnico di Milano
Milan, Italy



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Preface

Cities are facing the issue of sustainable urban development: “Experimenting with the New European Bauhaus Values and Principles in Urban Transformation” provides a comprehensive exploration of eight diverse European sites, offering a unique perspective of urban change and development. This open-access book draws directly from the experiences of local organizations, activities, action researchers, municipalities, developers, and artists all working to embody and experiment with the New European Bauhaus foundations. Over ten engaging chapters, the book waves a comprehensive narrative around the Desire (Designing the Irresistible Circular Society) project, displaying lessons learned, and providing a window into innovative strategies for developing sustainable, inclusive, and beautiful urban futures. By unveiling these stories, the book highlights the importance of participatory processes, multi-level engagement and transdisciplinary approaches in shaping vibrant cities. The journey begins with an in-depth exploration of the Desire project, providing a nuanced understanding of the broader context of its experiments and research activities. This foundation leads to an examination of diverse approaches to achieving sustainable, inclusive, and aesthetically enriching urban transformations. Showcasing findings from an EU lighthouse project, this book not only highlights the transformation of eight urban sites across Europe but also offers valuable insights that can shape future policy, research, and the New European Bauhaus initiative. This edited book is therefore a fundamental reading for those interested in fostering a circular, irresistible society.

The work carried out by the Editors and Authors of this volume has been conducted within the framework of the project “Desire—Designing the Irresistible Circular Society,” which has received funding from the European Union’s Horizon Europe research and innovation program under Grant Agreement No. 101079912. Website: <https://www.irresistiblecircularity.eu>.

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desire an irresistible
circular society

Milan, Italy

Alessandro Deserti
Emma Puerari

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Supporting Transformation in Urban Areas: The Desire Project



Emma Puerari and Alessandro Deserti

Abstract This chapter presents the project *Desire*—Designing the Irresistible Circular Society—within the context of the New European Bauhaus (NEB) program, emphasizing how its goals align with the NEB’s core values of sustainability, inclusivity and aesthetics. As one of the six lighthouse projects funded under the NEB, *Desire* seeks to inspire a movement by developing a new school of thought, drawing inspiration from the original Bauhaus. Following a theoretical exploration of these guiding values, the chapter outlines the context and framework within which the *Desire* project operates. It highlights how the project translates NEB ideals into practice, shaping innovative and sustainable solutions to address contemporary societal challenges. The chapter concludes by introducing the concept of the “sites’ biographies”, which provide detailed accounts of the unique histories and contexts of the project’s sites of experimentation. These biographies set the stage for the in-depth discussions featured in the following eight chapters of the book.

Keywords New European Bauhaus (NEB) · Sustainability · Aesthetics · Inclusion · Societal transformation · European Transformation sites

1 Designing the Irresistible Circular Society

The New European Bauhaus (NEB) is a European program that focuses on sustaining transdisciplinary projects that interpret an original system of values and principles aimed at making the European Green Deal tangible for people and accompanying its implementation on the ground. The NEB seeks concrete changes that enhance our everyday life in neighborhoods and transform our living environments into more

E. Puerari (✉) · A. Deserti
Department of Design, Politecnico di Milano, via Durando 10, 20158 Milan, Italy
e-mail: emma.puerari@polimi.it

A. Deserti
e-mail: alessandro.deserti@polimi.it

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sustainable, inclusive and beautiful places while bridging the world of science, technology, art, education and culture. Its ambition is to tackle global challenges working at the local level with projects that create transformative pathways able to prioritize the quality and accessibility of places, regain a sense of belonging, introduce life-cycle thinking and circularity in the industrial ecosystem and reconnect cities and people with nature in a multispecies perspective.

Announced back in September 2020 in the State of the Union Speech, the development of the NEB was characterized by a participatory process that highlighted specific themes of interest: reconnecting to nature, recognizing a sense of belonging, prioritizing the places and people that needed the most and the need for long term life cycle thinking in the industrial ecosystem. Under the NEB, six Lighthouse projects have been funded, all serving as pioneering examples of sustainable, inclusive, and aesthetic urban development. These lighthouse projects, located across Europe, showcase innovative approaches to integrating environmental sustainability, social inclusion, and cultural heritage in urban spaces and aim to support the EU Commission with the development of policies that support the creation of a NEB movement [1].

Desire—Designing the Irresistible Circular Society, as one of these Lighthouse demonstrators, is a two-years project that started in October 2022 and aims to create a movement while exploring alternative ways of living, setting new standards for how urban spaces are transformed. The project supports the EU Mission “Climate Neutral Smart Cities” and the “EU Green Deal” by demonstrating ways to develop an irresistible circular society. Rooted in the fields of architecture, design and art, Desire focuses on reimagining how solutions are developed to address major societal challenges, such as biodiversity loss, climate neutrality and resource depletion.

The project has three operational objectives:

1. To create a learning environment rooted in the values, principles and approaches that inspired the original Bauhaus school. This environment fosters the creation of a learning community dedicated to aesthetic, inclusive and sustainable transformation.
2. To embody the NEB values through experimentations from eight diverse European sites, all under transformation and each representing different themes, geographies, scales and maturity in their processes. All these sites serve to the project as concrete examples of areas committed to experimenting with new approaches, methods, tools, contributing with their experiences to deliver the Desire lighthouse demonstrator.
3. To establish a scaling framework, including a co-created platform and digital infrastructure to boost the project’s impact across Europe. This framework supports a long-term shared value creation, stakeholders’ involvement and empowerment by connecting an international community of European municipalities, citizens and other stakeholders and by attracting substantial funding for the implementation of solutions.

In essence, all Desire activities set the foundations of a school of thoughts and practice, inspired by the original Bauhaus. It establishes a scaling framework for

the learnings drawn by on-sites experimentation coming from demonstration activities taking place in eight urban sites in Denmark, Italy, Latvia, Slovenia, and The Netherlands.

This book describes the investigation activities taking place within the project that relates to monitoring, assessment and learning activities and the experimentation taking place at each site under transformation, to draw lessons learned nurturing the NEB values and principles. The following section presents a theoretical exploration of the NEB values and principles. Then, the chapter continues with an explanation of the experimental and investigative activities run within the project. It concludes with presenting the structure of the subsequent chapters of the book.

2 The New European Bauhaus Values and Principles

2.1 *Three Values*

The New European Bauhaus (NEB) initiative emphasizes the value *beautiful* as a fundamental pillar in shaping sustainable and inclusive communities. Beauty in NEB is not merely aesthetic; it encompasses a holistic approach that integrates functionality, sustainability, and social inclusion [3]. Drawing from Porta et al. [4], beauty emerges from long-term processes in which citizens and various stakeholders continuously interact and shape the urban environment. Cozzolino [5] further emphasizes how beauty is not merely the outcome of a top-down planned and designed form but can rather emerge spontaneously from the interaction of urban agents through space and time. Starting from this concept of spontaneity, beauty is considered to arise from everyday actions and from a combination of formal and informal processes, rather than from pre-defined harmonious forms. This concept of “spontaneous beauty” aligns with the NEB emphasis on inclusivity, which aims to cultivate environments where people actively contribute to the development of aesthetically pleasant and sustainable spaces through collective experiences. By recognizing this collective character of beauty, the NEB encourages embracing this notion of “spontaneity” to move beyond design models that follow fixed aesthetics paradigms towards urban environments that reflect both community engagement and emergence. Therefore, such dynamic view on beauty fosters the development of environments that are adaptive to the co-evolving conditions that characterize complex socio-ecological systems [6]. Thus, beauty become essential to inspire the connections to the environment fostering a sense of responsibility and belonging [7].

Then, *together* emphasizes collective action and collaboration across diverse disciplines, sectors, and communities. The New European Bauhaus fosters co-creation and participatory processes in which different sectors work together to design sustainable and inclusive environments. Such a collaborative approach is essential to addressing complex societal challenges, as it combines different perspectives and expertise, fostering social innovation [8] and shared ownership of solutions [9, 10].

Embracing this value, means breaking traditional ways of working, often characterized by silos between sectors. This means connecting to the principles that are described in the next sub-section to operationalize this vision. Adopting a collaborative way of working across sectors aims to ensure that the emerging environment is more comprehensive, equitable and better suited to the needs of all individuals, particularly those that are usually underrepresented. Within the NEB framework, this value fosters reflections on the human-nature relationship, promoting designs that enlarge the usual human-centered perspective towards one that considers also other species, prioritizing ecological balance alongside social equity. This aligns with the growing field of multispecies design [11, 12].

The value *sustainable* integrates environmental, social, and economic dimensions to create resilient and regenerative urban environments. It highlights the importance of developing spaces and communities that minimize their environmental impact, promoting an efficient use of resources. Therefore, cities are seen as complex socio-ecological systems that should harmonize human and natural systems for long-term ecological balance [13]. Moreover, this NEB value aims to promote biodiversity and aligns with regenerative design principles, advocating for systems that renew their energy and materials [14]. Therefore, the need to close loops and developing circular systems is key to develop urban systems that could minimize resource depletion. To reach these goals a profound behavioral change is entailed. Within the NEB framework, creating a sustainable urban environment entails integrating awareness, education and participation into the circular model, fostering a culture that upholds sustainability in all its aspects.

2.2 *Three Principles*

The focus on employing *participatory processes* highlights the evident shifts from a world where science and governments depict future scenarios of societal transformation toward one that recognizes the crucial role that individuals and organizations play. Such shift recognizes the plurality of interests that characterize societal transformation [15]. Already since the 1960s, simultaneously to the rise of several activist and political movements, the fields of participatory design and urban studies, as well as of system innovation, started focusing on a communicative rationale where consultation with different actors played a significant role [10]. The Arnstein ladder [16] being one of the most famous and recognized representation of power shifts that occur when processes involve multiple stakeholders. Recently, co-creation has gained prominence, seen as a catalyst for positive effects, including creativity, effective change, and public sector reform [17, 18]. Co-creation empowers participants as active contributors, involving them in developing products, services, and systems, and shifting from mere consultation to collective action and self-governance. Hence, co-creation as a way of empowerment could be described as an outcome to be attained, rather than methods to be used [19].

Second, promoting *multi-level engagement* has been central to European policy, evolving into a multi-level governance system that fosters collaboration across various government levels, and stakeholders, including NGOs, lobby groups, and citizens [20, 21]. Originally applied to European cohesion policy [22], this system now influences diverse policy areas, distributing policymaking powers across supranational, national, and sub-national entities [23, 24]. Effective partnerships and synchronization among different administrative levels are crucial [25], referred to as an integrative way of working [26], particularly for addressing grand societal challenges like climate neutrality, ensuring comprehensive and integrative governance. Within specific governance levels, this implies sharing power and decision-making responsibilities among departments and actors, i.e. horizontally. This horizontal aspect has been the subject of several synchronization and communication systems [27]. However, within multi-level governance systems vertical cooperation among actors and sectors relies on different levels. Therefore, multi-level systems are intrinsically entailing to push organizations, entities, governments and institutions to establish networks of organizations of diverse nature that operate at different levels [2].

Third, adopting a *transdisciplinary approach* involves integrating knowledge from various disciplines and sectors to address societal challenges. Unlike multi-disciplinary or interdisciplinary work, transdisciplinarity [28] emphasizes cross-pollination of knowledge from different fields and organizations, leading to integrative solutions with societal significance. This approach aligns with triple and quadruple helix innovation models, which focus on collaboration between academia, industry, government, and civil society [29]. The call for reconciling society with nature connects to the idea of extending the above-mentioned models further towards a quintuple helix [30] that incorporates the natural environment, emphasizing the need for diverse actors to engage their design capacities in addressing complex challenges. Individuals, organizations, businesses, public entities and authorities, voluntary associations, etc. have already been recognised as (design) capability holders when it comes to responding to complex challenges [4]. When connecting to the natural environment the approach to working with different capabilities is yet to be fully explored, i.e. acknowledging a more than human perspective.

3 Forging the Foundations of a School of Thoughts

3.1 Context of the Experimentation

The eight urban transformation sites subject of the experimentation within the Desire project are rooted into diverse socio-cultural, political and economic contexts. Three sites are placed in Denmark (Gadehavegaard, Kalundborg and Herlev), two in Italy (Cascina Falchera in Turin and MIND in Milan), one in Slovenia (BTC City, Ljubljana), one in Latvia (Zjepju, Riga) and one in The Netherlands (Wildemanbuurt in Amsterdam). Since five different Member States across the EU are represented, it

is important to consider that urban transformation and regeneration may be understood differently across these sites. Urban transformations have been characterized by very different processes in these countries resulting in very different understanding of values and narratives of change across the local communities taking part to the transformation. It is therefore essential to recognize that transformation processes are not necessarily positive concepts. In many cases, these could come with frustration, fear of the future, and subjection to top-down planning processes [31]. Additionally, a deeper understanding of what transitions toward sustainability and transformation entail for everyday life often reveals that communities may resist the needed changes. This resistance highlights the complexity of big societal shifts, as they challenge established norms, practices, values and beliefs. Recognizing this, the European Commission has pledged to make the “transition acceptable” to ensure broader public support and participation in the process [32, 33]. Moreover, different countries may vary in their readiness to socio-ecological change carrying different welfare models and differing in challenges and opportunities when it comes to changes in behaviors, socio-economic structures, market and consolidated patterns.

Moreover, the eight sites are of very diverse geographical scales, level of maturity in their transformation processes and address different themes, issues, challenges and target groups. The partners operating on the sites last from initiatives that are operating already since decades (i.e. the NGOs operating in Wildemanbuurt) to some that started operating within existing transformation sites at the beginning of the project (i.e. Cascina Falchera). Some operate on small areas or on a few buildings (i.e. Herlev) and others that deals with transformations happening on areas of millions of square meters (i.e. MIND, BTC City). Therefore, the meaning of Desire might change from site to site, representing a small piece of a long-term journey or being the initial boost to explore and imagine desirable futures.

3.2 Desire’s Framework

To address the complexity and diversity within Desire, a flexible and adaptable framework has been designed to be able to compare such diversity along several dimensions (see Fig. 1). This framework serves the purpose to create a learning environment that could scale Desire’s experiences and lessons learned towards a broader impact at the EU level, forging the foundations of a school of thoughts. Moreover, it supports the site experimentations in embodying the NEB values in their plans, activities and learning throughout the project. The framework acknowledges the different levels that the project touches upon from the micro-level of the experimentations to the meso-level of the outcomes of the project, up to the macro level addressing the New European Bauhaus initiative. These levels do not stand alone but rather are strongly interconnected and influence each other by the development of continuous feedback loops between complex interconnected dynamics.

The framework is represented by three levels (micro-meso and macro) that are represented by three verbs: DO, ASSESS and EMBED.

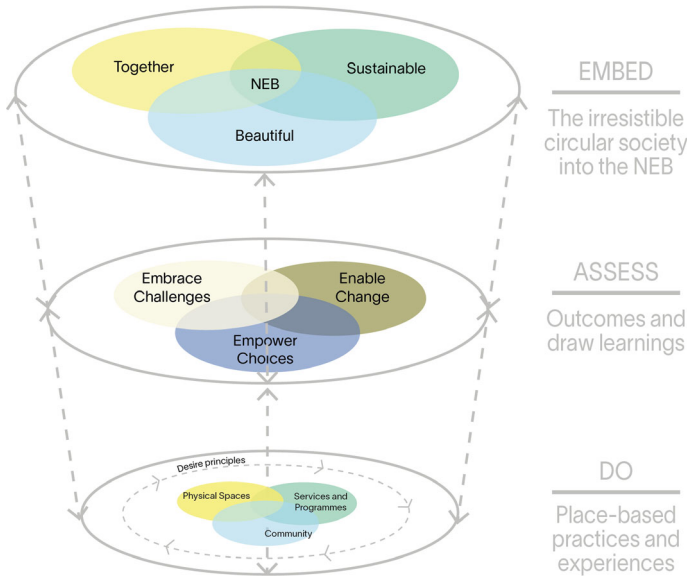


Fig. 1 Structure of the desire’s framework [34]

The micro-level (DO—place-based practices and experiences) concerns the activities planned and delivered within the experimentation of the eight transformation sites. Each action has been monitored through the specific inputs and outputs produced. At this level, the experimentations primarily concern three design components: “physical spaces & infrastructures”, “services and programs” and “community”. These components serve as the foundation around which the sites have been organizing their activities. Moreover, this level is concerned with the co-creation of a set of project principles (e.g. aesthetic, circularity, biodiversity, movement and belonging) to be verified in action.

The meso-level (ASSESS—Outcomes and draw learnings) is set to draw learnings from the experimentation, monitoring and assessing the outcomes emerging from the different contexts and local practices. The observed transformations relate to relationships, behaviours, organizational and governance aspects, etc. This level entails three dimensions: “embrace challenges”, “empower choices” and “enable change”, under which the outcomes of the experimentation are extracted to draw lessons learned at the project level.

The macro-level (EMBED—The irresistible circular society into the NEB) is informed by the DO and ASSESS levels and it is attributed to the project’s results that Desire will bring into the NEB perspective to influence its future development. Through this level Desire aims to support not only the NEB but also other Missions such as the EU Mission Climate Neutral and Smart Cities. The three levels are thus strongly related and linked by constant feedback loops that Desire supports with its activities that are further detailed under Chap. 10 of this book.

4 The Sites' Biographies

The next eight chapters of this book deep dive into the experiences of the different Desire's sites. The direct protagonists of the experimentation narrates the work carried out under the project. These chapters represent case studies, in which successful practices and learnings are narrated sustaining the "lighthouse" nature of the project, representing transformations that could lead towards an irresistible circular society. These stories allow to contextualise the experimentation into the diverse settings, producing data on the micro-level dynamics of the overall project and providing a common ground for the comparison of the experimentations that it is subject of Chap. 10 of this book. The contributors were provided with a basic template to structure their story. Such template asked to include a list of components. First, contextual information on the socio-political context of the site, its geography and level of maturity of the transformation and the issues characterizing the site. Second, a description of the challenges that the sites addressed. The sites were free to organize these under the umbrella of the three design components of the DO level (see Fig. 1) or not. Third, a description of the site experience and the related activities. Here, the authors were free to decide whether to organize their discourse around the three dimensions of the ASSESS level (see Fig. 1). Finally, a description of the key learnings they could draw from their experiences.

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Fostering Citizen-Led Projects Through Multi-level Engagement in Wildemanbuurt, Amsterdam



Diana Krabbendam, Emiel Wolf, Bernie Deekens, Rosalie Bak, and Hans Krikke

Abstract This chapter outlines the activities in the Wildeman neighborhood in Amsterdam, undertaken within the context of the New European Bauhaus project Desire by two organizations, *Samenwonen-Samenleven* and The Beach. It starts by describing the local context, including new policies and developments that are taking place. The main challenges are identified. Firstly, there is a lack of trust and feeling of community. Inhabitants are not being involved and do not feel ownership in the developments happening in their neighborhood. Additionally, existing community activities and services are fragmented. Several activities that attempt to deal with these challenges are then discussed. These activities include integration of and reflection on the methodologies of the two participating organizations, engagement and organization of informal networks, and the creation of Design- and Do-groups (*Ontwerpen Doe groepen*). These groups composed of residents, focused on designing and implementing interventions to improve the area. Each group took on a specific topic: community gardens, youth education & media, healthy relationism, circular waste processing, local coffee & tea distribution, and circular street fashion. Lastly, the results and learnings from this process are presented.

Keywords Civic design · Community empowerment · Design and Do groups · Boundary spanners · Just transition · Co-design

D. Krabbendam (✉) · E. Wolf · B. Deekens
Stichting The Beach, Notweg 38, 1068LL Amsterdam, The Netherlands
e-mail: we@thebeach.nu; diana@thebeach.nu

E. Wolf
e-mail: emiel@thebeach.nu

B. Deekens
e-mail: bernie@thebeach.nu

R. Bak · H. Krikke
Samen Wonen Samen Leven, Chris Lebeaustraat 4, 1062DC Amsterdam, The Netherlands
e-mail: h.krikke@sw-sl.nl

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1 The Wildeman Neighborhood

1.1 A Community Striving for Transformation

The Wildeman neighborhood is situated in Nieuw-West, a part of Amsterdam that was built in the post-war period and is a prime example of urban design of that time. It has small shops such as bakeries, food and groceries stores, large apartment building blocks of 3–4 stories high with green space in between them. The neighborhood houses around 5000 people, many of them elderly, children and teenagers. The Wildeman is home to large families living in small, old and moldy apartments. It also has a bad reputation, being framed in Dutch media as a problem area full of criminals. It is true that the area suffers from an accumulation of problems, such as poverty, poor housing, insecure employment for residents, nuisance and crime. These problems are multidimensional, like health problems being related to underlying problems such as debt, moldy houses and low literacy. Many feel forgotten by the municipality and social housing corporations who make plans and promises but do not end up delivering. As a result, trust in institutions is low. However, there certainly is more to Wildeman than problems; it is a place where people come together and make things work, despite the challenges that they face [1]. The population is very diverse (75 nationalities and even more different cultural backgrounds), and the cultural knowledge that people carry makes the Wildeman a unique place for urban farming and community projects. There is an extensive informal network present of NGO's and citizen organizations with great willingness from residents to improve the prospects for their neighborhood. Two of the main networks of local initiatives are the WESHARE coalition and the *Kracht van Nieuw West* (Power of Nieuw West). The first being a coalition between locally embedded organizations [2] and the second one being a dynamic collaboration between residents, social initiatives and local (cultural) entrepreneurs from Nieuw-West.

1.2 Two Partnering Organizations in the Area

Within the context of Desire two organizations work together as core team of the Amsterdam Site. The Beach and *Samenwonen-Samenleven* (SW-SL) are embedded in the area and housed in prominent community buildings. The Beach has been present in the Wildeman from 2009 and is located in a former garage, while SW-SL operates Station Wildeman—a former school—since 2022 and is the administrator for Perron 32 since '23 (Fig. 1).

As a non-profit organization SW-SL (that started as a citizen's initiative) works within the social domain and stands up for a social, just and sustainable society [3]. With residents' agendas as a starting point, they work on caring neighborhoods and connected communities. SW-SL does this in collaboration with many formal and informal stakeholders—through innovation, programs and in practice, aiming to be



Fig. 1 Garage Notweg (top-left), Station Wildeman (top-right), Perron 32

an activistic yet reliable and consistent partner for neighbors and organizations alike. As a cultural foundation The Beach focuses on local co-design (design with and in communities) [4]. The design approach of The Beach is based on the idea that our collective outlook is shifting towards more ecological and socially responsible lifestyles. It includes values like locality, proximity, connectedness, inclusion, human scale, sustainability, and sharing. For this local and collaborative design, The Beach developed new frames like “neighborhood ecology” and “sustainist design” [5]. Unique in this collaboration in Desire of both value driven organizations is bridging and merging the Arts & Culture and Social domains. With their collaboration the two organizations aim for the uptake of community led local development as a bottom-up approach to address and positively influence the multi-dimensional issues in the area. Practice often comes ahead of theory in this field, and NGOs such as SW-SL and The Beach play an important role in developing a transformative practice.

1.3 Relevant Policies

The Wildeman neighborhood is changing vastly and rapidly under the current redevelopment and densification plans that started in 2017 and are supposed to end in 2041 [6]. Some blocks have already been demolished but a lot about the future of the area is still unknown. For the second redevelopment phase, local government and housing corporations are establishing a dialog with local citizens about future housing and

the living environment in general [7], following the Dutch planning procedures and social policies. While usually more than fifty inhabitants are present at these meetups, the situation is complicated and dominated by strong opposite fractions and opinions where groups of residents are not represented equally. Looking more broadly at The Netherlands, the country has promoted citizen initiatives and social entrepreneurship in neighborhood redevelopment through collaborative urban planning, funding programs, and supportive policies. Policies like the “Right to Challenge” and the “Social Support Act” empower residents to propose and implement local projects, while government partnerships with social enterprises enhance community-driven regeneration efforts [8]. More specifically, in the city of Amsterdam, the recent Participation Regulation [9] made resident participation mandatory part of each redevelopment project. The Comprehensive Vision Amsterdam 2050 [10] incorporates informal approaches like into formal policy. Moreover, the National Program *Samen Nieuw-West Together* (NPSNW) is built around a covenant of local partners, which declares that for the next twenty years citizens will be in the lead of the transformations in the area [11].

1.4 Issues to Be Tackled

Wildeman is an active neighborhood where residents are working on reframing narratives around the area, overcoming negative discourses that are characterizing the neighborhood. The issues that arise within the neighborhood are related to the three design components: community, physical spaces and infrastructures and services and programs.

The first issue to be recognized is the development of trust within the existing community. Wildeman is characterized by many informal networks, active residents, action groups and organizations that are committed to “a better neighborhood”. Unfortunately, though, there seems to be little mutual involvement and insight into each other’s agenda—and thus distrust is an issue here. Existing relationships (and arguments) are already under tension and pressure from the outside—due to matters that are beyond one’s own responsibility, such as the area development plans, poverty, lack of opportunities and public space—further put tension on the relationships and networks present.

Secondly, most of the time the community is simply *informed* about current redevelopment plans, rather than involved in *co-creation processes* [12]. The Wildeman is in a constant state of transformation. Plans for the redevelopment appear to have been in place for a long time, but clear communication about these plans and the agenda of institutions are unclear and not accessible. Residents and local organizations do not feel included or heard in decision making processes. The engagement of the existing community is challenged by its constant change, with citizens having to move away temporarily or even permanently.

Moreover, because of densification efforts less and less space is available for the various active resident groups who would like to organize activities that positively contribute to the quality of life in their neighborhood.

Services and programs are unknown and fragmented. The neighborhood is buzzing with initiative, and new programs are set up on themes such as health and emancipation. The desire to work together and find each other is there, but the programs and initiatives are (often) insufficiently connected and there is a lack of transparency. Many programs are implemented top-down by institutions and are based on temporary projects and isolated problem statements, rather than larger interconnected concerns. Citizen participation may be the wish within these projects, but it is not anchored in the essence of the working methods.

2 Challenges

Within the Desire project, the Amsterdam Site is working with residents and stakeholders to tackle the above-mentioned issues by addressing three challenges. The Beach and SW-SL view these challenges as interconnected, with community being the central focus, and services and programs providing the supporting framework to ultimately transform physical spaces and infrastructures.

With reference to the community, the first challenge focuses around fostering a sense of agency and trust among residents, with the aim of nurturing *community-led initiatives* that drive neighborhood transitions. This involves ensuring that the local community takes a leading role in shaping its future. By the end of the project, the hope is that these initiatives will have firmly taken root, creating a self-sustaining cycle of community empowerment and development.

The second challenge seeks to enhance residents' ownership of *physical transformations* within their neighborhood, emphasizing the importance of cooperative engagement in planning and decision-making processes related to public and indoor spaces. This challenge aims to create a continuous dialogue about how urban transformations can contribute to a fairer and more inclusive living environment. By involving residents in these processes, the project aspires to establish a model of shared responsibility and collective action in urban development.

The third challenge focuses on developing a shared design and implementation of *programs, community services and activities*. Each participant, whether an individual or organization, develops their own initiatives within the framework of a joint annual program. By building such a framework all residents should be well-aware about who is responsible for various activities, where they occur, and when they take place. Such an approach fosters a sense of common purpose among residents, promoting the idea of "commoning" [13] where all community members share the benefits and responsibilities. The goal of taking such an approach is to serve as an exemplary model demonstrating the potential of civic design processes that are inclusive, participatory and transparent.

Taking up these challenges outline a comprehensive strategy for transforming the neighborhood through community-led initiatives, co-design of physical spaces and collaborative service production. The Desire project served to develop and accelerate the development of such strategy allowing residents to take actions, responsibilities and feel empowered in shaping the future of the neighborhood. How residents of Wildeman can take the lead and ownership in development of the neighborhood is the overall design question for the next decades.

3 Site Experience

3.1 Integrating the Strategies and Practices of Two Organizations

Current government and municipal policies attempt to encourage collaboration of the numerous civic organizations through specific funding mechanisms that favor collective approaches over individual (or single organization) actions. The Desire project allowed The Beach and SW-SL to start working together and develop a joint agenda. Therefore, a group of activities run by the core team of the two organizations was dedicated to developing such an agenda. These included: roundtables and workshops dedicated to aligning visions; workshops focused on exploring specific methods used by the organizations; one workshop dedicated to exploring further the outcome mapping methodology [14] used by Desire to ensure that all the actions included in the agenda are shared by the people and organizations working on the project and a “reflection” session half way of the project to reflect upon what went well or could be improved—in order to adjust and concretize plans for the next year.

Moreover, the core team participated in outcome mapping workshops proposed by the Desire partners working on the monitoring assessment and learning framework of the project. These three workshops marked milestones to reflect upon the implementation of the activities.

3.2 The Experience of the Design and Do Groups (Ontwerpen Doe Groepen)

The first step to implement the envisioned strategic agenda was the development of “Design and Do Groups”—Ontwerpen Doe Groepen—(ODGs). These groups have been proposed to achieve the above outcomes and to tackle local challenges together in consultation with those affected: the residents. That is how we started from local context and local actors developing and in the lead of codesign interventions. According to the vision of the core team the ODGs operate as independently as possible, based on their own agenda and assignment. The core team supports the

codesign process, connecting with relevant networks and to the objectives for the benefit of the Desire project.

The ODGs work towards a shared vision for the area and their projects. Over time the projects will be further elaborated. After the start, six assignments were formulated, four of which were taken up immediately by the so-called ODGs:

1. Wildeman Green—community gardens.
2. Peaceful Neighborhood—youth education mastering local media.
3. Healthy Connections—activities stimulating healthy relationships through breakfasts, dance events, garden gatherings and neighborhood journalism,
4. Neighborhood Economy (splitting up later into Circular Company Wildeman which collects and recycles bulky waste, Wild Pride who produce local coffee and tea and grow community through local distribution, and circular street fashion label Je-Zus).

ODGs determine the implementation of their programs, activities and events themselves.

Between the start of Desire and February 2024, the four ODGs developed their plans. Each ODG managed its own process, organizing workshops, public events, expert meetings, and communication efforts.

In March 2024, the ODGs collectively decided on the redistribution of funds, transforming the group “Neighborhood Economy” into three separate groups and adding a new ODG, ‘Neighborhood Facilities’, aimed at creating spaces and infrastructures for residents, was developed.

From March 2024 onwards, the ODGs held bi-weekly peer-to-peer reflection sessions that proved instrumental for facilitating connections with relevant networks and providing advice to policymakers and institutions. During the process the ODGs sought information and support from the core team as needed. This collaborative approach aimed to enhance community engagement ensuring that one specific ODG, the “Neighborhood Economy”, was identified as responsible for including residents’ needs and aspirations. By fostering cooperation among each ODG and involving various stakeholders the developed process strived to create sustainable and inclusive community.

The collaboration of the core team and ODGs and their roles were reviewed permanently as a collective learning process. Through the experience of the ODGs, citizens play a pivotal role in the development of community initiatives by sharing a common sense of purpose which aligns with their efforts. They hold agency over the developed co-creation process, ensuring that their voices, ideas and visions shape different projects. Through co-design and co-production citizens actively participate in developing and implementing solutions. Therefore, they act as enablers of impact, driving meaningful changes within their communities. Additionally, throughout the process they took the responsibility of being budget keepers, managing and allocating resources effectively to ensure the success and sustainability of their initiatives. Such collaborative governance approach empowers citizens and fosters a sense of ownership and accountability.

3.3 *Facilitating Multi-level Engagement as Boundary Spanners*

The two partner organizations, SW- SL and The Beach, from a shared vision: “We provide a neighborhood where residents form a close-knit community, feel ownership, are involved in ongoing transformations and work together to implement changes”. To implement this, the core team worked as boundary spanners [15] in between different types of organizations and governing institutions [16] Boundary spanners are individuals or organizations that boost collaboration and exchange between a variety of disciplinary or sectorial boundaries. Their role is essential in overcoming communication and practice barriers enabling the integration of diverse perspectives helping to navigate the complexity of multi-stakeholders’ environments, ensuring that knowledge and resources are effectively shared [17].

The Desire core team connected locally with the residents by establishing and supporting the ODGs. They organized a diverse set of activities:

- Organizing the launch event (November 2022).
- Developing a workshop for codesign and building trust (November 2023);
- Organizing a workshop for sharing plans and ideas between the ODGs (April 2023).
- Giving regular feedback to the ODGs (bi-weekly meetings).
- Helping the ODGs connecting actively to other networks (i.e. local stakeholders, other organizations, policy makers, etc.).
- Capacity Building by learning preconditional skills like fundraising, event production, branding, marketing, etc.

Secondly, the Desire core team connected to networks of organization present in the neighborhood area Nieuw West. These were for example the WeShare Coalition [2] and *Kracht van Nieuw West* [18]. The WeShare coalition meets monthly and share a Whatsapp group. Rather, the formal platform Power of Nieuw West develops programs like residents’ councils, meet & match events and a civic design community of practice.

3.4 *Principles of Design*

The Desire’s principles provided us with a set of principles *for* design. They have implications for the nature of the design process and the way we organize locally embedded design. We augmented the Desire principles by a set of guidelines for (civic) design in practice and in local contexts. In other words, we evolved them into local & common principles *of* design. Not as a fixed set of goals, but as principles to guide us towards local and common design practices. To do so we included “how” and “with whom” in the design process to move forward and enable real change.

Finally, the Desire core team has a crucial role in connecting all these initiatives to the National Program *Samen Nieuw West*. Throughout the Desire project also the ODGs themselves started participating in the meetings with the representatives of the National Program connecting directly with policy makers. A milestone of this evolving connection has been the Samen New-West event, taking place on October 4th, 2023.

Within Desire SW-SL and The Beach took roles as boundary spanners by expanding networks, resources (expertise, facilities, funds), by critically developing civic design that incorporates local and common values, and by bringing together sources in the codesign process. The team empowered the ODGs in taking ownership in the process, indicating opportunities and concerns. Moreover, a crucial milestone of becoming incubators to support the future development of the ODGs' initiatives was transferring them the ownership of €25.000 to organize their initiatives. The Desire core team have been activists on behalf of residents and ODGs to the current policy makers and national program as well as to the Desire consortium and the NEB community.

4 Results and Key Learnings

The Desire demonstrator in Wideman took on interconnected challenges using different, interlocking, methods. With the introduction of the ODGs, the Wildeman has gained a leading force that works towards a co-created neighborhood that incorporates values of all its citizens, in which citizens get to know each other, and work for a better and more communal neighborhood. By sharing experiences through practices and meetings, citizens learn to acknowledge the value of each other's activities and understand the context in which they are working developing a sense of belonging to the place.

The Desire activities have contributed to a sense of agency in the neighborhood by giving citizens ownership and access to more (financial) resources, by establishing community wealth building as a way of working, and by connecting citizens with those who hold power. Groups were connected to work together; they trust each other more than at the beginning of the process. Moreover, they developed design skills and will continue to help each other beyond the Desire project, contributing to the development of a movement.

Moreover, Desire put democratization through redistribution of funds on the agenda of the Wildeman neighborhood. Throughout the Desire activities citizens gained agency over funding, built trust in order to use resources as commons, and adopted ideas of Community Wealth Building [19]. Both the introduction of the approaches of Community Wealth Building and civic design were brought forward in the meetings of the National Program *Samen Nieuw West*, by bringing positive evidence for community-led local development, formalizing the impact of the community to implement specific approaches into policies.

The Desire demonstrator in Wildeman shows the value of impact bottom-up practices both by directly improving neighborhoods and indirectly by rebuilding trust in institutions and improving the image of the neighborhood. Informal networks are now at the forefront; there has been a reversal of supply and demand in cultural policy. The municipality acknowledges our community-led approach by collaborating with the Wildeman community and putting it at the center of its New European Bauhaus project proposal.

The process of the Desire core team revolved around making a quick start in designing with the ODGs. However, when the co-design process led to making direct funding available for the groups the design process slowed down. Building relations and trust became a crucial step to be taken. To amend this, meetings were organized around the topic of transparency and trust, where everyone came together, listened to each other and spoke openly about their goals and desires in the project. This showed how taking time to build trust through doing things together and listening to each other through peer-to-peer exchange.

The ability to explain to people what expertise the Desire core team could bring and their roles as stakeholders in a co-design was fundamental. Showing how expectation management plays a crucial role in such processes. Citizens already had great long-term visions but needed support in finding the steps in between the current situation and that future vision. Adding our expertise, but also listening to their needs and desires, we learned to negotiate the process with them.

The potential of collaboration by SW-SL and The Beach was clear, but navigating this collaboration was not as easy as imagined. The goals of the organizations are similar, but are talked about in very different ways. In reflection sessions, we deconstructed these differences to get a better understanding of what our collaboration can bring. SW-SL comes at it from a more activist standpoint, provoking the system to force change; The Beach takes a more constructive stance. Both parties sometimes work with the system to create possible solutions. Together, we are not just designers and activists helping each other, but designer-activists who learned from each other's ways by doing things together and reflecting.

Through our focus on Civic Design, SW-SL and The Beach are at the forefront of participatory approaches within both the Arts & Culture and Social domains. Our evolution from traditional participation to community-led initiatives, and from design thinking to co-design and situation design, necessitates a detailed explanation of these methods to our partners. The Desire core team's emphasis on situational contexts further underscores the need for a nuanced understanding of these approaches. At the same time, relevant formal policies are still in their nascent stages, grappling with challenges related to genuine citizen engagement and the implementation of true bottom-up processes. Institutions often search for practical experience in participatory practices and local connections. While there is significant focus on citizen inclusion, the critical shift from doing *for* citizens to working *with* them it is at their initial stages of integration into the operational frameworks of these networks showing how the Desire demonstrator played a crucial role in their integration.

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The Green Transition: Transforming Soviet Housing Neighborhoods in Zjēpju, Riga



Rūdis Rubenis, Emīls Zinkēvičs, and Liene Siņicka

Abstract The Zjēpju 11 site in Riga, Latvia, is undergoing significant renovation as part of the Desire project, focusing on sustainable and inclusive urban development. Originally a Soviet-era dormitory, the building has been vacant since 2018. The Riga Energy Agency is spearheading the renovation, aiming to transform the site into social housing and community spaces, with a strong emphasis on circular economy principles. Key challenges include addressing the building's poor energy efficiency, integrating the local community, and overcoming the post-Soviet mentality of passive citizenship. The experimentation tests innovative procurement formats and engages various stakeholders through workshops, focusing on creating a vibrant, inclusive community. These efforts also align with Riga's broader sustainable energy and circular economy policies. The goal of the experiment is to develop scalable models for community engagement in public spaces and improve the city's social housing system. Initial successes include engagement with social housing residents, children, and people with mental disabilities, offering insights into how physical and social spaces can be redesigned to promote sustainability, belonging, and active citizenship.

Keywords Urban renovation · Social housing · Public procurement · Citizen engagement · Zjēpju-Riga · Circular economy

R. Rubenis (✉) · E. Zinkēvičs · L. Siņicka
Riga Municipality, Dzinavu 140, Riga 1050, Latvia
e-mail: rudis.rubenis@riga.lv

E. Zinkēvičs
e-mail: emils.zinkevics@riga.lv

L. Siņicka
e-mail: liene.sinicka@riga.lv

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1 Context

1.1 Ziepju: A Site Under Renovation

Ziepju 11 site lays in Riga, the capital of Latvia, in the neighborhood of Ziepniekkalns. The site is not located in the city center, but it is relatively well accessible by public transport and there are both bus and tram stop nearby. Ziepju Street 11 is a separate land plot with an abandoned 5 storey dormitory building on it. It is surrounded by other buildings, creating a yard-like neighborhood. Opposite of Ziepju 11, on Ziepju 13, stands an identical but twenty years ago renovated building as a social housing and a children daycare center (see Fig. 1). Neighboring plot of land at Putnu Street 6 houses a group home for people with severe mental disorders.

The exploitation of the Ziepju 11 building began in 1970, when it started working as a service hotel for employees of the nearby trolleybus park. It was built as a brick and panel five-story building with a basement. In 2011, the Riga Housing and Environment Committee decided to terminate the lease agreements with the residents of the building due to the poor technical condition of the building. The building has been emptied since 2018, however, in the same year 2018, a decision was made to rebuild the building into a multi-apartment rental residential building.

Further on Riga Energy agency overtook the renovation project, because in the organization's view this was a great opportunity to introduce the construction industry with a healthy example of orderly and sustainable renovation of Soviet-era apartment buildings. The renovated building will serve as a social residential building with several community common areas, as well as daycare center for kids and mentally challenged people. Agency has ambition to showcase the site as one of the pioneer circular economy projects in Riga. A lot of research and preparatory work was done



Fig. 1 Formerly renovated Ziepju 13 (left side) and the abandoned Ziepju 11 (on the right)

for this by the agency in 2019–2022 Urbact project URGE [1]. A procurement during Desire project was codesigned and launched for the renovation process.

On larger scope main policies supporting ideas relevant in the Desire project are Sustainable energy and climate action plan of the city of Riga 2030 [2] and Circular economy action plan of the municipality of Riga 2026–2030 which is still in active development. These policies set the climate goals for the city and Ziepju 11 could be one of the lighthouse demonstrators in those directions.

On a more practical level, movement towards tools that can procure quality instead of lowest price services in municipality has been a great issue. Guidelines by Association of Latvian Architects [3] have been developed and published in parallel with work on Zpiepju 11 renovation process. Design procurement for Ziepju 11 renovation will be the first project, where the new ideas and formats will be tested.

During Desire project Riga Housing Policy [4] has been developed. It is umbrella document for setting cities goals for future housing, including social housing. Several meetings were held to see, how could issues and ideas addressed in Ziepju pilot site could be included in this policy.

1.2 Issues to Be Tackled

Issues characterizing the area are typical: poor construction quality, terrifying energy inefficiency, and form-based social programming that does not match modern social requirements. With up to 6,000 modernist block buildings up for renovation and energy efficiency improvements in upcoming years, Riga is in a dire need to kickstart a cross-disciplinary discussion and re-evaluation of existing renovation practices to find affordable, sustainable and inclusive solutions.

In the race for the affordable energy efficiency solutions the aesthetics of modernist buildings are neglected thus producing masses of poor design neighborhoods. In turn, such negligence continues to further erode the communities, local identity, and place attachment. Work has been done in researching possible scenarios for reconstruction of mentioned housing project, but there is no scenario with surrounding landscape and community taken into consideration before reconstruction starts. Lack of community engagement, empowerment and self-governing skills is a central issue.

2 Challenges

2.1 Physical Spaces and Infrastructures

Around 70% of Riga citizens live in Soviet-era apartment buildings and neighborhoods [5] that bring with themselves characteristics of those times to the residents, such as absence of community. The goal of the development is a contemporary,

sustainable, democratic and economically sound building that meets the principles of beauty, sustainability, and inclusion of the New European Bauhaus initiative and demonstrates an example of how to restore and improve Soviet-era apartment buildings in Riga, using circular economy principles.

At the beginning of the Desire project first big challenge was designing new procurement for Ziepju site. Almost all the procurements in Riga are settled only from one aspect—lowest price offer. Which in the case for the development plan of Ziepju Street 11 and the Desire project was not reliable as limiting factor to choose the executor for the renovation project. Many values and requirements the renovation plan focuses are hard to quantify, therefore, technically measurable decision in the procurement process is hard to achieve.

2.2 Community

In Riga, the Desire project is facing maybe one of the biggest challenges typical in post-soviet countries as for example changing the mentality of the people, that they are not only users living within a central system that deals with everything but that they are active participants, owners and co-owners, that engage in and create their own city, their own home.

So, the second large challenge and maybe the biggest one is citizen engagement and self-government. It cumulates into the idea of a community driven neighborhood that in the future would exist also in Ziepju street 11 refurbished building. In Ziepju site social housing context, empowering citizens to take more ownership of the place and narrative is challenging, since the building, land and service is owned and ran by municipality. A top-down system has traditionally been in place.

2.3 Services and Programs

Citizen involvement and services have been a focal point for the municipality in general and specifically in Ziepju site. The questions to be explored are: How to increase citizen engagement? Can working scalable models of citizen engagement and co-ownership of common amenities be implemented? Can people living in social housing set their own goals for their living environment and take ownership of the idea? These questions become vital when thinking about creating a scalable model of residents' care in common outdoor space, private engagement in public space.

3 Site Experience

3.1 *Physical Spaces and Infrastructures*

A lot of work was dedicated to co-designing new procurement format. With the help of the newly created stakeholders' network, and particularly its members, Riga Energy Agency and Association of Latvian architects, a two-stage procurement process was designed. Work started with creating content of the procurement—technical specification. During different workshops and meetings with stakeholders a lot of practical and technical issues and needs were discussed and addressed in the procurement as well as requirements for circular practices, focus on beauty and biodiversity, engagement of community and their ideas, creating sense of belonging and movement.

After the technical specification, the next challenging part was the procurement procedure and the proposal for selection criteria. A decision was made to experiment with new format, uncommon in Riga: procurement with a dialogue. This is the first of its kind. It is organized in stages; in the first stage, all interested participants apply. Then, the municipality selects up to five best candidates for the second stage from the applications submitted in the competition. These candidates will then receive the technical specification and will be invited to submit an architectural sketch and financial offer for the development of the building project. To achieve a good result, in the second stage of the tender, the candidates and the customer will have the opportunity to discuss both the technical specification and the financial offer.

3.2 *Community*

During the Desire project, several key community user groups were involved. Within the renovated building there will be multiple social housing units, a daycare center for people with mental disabilities and a daycare center for children, defining the three main user groups for the Desire project. The focus on community, viewed through the lens of the courtyard, became a central theme in user engagement events, as the courtyard will serve as a common space for all three groups in the future.

Social housing residents

In August 2023, work began with the first user group in Ziepju Courtyard: social housing residents. Since there are currently no residents living in the vacant Ziepju 11 building, residents from the neighboring Ziepju 13 were invited, as they will be the future users of the shared outdoor space. This was one of the main reasons for focusing on the common outdoor area rather than the buildings.

Reaching social housing residents and inviting them to the workshop was challenging due to municipal data protection regulations. Additionally, residents are not accustomed to participating in community activities, so personal invitations, phone

calls, letters, posters, and reminders were used to encourage participation. Potential social housing tenants, families on the apartment waitlist, were also invited to the workshop.

The event was well-received, with participants from various societal groups, including the elderly, children, and people with disabilities, although only about half of the expected attendees appeared. Since events for social housing residents in this area, or even in the city, had rarely been held before, many residents dressed nicely, reflecting the significance of the occasion for them. Giving a voice to this long-overlooked part of society brought joy to the residents of Ziepju Street 13 and potential future social housing residents.

At the beginning of the workshop, participants were given a tour of the courtyard. This proved to be an important opportunity for residents to express their concerns, as they voiced their fears about existing problems that might hinder future plans. This conversation helped clear some doubts and eased fears, paving the way for the creativity needed in the next steps.

Afterward, participants gathered in a tent set up in the courtyard. Tables were arranged with a large map of the courtyard and cut-out images representing different activities. Participants were invited to discuss and place these on the map where they envisioned improvements.

The residents were aware that the outdoor space would need to serve different age groups, so when planning improvements, they naturally considered opportunities for various users. Their main concern, however, was the presence of people with addictions in the area. As a result, some groups expressed opposition to picnic areas or barbecues, fearing these might attract even more unwanted activity.

Children from daycare center

The Work continued in September 2023 with the second local group in Ziepju courtyard: the children from the daycare center. The event was organized indoors for school-aged children, ranging from 7 to 15 years old, in their own space located in the basement of Ziepju 13. The workshop sparked great interest and excitement among the children, as it was unusual for them to be asked for detailed input about their surroundings and what they would like to improve.

During the workshop, the children expressed a desire for more greenery, specifically mentioning the need for flowers and an apple tree. While most of them wanted activities in the yard tailored to their own interests, they also showed consideration for the elderly residents of Ziepju Street 13, suggesting a suitable place for them to rest. Additionally, they emphasized the importance of a pond for frogs, shelters for birds, and a resting place for the local cats.

The children's enthusiasm for contributing to their environment was remarkable. They were eager to inventory the existing rooms in the center, actively raising their hands to explain what they liked about the better-rated rooms and what they disliked about the lower-rated ones. The event was a big success, and it's clear that their opinions can be valuable in addressing other issues concerning their environment.

People with severe mental disabilities

The third user group from the Ziepju community to be involved in the co-creation workshops consisted of individuals with severe mental disabilities from the daycare center at Putnu 6. These individuals currently spend their entire day and resting time at the Putnu 6 building. However, once Ziepju 11 is renovated, they will experience a lifestyle more integrated with the rest of society—living in group housing at Putnu 6 and spending their daytime at the new daycare center in Ziepju 11, much like going to work, as others in society do.

The workshop was held outdoors at Putnu 6, involving a large group of 18 clients and 4 staff members from the daycare center. In the first part, there were two tasks for the participants: one involved evaluating the existing infrastructure in the courtyard, and the second focused on gathering ideas for the future courtyard. The biggest challenge in engaging individuals with severe mental disabilities was capturing and maintaining their attention on the tasks. Each group had a daycare center staff member who led the activity and encouraged the participants to engage as much as possible. For example, staff would hold up a photo of an object or activity and ask simple questions like, “Do we want this?” or “Do we like it?”.

At times, participants found it difficult to respond, lost focus, or couldn’t provide clear answers. In such situations, staff members had to interpret their clients’ reactions and emotions, making educated guesses based on these cues. Although the input from participants wasn’t always clear, it provided valuable insights into how they felt about specific aspects of the courtyard.

This was particularly useful for the second part of the workshop, where staff members took on the role of the clients in planning the future courtyard, with architect Rudis Rubenis from the Desire team acting as moderator. The outcome was a clear vision of the needs of both clients and staff, represented in maps illustrated with images, sketches, and notes.

3.3 Services and Programs

While working with the municipal stakeholder network and researching the current social housing situation in Riga, an opportunity arose to collaborate on the upcoming Riga Housing Policy. Several meetings were held on the topic of social housing, allowing stakeholders to come together and discuss the development of the new policy. During these meetings, it became clear that many stakeholders lacked a shared understanding of what social housing in Riga entails. In response, colleagues from the Riga Welfare Department suggested organizing an excursion to visit Riga’s social housing sites.

In June 2023, an excursion for a delegation of municipal stakeholders was arranged. The group visited four sites in different locations around Riga, starting with older, less developed housing and ending with a recently built multi-use complex. A common issue in the older housing sites was the small to extremely small (~14 square

meters) apartments. The oldest buildings featured shared common facilities such as showers, toilets, and kitchens, many of which were in poor condition. These conditions have led to a consensus on the need to eliminate the dormitory-style concept in municipal social housing.

Stakeholders also identified shared indoor spaces as a potential risk for parties and uncontrolled gatherings involving alcohol and drug use. On the other hand, outdoor spaces were highlighted as the most promising areas for community activities.

Following the excursion, a discussion on social housing was held with municipal experts in September 2023. Many issues were raised, such as the lack of understanding about what social housing services are and how they function, as well as concerns about illegal subletting activities. However, several positive ideas also emerged, including the creation of social housing design guidelines to prevent the development of non-functional micro-apartments and to establish good design practices.

A significant portion of the discussion focused on the need for different approaches for various user groups. Currently, social apartments are assigned to applicants solely based on their position on the waiting list, without any consideration for community-building practices among social housing residents. This creates an environment where it is difficult to improve living conditions. With no sense of community or opportunities to influence their surroundings, residents are left to live with the same mindset that a centralized system will handle everything for them.

4 Key Learnings

The new procurement format incorporates many innovative approaches for the development of physical spaces and infrastructures. However, it is still too early to determine whether the effort invested in transforming the procurement process has been worthwhile, as it remains ongoing. The key milestone so far has been the co-development, review, and release of the new format through a complex, multi-stakeholder engagement process. The following stages have been slow, and the second phase of procurement has yet to be completed. The true impact will need to be assessed in later stages, once designers begin work on the renovation project, complete the design, and the building and surrounding area are renovated, with a new community starting to form. The slow progress highlights potential drawbacks. Tangible results from the pilot site's procurement will only materialize if the process is completed and the housing project is realized—something still uncertain as discussions among municipal stakeholders continue.

An important takeaway is the need for strong stakeholder support and engagement from the outset, as well as the persistence required to keep stakeholders committed throughout the project's duration. Engaging stakeholders in the project idea, aligning goals, and maintaining focus are essential, especially as priorities may shift with each year's budget. The emphasis on procurement for the development of the pilot site

at Ziepju 11 has brought significant benefits. The co-creation of the new procurement format in close collaboration with various municipal and NGO parties—such as the Riga Energy Agency, the Department of City Development, the Association of Latvian Architects, and others—has already been a great achievement. The establishment of this new network may ultimately prove to be even more valuable in generating future procurement ideas than the current procurement itself.

Secondly, regarding community engagement, the Desire project has been a major success. The Riga City municipal team successfully organized in-person workshops with each user group, including elderly social housing residents, children from the daycare center, and individuals with mental disabilities from their daycare. All these groups were enthusiastic about participating and eager to improve their environment for themselves and their neighbors. It was surprising how open each group became during the workshops, starting the process of building relationships with municipal representatives and one another. This led to the belief that, even in the relatively disadvantaged conditions of Riga's social housing, the formation of a vibrant local community at Ziepju 11/13 is possible. However, most attempts to implement practical interventions or experiments in these physical spaces often exceeded the scope of what the municipality could do with its typical tools or evolved into larger issues. Initially small, practical ideas often highlighted more significant problems, shifting focus away from the original intentions. Cultural change is slow and can be resource-intensive, but practical experiments sometimes spark the shift in perspective needed to initiate change. In Riga, residents are accustomed to promises not materializing in their immediate surroundings, which led many participants to ask, "Will something actually happen, and when?" This underscored the need for more tools that blend soft and hard interventions. Community building could be more effective if residents could see, and ideally co-create tangible changes in their courtyard.

Finally, the initial expectations of quickly creating models for social housing residents' engagement in public spaces were challenged by the difficulties of reaching this audience and forming a group to work with. Nevertheless, this highlighted the need not only for more apartments and square meters but also for new community-building and self-governing practices. These could be crucial in helping residents significantly improve both their living conditions in social housing and their quality of life overall.

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Transforming Through Education: Developing Inclusive Residential Areas in Gadehavegård, Høje Taastrup



Lisbeth Engelbrecht, Mette Mogensen, and Elsba Hardlei

Abstract Gadehavegård is a social housing development area, owned by Danske Funktionærers Boligselskab (DFB) and located in Høje Taastrup, east of Copenhagen. This chapter explores how the Gadehavegård demonstrator is answering two main issues in the area: the need for renovation of the residential area and empowering current residents in the decision-making process for such a transformation. The activities of the Desire demonstrator highlighted several key learnings. A major focus is on redefining tendering processes by incorporating participatory design principles, based on local needs, particularly those of young people. This approach challenges traditional roles and ensures designs reflect community input. Architects are encouraged to apply these principles before the tendering process begins, supplementing cost-focused assessments with spatial quality assurance. The project also emphasizes the importance of prominent circularity and accessible green spaces to enhance well-being, integrating nature into the participatory process. Involving youth in co-design fosters empowerment and rethinks power dynamics in social housing transformations.

Keywords Social housing renovation · Participatory design · Architecture experts · Community Empowerment · Co-design with youth · Tenders and procurements

L. Engelbrecht (✉) · M. Mogensen · E. Hardlei
Domea.dk, Oldenburg Allé 3, 2630 Taastrup, Denmark
e-mail: lej@domea.dk

M. Mogensen
e-mail: mem@domea.dk

E. Hardlei
e-mail: ehar@domea.dk

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1 Gadehavegård: A Social Housing Development Area

Gadehavegård is a social housing development area with a total of 986 homes, owned by Danske Funktionærers Boligselskab (DFB) and located in Høje Taastrup, east of Copenhagen. Gadehavegård was built in the 1970s and consists of 19 similar blocks with family apartments of different sizes. The area appears closed and without connection to the surrounding city. In 2018 Gadehavegård was designated as a ghetto area by the Danish government. Therefore, the government had to make a development plan to overcome the issue, ensuring a reduction of social housing from 100 to 40%. Thus, by 2030 the area will have undergone a huge transformation: some blocks will be demolished, others sold to a private developer, new functions, roads and private houses will be built and all apartments renovated. Furthermore, two large, gray parking lots and a two-lane road will be transformed into a vibrant new park area covering 30.000 m². The new green area will be developed not only for Gadehavegård's residents, but also for the benefit of the rest of the citizens in Høje Taastrup Municipality and thus help open the residential area to the rest of the city.

With the Desire project, DFB and Domea.dk want to initiate the involvement of residents and other citizens in the development and programming of the new green, common through a transformative process that includes co-design with young people.

The primary regulations and programs defining the development of Gadehavegård are the development plan [2] and the local plan [3]. The development plan sets the overall direction and vision for the area, while the regulations for the specific development are defined in the local plan.

The development plan aims to change Gadehavegård's identity as "ghetto" and to transform the area into "a residential area in balance, where there is room for everyone". The vision for the future Gadehavegård includes:

- An open and inviting housing area
- (More) attractive green areas
- A green and sustainable settlement
- An area that supports local communities
- A safe place to be and to live
- Attractive homes with a good indoor climate and low energy consumption
- A housing area with a varied range of housing, architecture and residents.

The development plan visions the new green park area as a place gathering people living in the existing flats, the future private homeowners, students from the future campus area and citizens from the rest of Høje Taastrup.

The local plan 2.37 for Gadehavegård regulates the use of the area e.g. where, what and how much are allowed to be built and where the new park area can be placed. The park area is in subarea D which is around 30,000 square meters [3]. This area is only for recreational purposes. One of the main purposes of the local plan is to make sure that the new green, recreational area will be a central gathering point in the future Gadehavegård.

Gadehavegård has two main issues. The apartments have a pronounced need for renovation and the residential area is characterized as a hard ghetto, which means that inhabitants here are more likely not to have an education or a job and a lower income and that the area has a higher crime rate than other residential areas. This implies that the transformation was not chosen by its residents, who also include vulnerable groups. It's a core goal to take care of these people and to empower them to take part in the transformation process in the Desire project and the general development process of Gadehavegård. The goal is for the new public spaces and involvement processes to foster new relationships and build stronger communities.

It is a fixed task to reduce the number of social (family) houses from 100 to 40%, but in this process, the project addresses the need to rethink the use of materials in the construction industry and the global biodiversity crisis by emphasizing the need for reuse and recycling of materials from tore down buildings in Gadehavegård and by making a huge and biodiverse park for insects, animals and people to thrive in.

2 Challenges

The two Desire's principles of biodiversity and circularity were selected from the Desire's manifesto [1] as the main principles in Gadehavegård. These two have been the starting point in the development of the activities, although it has been expected that the three other principles (e.g. belonging, aesthetics and movement) would automatically be brought into play. Based on these two main principles, the work and activities in Gadehavegård have addressed the outcome challenges listed below in relation to the three design components (see Fig. 1) community, physical space and infrastructure, services and programs. The integration of these principles into the activities at Gadehavegård is aimed at creating a sustainable and engaged community. By prioritizing biodiversity and circularity, we ensure that the projects not only focus on environmental sustainability but also foster a strong sense of community ownership and pride.

The activities carried out within Desire strive to foster the engagement of local communities and encourage commitment rooted in biodiversity and circularity, as well as in the design and future use of the park area. By focusing on the Desire principles, the activities aim to build a sense of belonging and engagement among residents. In particular, the young generations have been identified as drivers of change and thus, they are the key to a successful and resilient development of Gadehavegård. Their involvement will future proof the plans and design decisions made today. Therefore, young students from the local school and their teachers were engaged in the transformation of Gadehavegård. Furthermore, it is an important success criterion for the project that the young people initiate a broader dialogue about the area's development by virtue of their contact with peers and adults such as friends, siblings, parents, grandparents, coaches, etc. Besides getting valuable knowledge and seeing new potential in Gadehavegård, the process will empower the young people and give them new skills and knowledge of biodiversity, circularity and democratic processes.

The activity process in Gadehavegård

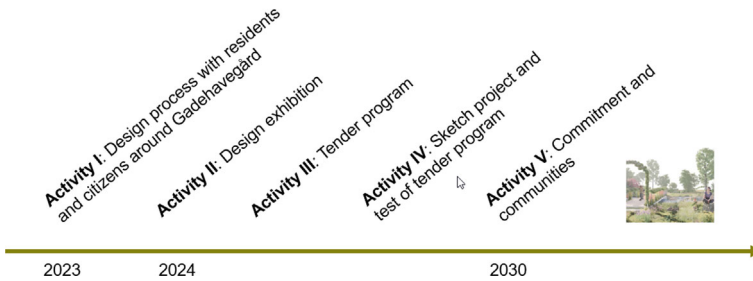


Fig. 1 The activity process in Gadehavegaard from 2023 to 2030

The second desired outcome is to design a biodiverse park area that showcases circular processes and design, making them visible and accessible to all users. This space is intended to serve as a learning environment where communities can gather and engage with concepts of circularity and biodiversity, promoting both education and interaction.

Finally, the third desired outcome is to develop a comprehensive tender program based on design principles formulated by the residents and citizens of Gadehavegård. This program is designed to ensure local participation and commitment throughout the design process, thereby maintaining a strong connection between the community and the project. The tender program is a critical component, as it ensures that the community remains actively involved in the design and implementation phases. This involvement is crucial for maintaining the momentum and ensuring the long-term success of the initiatives.

In conclusion, the approach taken in Gadehavegård exemplifies how focusing on key principles like biodiversity and circularity can lead to holistic and sustainable community development. By embedding these principles into the fabric of the community, physical spaces, and services, we create a cohesive and resilient environment that benefits both residents and the broader ecosystem. This approach not only addresses immediate challenges but also sets a precedent for future projects aiming to integrate sustainability with community engagement.

3 Site Experience

Several activities have been carried out within the Desire project plugging into an already existing transformation process. Figure 1. shows the activity process from 2023 to 2030 and forward for the new park area in Gadehavegård. This section will present on activity I and II in depth as they have been carried out within the Desire

project, giving an initial prospect of the future (activity III), rather activity IV and V will not be presented.

3.1 Activity I: Design Process—Residents and Citizens Around Gadehavegård

In the autumn 2023 we engaged students and teachers from two eighth grade classes at the local school in a learning- and design process. Here they were taught about circularity and biodiversity by designers and architects, they did examine Gadehavegård and produced several prototypes for the new green park area. We explored issues such as: How can a group of students transform their knowledge (a learning process) about biodiversity and circularity into a design of a biodiverse park area that makes circular processes and design visible for all users, creating learning and communities around circularity and biodiversity?

During a two-week intensive design sprint, local youth were entrusted with offering their perspectives on the transformation of Gadehavegård. This sprint not only allowed them to voice their ideas but also turned abstract concepts of urban transformation into something concrete, tangible, playful, and immersive. Their designs became a medium for facilitating dialogue among various stakeholders, creating a space where different perspectives could be explored and discussed. By working with hands-on materials grounded in the physical reality of the area, the youngsters were able to speculate, experiment, and tinker with potential future developments. The models they created enabled a deeper understanding of the area's potential while encouraging a playful and interactive engagement with serious urban planning challenges.

The outcomes of the sprint were multi-faceted. First, it empowered the young participants by involving them directly in the transformation of a neighborhood that will significantly impact both current and future residents. This engagement was not merely symbolic; it represented a genuine experiment in how future tendering processes might incorporate participatory design, using locally developed principles of biodiversity, circularity, and inclusion. By working hands-on with these principles, the youngsters not only helped shape the area's future but also gained valuable skills and knowledge in urban development. They learned how a dream, an idea, or a sketch could evolve into a model and eventually become reality, instilling in them a sense of ownership and achievement.

The broader implications of the design sprint extended beyond the individuals who participated. As these young people shared their experiences and ideas with friends, parents, and other local actors, they began to catalyze a wider dialogue about the area's development. This ripple effect—starting with the youngsters and extending to their networks—opened up new channels for community engagement and participation. Their projects told a dual story: they captured both the present-day

challenges and potentials of Gadehavegård, while also outlining the community's hopes and visions for the future.

One of the significant outcomes was the establishment of lasting relationships with 40 local young people, relationships that can serve as a foundation for further engagement. These connections have the potential to spread, like ripples in water, reaching their families, friends, and other members of the community. By fostering these relationships, the project has created a valuable local network of engaged individuals who can continue to contribute to the area's ongoing transformation.

The young people also played a pivotal role in creating design principles for Gadehavegård's future development. Based on the core values of biodiversity, circularity, and inclusion, these principles will guide future decisions about how the area evolves. Their involvement in creating these principles has ensured that the perspectives of the younger generation—often underrepresented in urban planning processes—are embedded in the long-term vision for Gadehavegård. This approach not only enriches the design process but also demonstrates the value of participatory methods in shaping urban environments that are more inclusive, sustainable, and responsive to the needs of their communities. The entire experience provided Domea, the housing management organization, with fresh insights into the area's development potential as seen through the eyes of its younger residents.

3.2 Activity II: Design Exhibition

Nearly five months later, a diverse group of participants gathered once again at the library of Ole Rømer School. On an early spring evening in 2024, students hosted an exhibition to showcase and gather feedback on their ideas for a biodiverse and circular park. About half of the student group attended. This event was a collaborative effort, orchestrated with the help of external facilitators and architects from Backscatter [4] and GXN [5], experts supporting the experiments, along with the support of their teachers. The students confidently welcomed guests, encouraging them to share opinions and provide feedback on their proposals. The atmosphere was charged with the sense of ownership and pride students demonstrated in their well-prepared presentations.

Since the vibrant theme weeks, their initial ideas had been refined into six core design principles for the future park, such as “a place to relax and be myself” or “a space for sports, creativity, and play.” During the exhibition, these principles were further organized into three thematic zones: relaxation spaces, areas for activities and encounters, and nature and culture. The students led participants through these zones, presenting their design concepts, inviting questions, and engaging in dialogue. It was clear that the students had grown in confidence, now able to articulate their ideas on complex subjects such as biodiversity, upcycled materials, and community use of the park. Participants, including site representatives and facilitators, were impressed by the students' ability to apply and explain the knowledge they had gained through the Desire project.

The exhibition attendees included key representatives from the Desire project, Domea, expert facilitators, a landscape architect, teachers, local residents from Gadehavegaard, and a member of Dansk Naturfredningsforening. However, one group was notably absent: the parents. Site representatives had hoped the exhibition might serve as an entry point for parents to join the conversation, adding new perspectives to the discussion about the park's future. There was optimism that the students' ideas could provide a comfortable foundation for their parents to share their thoughts and contribute to the vision of a green, sustainable space.

Reflecting on the event, site representatives acknowledged the ongoing challenge of involving vulnerable groups in the planning process. While the exhibition succeeded in engaging some stakeholders, the absence of parents highlighted the complexities of reaching out to all community members. Whether due to time constraints, cultural differences, competing priorities, or limited mental and emotional capacity, encouraging participation from this group remained a difficult task. Communicating the significance of the park and the principles of biodiversity and circularity to such a group is far from straightforward.

The event underscored both the successes and the challenges of fostering inclusive participation, leaving site representatives with valuable insights on how to better involve all voices in the project moving forward [6].

3.3 Activity III: Tender Program

The tender program for the future development of Gadehavegård is currently in its initial stages. Building on the outcomes of previous activities, the program incorporates three key elements. First, it emphasizes the values of the New European Bauhaus (NEB), focusing on sustainability, inclusion, and aesthetics. Second, it is guided by three fundamental principles for the green area's development: biodiversity, circularity, and inclusion. Finally, the program integrates the research and contributions of local young people, including their white paper [4], design principles, and prototypes for the outdoor spaces. These elements form the foundation for shaping the tender process, ensuring that the future development aligns with both community needs and sustainable, inclusive design principles. Although the tender program is still evolving, it sets a clear framework for the next steps in transforming Gadehavegård into a vibrant, environmentally-conscious space.

4 Key Learnings

The activities conducted in Gadehavegård during the Desire project have revealed several important insights.

At the forefront is the ambition to reshape the tendering process, aiming to challenge conventional roles, disrupt established norms, and reduce the dominance of

certain voices in design. While citizen participation has a proven history of success, it often results in flat, text-heavy lists of requirements handed to architects. To move beyond this, a key innovation has been the creation of local design principles rooted in the needs and ideas of young people. These principles will act as a practical tool, guiding future design and procurement. A significant shift involves empowering architects to test these design guidelines before the tendering process begins, adding a spatial quality check to complement the typical cost-focused assessment. With these principles in place, multidisciplinary teams—architects, engineers, and others—will be invited to follow them and involve residents in the design process, ensuring inclusivity and reducing bias.

Equally important is the visibility of circularity. The concept of circularity will take physical form in the outdoor spaces, where recycled materials will be prominently featured, connecting the park to the history, identity, and memory of Gadehavegård. Furthermore, green spaces are vital not only for human well-being but also for the health of non-human life. Integrating nature into the participatory process is essential. The aim is to cultivate a relationship between residents and green areas, grounded in respect and well-being for all living beings. However, this goal comes with challenges, particularly those tied to the socio-economic factors that define the community. Building a community centered around biodiversity will require ongoing effort, along with dedicated time and resources from site representatives.

Incorporating young students into the co-design process offers a unique chance to rethink both design and tendering. Their involvement in shaping the park introduces fresh perspectives and empowers them to articulate their needs, while also challenging traditional power dynamics in social housing transformation. The desire is to give young people a defined role in the tendering process, positioning them as ambassadors for biodiversity.

In summary, the new co-design model for tendering processes in Gadehavegård illustrates how focusing on key values like biodiversity and circularity can drive holistic, sustainable community development [6].

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Beauty, Inclusiveness, and Sustainability for the Public Space in MIND



Beatrice Villari , Giulia Pietracaprina, Laura Martelloni ,
and Francesco La Loggia

Abstract The chapter outlines the outcomes of the design experimentation conducted at MIND within the Desire—Designing the Irresistible Circular Society—project. Specifically, it interprets the values of beauty, inclusivity, and sustainability to propose an evaluation model for outcomes and impacts centered on the experience of the public space in a continuously evolving context. The “Beauty for All” framework, a conclusive result of the experimentation, is described. It incorporates a monitoring and evaluation system based on indicators that outline experiences to characterize the current context of the public space in MIND as both beautiful and inclusive. This integrates with an experimental prototype that combines artistic and technological approaches to support the Desire principles, such as “We nurture a sense of belonging” and “We expand the aesthetic concept.” The result is a system to aid decision-makers and designers in strategizing, orienting, planning, and assessing the ongoing transformation of the public space. Additionally, reflections on the overall experience are shared, serving as a learning process involving the Desire’s team and the communities engaged during the journey.

Keywords Beauty · Inclusivity · Urban-regeneration · Evaluation framework · Public space

B. Villari (✉) · G. Pietracaprina · L. Martelloni
Department of Design, Politecnico di Milano, via Durando 10, 20158 Milan, Italy
e-mail: beatrice.villari@polimi.it

G. Pietracaprina
e-mail: giulia.pietracaprina@mail.polimi.it

L. Martelloni
e-mail: laura.martelloni@polimi.it

F. La Loggia
PlusValue, Corso Monforte, 41, 20122 Milan, Italy
e-mail: francesco.laLoggia@plusvalue.org

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1 MIND—Milano Innovation District

1.1 MIND: The Public–Private Partnership

The Milan Innovation District (MIND) is in northern Milan, spanning one million square meters with 40 ha of public space. It originated from EXPO 2015, which focused on nutrition and human well-being. MIND is envisioned as a city within Milan, transforming the area into an innovation district that promotes inclusion, well-being, and environmental sustainability.

MIND centers on two main themes: the future of health and the city of the future. It aims to become an international hub of excellence in research and innovation, integrating life sciences, biology, medicine, pharmacology, genomics, biotechnologies, clinical research, big data, and digital technologies. The district also pioneers sustainable urban living and green mobility. MIND’s vision is to foster collaborative innovation, experimenting with cutting-edge lifestyles to generate social, cultural, and economic growth, enhancing well-being locally and beyond.

Australian developer Lendlease secured a 99-year permit through a competitive bidding process to design the masterplan and attract private enterprises. MIND operates on a public–private partnership (PPP), with Arexpo as the public entity overseeing implementation. The project relies on five key public interest anchors: the University of Milan (UniMi), Galeazzi Sant’Ambrogio Hospital, the Human Technopole, the Politecnico di Milano (PoliMi), and the Triulza Foundation. Federated Innovation, an association of private companies, collaborates with MIND.

These governance systems attract public and private stakeholders to the innovation district, fostering collaboration and competition for new projects in multidisciplinary and cross-sectoral innovation. Following EXPO 2015, the Italian government established the Human Technopole, a research center focused on genomics, structural biology, computational biology, neuroscience, and health data science.

MIND is projected to be fully operational by 2031, featuring offices, co-working spaces, laboratories, residential units, and entertainment venues.

1.2 Issues to Be Tackled

MIND can be considered a kind of “open construction site”; it is a transforming area that will be completed in its final phase by 2031 but is already populated by various entities such as companies, startups, co-working spaces, and universities. These communities (called *Tenants* or, more informally *Minders*) live and experience the area through its spaces, infrastructure, and services in a temporary and ever-evolving dimension. A significant population growth is anticipated due to new infrastructures and organizations that, alongside those already present, will soon be established in the area (e.g., the University of Milan). Consequently, there are diverse needs and requirements related to the experience of space, some in the very short

term and others in the longer perspective. Therefore, different communities are (and will be) having distinct experiences of the site (and public space) based on their needs, personal interests, work, social context, and so forth.

Specifically, the area needs to integrate the diverse communities already present and to welcome citizens and external visitors in a safe, welcoming, and inclusive manner. In particular, the public space and the Decumano (the main route in the area) represents key elements that characterize MIND, providing access to spaces dedicated to activities and services. On a different level, the creation of a community is the challenge projected onto the project's initiatives. The goal is to make MIND a pleasant place for those who already live there, thereby maintaining a vibrant community beyond activities related to work and business. Thus, the theme of inclusion and the quality of spaces have been central since the project's initial considerations.

2 Challenges

The "MIND for All" approach delineates a scenario that prioritizes aesthetic and inclusive dimensions. It focuses on the *soft* assets of transformation (therefore also on relational and subjective experiential aspects), complementing the *hard* elements that characterize the physical, tangible, and infrastructural aspects.

The challenges addressed span various levels of actions and objectives. At the community level, the goals were centered on broadening community involvement, focusing on livability and accessibility in the area. This entails activating legitimization and participation processes involving a broader community of stakeholders. This challenges the *core team* in integrating diverse perspectives into decision-making, design processes, and operational choices in both long-term strategies and short-term solutions. For the development of the area, this implies considering new collaborations and opportunities to support a more livable, safe, and inclusive development. This becomes evident through various actions involving experts, organizations already operating in MIND, communities, and external actors.

3 Site Experience: A Shared Vision for Urban Transformation

The contemporary perspective on placemaking emphasizes that places are the outcome of a collective effort involving individuals, communities, designers, planners, decision-makers, and numerous stakeholders [1]. Over the years, the concept of placemaking has evolved into a relational model wherein people and places interact to create value. Place quality is defined as the ability of places to generate physical and mental health and a sense of well-being through tangible and intangible qualities [2, 3]. Concepts such as livability, sense of place, urban environmental quality, physical

capital, urban design, urbanism, architecture and even sustainability are interconnected and overlap, encompassing ideas about the quality of the built environment. These concepts are integral to what we define—at the early stage of Desire—as the “MIND for All” experience, which implies a transformation that considers places for their ability to create and strengthen communities, develop services and programs to support the harmonious development of such communities and ensure sustainable, fair, and just development through physical dimensions, spaces, and infrastructure. The ultimate challenge was, therefore, to support a long-term transformation that can make MIND a recognizable place embodying the values of the New European Bauhaus and serving as a sort of evolving Living Lab. Building upon these considerations, the experimentation initiated within Desire is grounded in the principles outlined by the project, “We nurture a sense of belonging” and “We expand the concept of aesthetic”. and focuses on supporting urban transformation through inclusive and equitable processes, generating conviviality, facilitating a sense of belonging, and supporting a plural development vision.

3.1 From “MIND for All” to “Beauty for All”: Integrating Beauty, Inclusivity, and Sustainability in Public Spaces

The concept of “MIND for All” emerged in early 2023, originating from strategic discussions among representatives from PlusValue, Lendlease, and Politecnico di Milano. This early-stage concept outlines an idea of transforming the public space in MIND with a priority on accessibility, hospitality, and inclusion, integrating these concepts into the strategic development dimensions and evaluation systems useful for monitoring the site’s evolution and long-term impacts. As the experimentation progressed, this concept was enriched with a particular emphasis on the concept of beauty alongside that of inclusion. The aesthetic dimension of public spaces assumes various connotations, both of a social and political nature. A public space—interpreted from an aesthetic standpoint—is public only to the extent that its aesthetic qualities are also public [4]. Indeed, the aesthetic dimension linked to green transformation is a novel element compared to previous European policies related to the Green Deal.

Additionally, public space has been, and continue to be, the subject of numerous reflections and experiments in urban planning, architecture, and policymaking since it represents a convivial space that is indispensable for the city, and such space must be designed to be welcoming, accessible, vibrant, inclusive, and pluralistic [5]. Therefore, the vision of transforming MIND into a beautiful and inclusive place has led to identifying values and dimensions that characterize the aesthetic dimension of public space. This pertains not only to a relationship with the artistic dimension or the physical qualities of spaces but also to social dimensions.

Berleant [6], who theorized the concept of “environmental aesthetics”, places the creation of a social aesthetic at the center of his reflection, where the notion of

“aesthetic engagement” considers a broad spectrum of aesthetic phenomena related to certain social situations that go beyond the relationship with art. According to the author, a social situation exhibits the characteristics of an aesthetic situation when, for example, there is full acceptance of others, the emotion of discovery is perceived, the uniqueness of the situation is recognized, and no restrictions or exclusive limitations are hindering the appreciation of a particular context or activity. In this sense, the aesthetics and values of public space can be shared, thus being publicly accessible, generating positive and convivial experiences.

Urban transformation, therefore, also concerns “everyday aesthetics” [7, 8], referring, for example, to the pleasantness of the repetitiveness of some daily actions, the presence of peaceful and comfortable atmospheres, environments, or situations, and the mental and physical well-being associated with body care or physical activity, to name a few examples. However, these themes remain controversial as they involve cultural, economic, political, decision-making, and power aspects. The reflections initiated within the Desire process do not claim to delve into or resolve the intrinsic contradictions of such challenges. Still, the goal is to contribute to the cultural and intergenerational dialogue posed by the New European Bauhaus regarding sustainable development, which also needs to be fair and just.

In the New European Bauhaus framework, the concept of beauty and aesthetics are described through an explicit connection with artistic forms, emphasizing three ambitions that integrate intangible aspects, such as physical and mental well-being, as well as the experience of the places themselves [9]. The framework also underscores the aspect of beauty beyond functional dimensions, introducing the concept of care: “A beautiful project emerges when its authors invest collective sensitivity, intelligence, and competencies into creating a positive and enriching experience for people beyond functionality. A project that is genuinely attentive to its context and users encourages mutual care and can be a powerful driver for change” [9, p. 7].

Following these theoretical assumptions, the concept of beauty in design and placemaking was described from a relational perspective among people, spaces, physical and digital infrastructures, and services. The early-stage concept of “MIND for All” was anchored to the vision of an accessible, open, livable, inclusive, and vibrant space even amid transformation. Indeed, in the preliminary phase, the design strategy particularly focused on involving impaired people. However, as the experimentation progressed, it was considered crucial to broaden this concept to a universal idea of inclusion capable of generating beauty. Consequently, the concept of beauty was included as a strategic element of transformation to foster inclusion for everyone, including different cultural perspectives and adopting a multispecies perspective. This transition was crucial for developing the assessment framework, leading to the “Beauty for All” concept as a development strategy.

The place is considered an expression of diverse perspectives and relational processes, supporting the creation of meaning and value for the community and identifying how to acquire resources for implementation [10]. The relational perspective implies a reconsideration of the role of the expert toward a facilitating and enabling capacity, starting from the awareness that everybody designs [11] and that every community designs itself [12]. When guided by an inclusive and sustainable

approach, urban transformation processes involve a relationship with beauty that extends beyond formal or functional aspects. Aesthetics, therefore, do not merely pertain to the product or design output; rather, they encompass a comprehensive experience of places, namely, a place is something that can be utilized and lived in [9].

3.2 A Multi-actor and Multi-level Collaborative Journey to Designing Indicators

In the mature phase of the project, the objective was to design an evaluation system for the public space experience, with a particular focus on the Decumano. The process involved developing an interpretative model that described the principles of beauty and inclusivity for public space, along with a system of indicators. Specifically, the design journey to define indicators included a preliminary literature review on collaborative assessment frameworks, analysis of similar research processes, and examination of existing metrics consistent with the “Beauty for All” objectives. Two main references were considered as milestones: the “Cornerstone Indicators” developed by Dark Matters Lab [13] as a reference for the design of the indicators approach, and the “MIND Impact Assessment Report 2022” developed by Plus Value and Politecnico di Milano for specific metric adoption.

Following an initial workshop aimed at defining a common vision and strategy, four subsequent online workshops were organized with the participation of key stakeholders in MIND (Lendlease, Arexpo, Fondazione Triulza, Valore Italia). Additionally, two in-person workshops were conducted to engage different communities, including young adults and impaired people (Valore Italia students and representatives from Galeazzi Hospital). This listening and exchange phase aimed to understand how different actors defined MIND’s strategic priorities concerning beauty and inclusivity. Simultaneously, it aimed to share diverse challenges when the concept of beauty is applied to the experience of public space. Reflections have emerged concerning the public space transformation beyond its functional and regulatory aspects, tailoring solutions to specific needs as well. For example, beauty and inclusion were discussed around the capacity to pay attention to diverse experiences of public space, such as those related to women, people with disabilities or fragile communities, or the elderly. Besides, the importance of the “common ground” concept has also been highlighted. It is understood as a space capable of connecting and facilitating dialogue between the interior of buildings and the exterior, promoting accessibility and integration in terms of functions and experiences.

The participative process also brought to the identification of different levels of macro-objectives related to the public space transformation, described as “Building and strengthening communities and developing identity”, “Accessibility, welcome, and orientation”, “Active participation and involvement of minority groups and/

or the territory”, “Promotion of physical and mental well-being”, and “Sustainability, circularity, and nature-based solutions”. These objectives also steered the conceptualization of the “Beauty for All” model.

3.3 “Beauty for All”: A Model for Strategizing and Evaluating the Transformation of Public Places Towards Beauty, Inclusiveness, and Sustainability

The “Beauty for All” model serves as an evaluative instrument for transforming public spaces within temporary use contexts. It aligns with a reflection on adopting a systemic approach for initiatives in evolving urban contexts. This approach corresponds with the foundational principles of the New European Bauhaus, focusing on achieving transformation centered on the themes of beauty, inclusion, and sustainability. The proposed model is applicable in urban contexts characterized by a temporary nature, providing a means to assess and monitor changes in public space over time, even in a provisional situation.

This model is purposefully crafted to bolster strategic, decision-making, and design processes. It should be perceived as a guide that identifies potential directions for intervention. Its structure allows urban contexts to tailor the indicators to their needs, leveraging existing metrics. In this regard, the tool proves valuable for:

- Collaboratively identifying, from the initial stages of the process, strategic priorities and concrete actions to support a transformation of public space that fosters beauty, inclusivity, and sustainability.
- Evaluating and monitoring ongoing public space transformations towards a scenario that implies an accessible and sustainable concept of beauty.
- Supporting a systemic view of change through concrete actions backed by qualitative and quantitative data.

Establishing a system of comparison between different contexts to comprehend opportunities and limits of ongoing processes. The model comprises four *drivers* that interpret beauty, inclusivity, and sustainability through “Emotionality”, “Conviviality”, “Plurality”, and “Equity”, derived from synthesizing the existing literature and the participatory process. Specific factors (16 in total) have been outlined for each driver to provide a more detailed description of their qualities. Consequently, metrics associated with each factor have been identified to measure their value (see Table 1).

“Emotionality” refers to the ability of public space to foster an experience capable of generating or supporting a sense of familiarity among the involved communities and with the space itself. It pertains to the capacity to welcome people into the space through pleasant, interesting, and seamless experiences. Thus, it denotes a more emotional and empathetic dimension of the relationship with public space, capable of creating a sense of belonging and care (Fig. 1).

Table 1 Components of the beauty for all model

Beauty for all model		
Drivers	Factors	Outcome indicators
Emotionality	Care	<ul style="list-style-type: none"> – Percentage of people, out of the total number of visitors to MIND, who feel safe to arrive and move around the area by their chosen means, independently, without encountering physical obstacles – The perceptions of new visitors about their sense of security, the sense of welcome they have experienced and their understanding of the directions on their first visit
	Belonging	
	Comfort	
	Meaning-making	
Conviviality	Proximity	<ul style="list-style-type: none"> – Number of chance encounters at MIND that resulted in new meaningful professional relationships – Number of tenants choosing to take part in leisure activities facilitated by informal groups with common interests (e.g., sport, culture) – Perceived sense of familiarity at MIND: people who know each other by sight or by name and the presence of established points of reference within the community
	Social Cohesion	
	Civic participation	
	Interaction/ sociability	
Plurality	Diversity	<ul style="list-style-type: none"> – Number of artistic initiatives and artworks/landmark in the Decumano – The local community’s perception of their own involvement in interactions with the spaces and people of MIND
	Resilience	
	Flexibility	
	Connectivity	
Equity	Inclusivity	<ul style="list-style-type: none"> – Percentage of individuals, representatives of external communities and minority groups, involved in the decision-making group (responsible for decisions on interventions in the transformation of public space) – Percentage of availability of fresh, local meals at a fair price in the vicinity of the Decumano, in relation to the total food supply – Availability of easily accessible, free and well-maintained self-care facilities near the Decumano – Number of services, infrastructure and areas designed to conserve biodiversity and enhance the benefits of inter-species relationships, ensuring equal access and space for non-humans
	Accessibility	
	Safety	
	Empowerment	

“Conviviality” characterizes the experience of public space for its relational and participatory dimension among the communities that utilize it. It refers to the ability to generate connections and foster participation and mutual engagement, involving aspects of inclusion and the creation of social capital.

“Plurality” characterizes public space as capable of accommodating and representing diverse groups and interests, considering transformation not only from an anthropocentric perspective. It also concerns accessing various offerings and initiatives without restrictions or limitations. This dimension is also connected to aspects related to power distribution and representation in decision-making processes.

“Equity” refers to a public space capable of leveraging aspects of social and environmental justice and *pluriversal* approaches. It involves considering accessibility

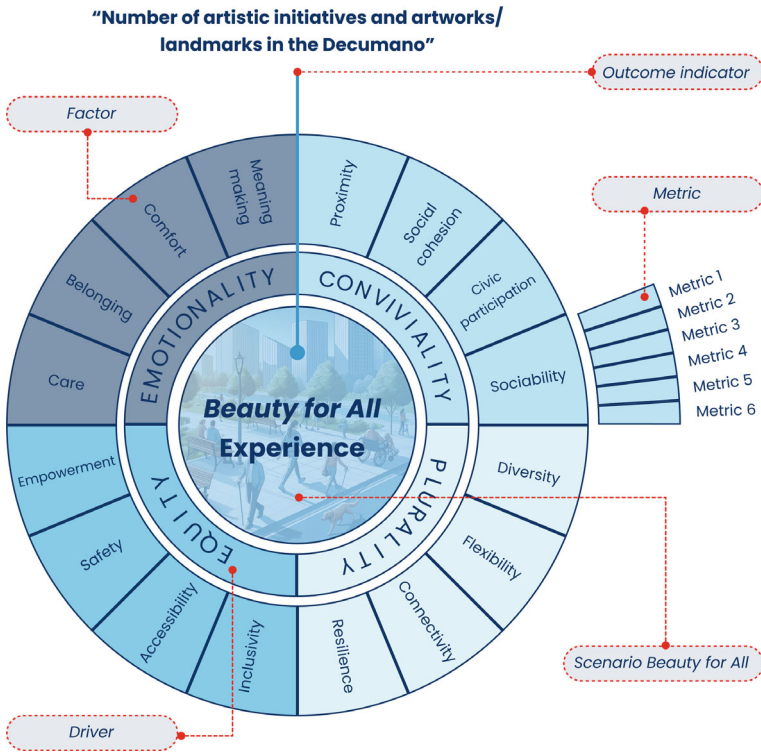


Fig. 1 The Beauty for All Model

in terms of physical, cognitive, and economic aspects and the ability to support individual and collective well-being.

The model proposes eleven output indicators that describe a public space experience (contextualized in the Decumanum) and are easily understandable even by a non-expert audience. These indicators were validated through a focus group that involved external entities such as start-ups, technology experts, an artist, and representatives of communities with physical impairments and neighboring communities. Additionally, eleven interviews were conducted with experts in urban transformation and impact measurement, along with key stakeholders involved in the decision-making process of MIND.

The model and its corresponding indicators were then articulated, identifying possible uses, potentialities, and limitations. In particular, the importance of sharing a set of easily accessible guidelines with various stakeholders to guide strategic choices, support operational decisions, as well as direct public procurement actions, became evident. The “Beauty For All” model serves as guidance to support operational choices for policymakers, decision-makers, researchers, and designers during a temporary transformation phase. What characterizes the framework is the adoption of different levels of interpretation: one more immediate, intuitive, and synthetic, also

directed at non-experts (outcomes indicators), and another more detailed, providing a selection of specific qualitative and quantitative metrics. In the long term, the model offers the possibility of establishing a comparative system between similar situations of urban transformation, enabling the comparison of innovation patterns or critical elements.

3.4 Artistic Installation and Data Collection to Test the “Beauty for All” Framework and Support Legacy

In the concluding phases of the Desire project, an artistic experiment was conducted in public space by placing four benches at strategic locations along the Decumano. This experiment is connected to one of the indicators of the “Beauty for All” framework (Number of artistic initiatives and artworks/landmarks in the Decumano). It fits a project scenario that envisions “A live and vibrant MIND”. An artifact, concretized as a mobile polygonal yellow bench, was created as a local identity marker. The seats and signs have a design and aesthetic in line with the street furniture elements already present in these spaces, street painting, and tactical urbanism interventions. This urban furniture allows the most vulnerable people to take advantage of the benches to rest and allows them to stay longer in the MIND Village area and foster sociality and interaction.

Besides, the processing of the timbers can be done in a workshop or carpentry shop near the construction site, creating a local microeconomic sector and involving professionals and communities liminal to the construction site. This is an activity that generates a relationship and involvement with the “frontages” of the construction site in the activities of temporary uses and setting up the regenerated space. Additionally, the benches were placed in specific locations and monitored for pedestrian flow to understand if and how the physical element influences the quality of the physical space, enabling greater interaction among people and fostering socialization. The experimentation process and data monitoring will continue in the phases following Desire. This small experiment has thus strengthened the process of integrating design, artistic approaches, and technological dimensions to support inclusive beauty, laying the groundwork for further local experiments that follow the identified drivers of conviviality, plurality, equity, and emotionality.

4 Key Learnings

Urban space is a top priority for policymakers, developers, and built environment professionals. Our daily interactions with the spaces where we reside, work, and engage in recreational activities will significantly impact the quality of our lives, the opportunities available, and our personal and communal well-being, identity,

and sense of belonging [14, 15]. This placemaking perspective integrates with skills that adopt a design-oriented lens close to design for services [16], complementary to design disciplines dealing with planning, urban valorization, and transformation. We interpreted the concepts of beauty and inclusivity as interrelated, where beauty is described beyond aspects that focus on the physical and functional perception of spaces but considers relational, empathic, and perceptual elements connected to the users' experiences of a specific context [17, 18].

Placemaking is viewed positively, encapsulating vision, awareness, attention to context and communities, inclusivity, collaboration, and transformative capacity. It emphasizes a forward-thinking approach aimed at instigating positive change. On the other hand, there is a concern that placemaking can be perceived negatively, representing a mere replication of traditional top-down practices without substantially altering the status quo. This interpretation may lead to exclusive, regulatory, designed, and expert-driven processes prioritizing outcomes over the actual transformative process [19].

The focus on beauty and inclusion in public space was shared and socialized among various actors from the early stages of the process to outline shared priorities and align interests. Therefore, it was necessary to support a trust-building process, enabling various actors to engage and incorporate diverse perspectives into the journey. In summary, the key learnings regarding the outcomes of the process that influence the adoption and implementation of the principles of the New European Bauhaus led to some more general reflections:

- *Structure the process through early engagement of power.* This entails involving stakeholders from the early stages of the process, building trust mechanisms, sharing objectives and tools, and aligning diverse agendas regarding priorities. MIND is a complex context where different interests converge to achieve ambitious goals. Coherence between the strategic level, linked to the macro scale, and experiments at the microscale requires constant alignment and verification.
- *Clarify roles from the early stages of the process.* This involves the ability to build a community capable of supporting a long-term transformation path by defining roles, activities, and tools. Numerous initiatives and experiments of various natures and scales persist on MIND; clarifying governance (even on a small scale) reduces the time for decisions, bureaucracy, and stalls. Acting on governance from the early stages of the process is crucial to ensuring continuity in actions and coherence with a broader vision of transformation.
- *Harmonizing existing resources, skills, and activities.* This relates to building on the consolidated knowledge system and learning from what has already been experimented with, drawing lessons from successes and challenges. It involves considering various initiatives and experiments within a broader portfolio, where development can take different trajectories, including scaling up or scaling out processes or coexistence of small demonstrators active only at the micro-scale. Adopting a systemic view to design transformations supports stronger networks, the exchange of expertise between individuals and organizations, and simplifying or strengthening processes already initiated in previous experiments.

- *Incentivize processes and approaches that support “out of the box” thinking.* This refers to the ability to embrace challenges that, in a sense, disrupt everyday mechanisms of thinking and acting. MIND is practically a city within a city, so transformations depend on long-term, multi-layered, and complex processes. Even in small experimental areas, integrating divergent, agile, multidisciplinary approaches helps to include different innovation paths capable of creating blends between large and small scales, large transformation frameworks, and agile and prototypical interventions.
- *Share a reflective, iterative, and critical approach.* This involves reflecting on actions, processes, and tools through an iterative process that generates incremental value. Sharing lessons learned, even with different communities, supports growth for individuals and organizations. Transforming tacit knowledge into explicit knowledge supports the innovation of practices and processes and greater alignment of the different small and temporary initiatives with the long-term and large-scale vision.
- *Consider resistance and fatigue to change as integral parts of the transformation process.* This entails the ability to overcome barriers and resistance to change. The various transformations underway at MIND are part of a larger and more complex system that integrates innovations of different kinds. These involve significant physical transformations, large infrastructures, and changes in individual behaviors and the experience of the area itself. This transformation is, therefore, subject to uncertainty. Processes cannot be planned and designed ex-ante, including partial and temporary solutions. These are systemic transformations, thus subject to different forms of resistance. Considering resistance and fatigue as integral parts of this process helps stakeholders and involved communities gain greater awareness of risks or obstacles to consider in various processes. It is not about “bypassing the obstacle” but integrating different design strategies, adapting to sudden changes, including diverse perspectives, accommodating different project timelines, and considering partial results as meaningful results.
- *Support processes of understanding and analyzing the transformation of urban space beyond meanwhile uses.* This involves considering the transforming space as a perpetual research and experimentation laboratory. What has been learned through experimentation at MIND is the need to understand, analyze, and evaluate how this space transforms from an architectural or infrastructural perspective and the different *senses* and purposes the space acquires during the different transformations. Observing a “permanent temporary” place is extremely interesting from a design and research perspective, as it involves understanding various temporary solutions (beyond different uses), evolving relationships, changes in the perception of the place, dynamics of experience, and so on. In this sense, MIND appears to be a privileged place of observation when dealing with urban transformation.

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Listening to a Place from a Multispecies Perspective Through Aesthetic Practices in Herlev



Siv Werner and Madeleine Kate McGowan

Abstract This chapter describes the arts and urban development project “The Garden Caretaker”, an interdisciplinary project that connects artistic practice, architecture, citizen involvement, urban development, and the multispecies perspective. The project takes place in Herlev, on the outskirts of Copenhagen, Denmark. Through its activities, “The Garden Caretaker” fosters connections among humans, non-humans, and their shared local environment. The project serves as a demonstrator site for the NEB lighthouse *Desire—Designing the irresistible circular society* initiative, exploring how fields of aesthetics, urban planning and biodiversity contribute to a greener, more inclusive urban transition.

Keywords Artistic practices · Garden Caretaker · Multispecies · Biodiversity · Green transition · Sustainable urban development

1 The Garden Caretaker

1.1 *Exploring a Place in Transition from a Droplet-Shaped Greenhouse*

Like a gigantic raindrop fallen from the sky, on the outskirts of an old industrial compound in suburban Copenhagen, lies a shiny, spherical construction (Fig. 1). It does not resemble any of the other buildings in the neighborhood, and has, with its transparent and round structure, an apparent fragility. The droplet-shaped greenhouse, or simply “The Droplet” (by Atelier Kristoffer Tejlgaard), is the physical platform of the arts and urban development project, “The Garden Caretaker”,

S. Werner (✉) · M. K. McGowan
NXT, Nybrogade 26a, 1203 København, Denmark
e-mail: siv@nxtbrand.dk

M. K. McGowan
e-mail: madeleinekate@nxtbrand.dk



Fig. 1 “The Droplet” by Kristoffer Teilgaard. Original image by Siv Werner, used with permission

which explores how sensitivity toward urban nature and its manifold beings might be enhanced through various artistic practices. Here, one is neither outside nor inside—or rather, one is precisely both.

The specific location of “The Droplet” is on the corner of a large construction site in Herlev, Denmark. Once upon a time, this place was a lush meadow with grazing livestock and herding pathways forming the landscape. Small farmsteads were scattered across the land and in between were fields and grasslands.

Over time, the area transitioned from farmland to village, and in the 1950s, construction of a new hospital began in Herlev. This contributed to a growing number of inhabitants and a new industrial adventure started to take shape. By the 1950s and 1960s, the area was characterized by industry with large and small craft businesses mixed with manufacturing companies and processing plants. In 1969 an asphalt factory was built at the property of Hørkær 8 as part of the industrial development of the area [1]. The asphalt factory operated for more than 50 years, but in 2022, the factory was closed and the building demolished. The land was sold to a private developer, opening new possibilities.

At the time of writing, the site is undergoing construction well on its way to becoming a residential housing complex of 445 rental apartments in seven stories (34,155 square meters floor area). This new construction project is part of a larger urban development project transforming the entire Hørkær area in Herlev from industrial stronghold to a green residential neighborhood. Due to this ongoing transition, the place is characterized by a rough landscape, deconstructed and with almost everything—trees, bushes, buildings—leveled to the ground. The area is noisy and affected

by heavy machinery. From a multispecies perspective, it's fair to say that the living conditions are far from ideal.

The Herlev Municipality's district plan for Hørkær 8 and surrounding properties determines the laws and regulations for development in the area. The district plan specifically for Hørkær 7–9 (15,109 square meters total area) prioritizes residential housing with accessible green urban areas between the buildings and “opportunities for recreation and play” [2, p. 8]. However, there are no guidelines or plans outlining how this community might be fostered or how the identity, qualities, and atmosphere of this new neighborhood could be strengthened and developed.

1.2 Where Art Takes Root

Our global civilization is facing an immense and complex challenge. Interconnected issues such as the climate crisis, biodiversity loss, rising inequality, pandemic threats, and migration—collectively known as a polycrisis—are reshaping life on our planet. These challenges highlight the urgent need for comprehensive strategies that address both environmental and social dimensions, aiming to build resilience and equity within our communities. As a society, we have become disconnected from our natural environment and we—specifically in Western society—more often engage with the world as something to dominate, perceiving it as a series of objects to know, acquire, conquer, or exploit [3]. This pervasive drive to control is hindering our ability to form meaningful and reciprocal relationships with the world around us. In other words: the human species has become separated from our natural habitat and source of life to such a degree that we no longer recognize “nature” as part of ourselves and vice versa. Furthermore, when we are separate from nature, we are also separate from each other.

Consequently, to restore this fundamental bond, we must radically rethink how we live, act, and exist—globally, regionally, and locally. While addressing these complex issues and finding solutions can often feel overwhelming, we must have the courage to believe in our capacity to act and our ability to make a lasting impact.

In our project, “The Garden Caretaker”, this is the point of departure for our investigations and experiments. From the field of ecological thinking, speculative design, and aesthetic practice, we set out to explore how sensory and artistic practices can stimulate a sense of belonging while fostering interspecies connections and reconnecting cityscapes with nature. By embracing artistic practices that are specifically rooted in ecological thinking and community engagement, particularly at the local level, we sought to cultivate spaces that support diverse life forms and promote a sense of kinship with our natural surroundings and non-human neighbors.

2 Dissolving the Dichotomy

“The Garden Caretaker” is essentially a new character in society; An artist, a neighbor, a custodian of the landscape, a host with soil under their fingernails. “The Garden Caretaker” stimulates habitability for many species through artistic and aesthetic methods. They are a hybrid character, who invites people to a sensory encounter with a place, its microbes, flora and fauna both inside “The Garden Caretaker” greenhouse and further out into the urban landscape. A character who invites you to stop, listen and be sufficiently present to experience an active nature which humankind is both deeply enfolded within and profoundly dependent upon. “The Garden Caretaker” does not regard nature in the city as invasive or human beings as invasive in nature. Instead, “The Garden Caretaker” dissolves this dichotomy.

“The Garden Caretaker” works in the intersection of aesthetic practice [4] and speculative thinking [5]; it is a design proposal based on a regenerative approach to city development. It is a result of an interdisciplinary method named *Being of Place* developed by NXT that registers and maps site-specific qualities on a site. “The Garden Caretaker” concept was created in 2021 for NXT by Madeleine Kate McGowan in collaboration with Inga Gerner Nielsen, Oliver Maxwell, Nikoline Kern, Dominic Balmforth and realized with Siv Werner.

“The Garden Caretaker” takes up the role of recognising and nurturing multi-species kinship [6, 7], stimulating human and non-human actors co-creating their environments through lived experiences [8]. Moreover, it explores the intricate relationships between species and their habitats, offering a perspective on how artistic practices might bring these interactions to the forefront, creating a narrative that enhances the sense of place for all species involved [9] expanding the idea of ecological awareness [10].

From this perspective we ask, how can artistic encounters, with the artists’ ability to garner our attention through poetic language, a work of art, or a sensuous experience, create a space in which we as individuals can be moved by stimulating a shift in a person’s emotional state, perspective, or understanding? How could aesthetic practices contribute to the cultivation and reinforcement of a sense of place within multispecies communities? In a society where many feel alienated from the world due to a crisis of belonging, how might “The Garden Caretaker” redirect us to see our natural surroundings from a sensuous perspective, to let ourselves be affected by it, and to interact curiously with our fellow species?

Moreover, we ask how can promoting a multispecies approach contribute to the development of an economy for urban coexistence, thereby advancing knowledge creation and fostering the emergence of an irresistible circular society based on multispecies communities? How could such an economy be fostered through the development of programmes that focus on a multispecies perspective?

Finally, how can a temporary physical representation of the experiment, such as “The Droplet”, facilitate the exploration of possibilities for transformation in each environment?

3 Exploring Place Through Various Aesthetic Practices

“The Garden Caretaker” project integrates a variety of activities, including arts-based research [11] and site-specific artistic practices that actively involve citizen participation. Additionally, the project is shaped by principles of ecological thinking, drawing on the work of thinkers such as Latour [12], Deleuze and Guattari [13], and Haraway [6]. Artists play a vital role in fostering relationships between different life forms, cultivating a deeper sense of environmental responsibility. These interactions create an interconnected ecosystem that reflects the concept of Desire—an irresistible circular society where all elements are in continuous dialogue.

At the same time, the project is carried out as an experiment, aiming to test various approaches, methods, and tools to facilitate this interaction, such as social art pieces, sonic landscape walks, and poetic multispecies storytelling. These activities stimulate aesthetic and sensory learning processes, fostering reconciliation between human inhabitants and the natural landscape, while also promoting the establishment and strengthening of the network, fostering an inclusive and engaged community. In particular, a key approach in “The Garden Caretaker” project is the “Being of Place” method developed by NXT. This interdisciplinary method registers and maps site-specific qualities of a place, for instance, before a site is developed. By conserving and amplifying the inherent qualities of a place, this method sets up preliminary work that balances human development with the preservation of the natural environment, focusing on ecology, culture, history, and aesthetics.

Before the one-year phase of inhabitation and experimentation, NXT launched an Open Call for artists to apply for “The Garden Caretaker” residency in Herlev. The project received around 50 proposals from artists worldwide. The Open Call framed the project within an ecological aesthetic, emphasizing artistic practices that involve sensing the place and engaging the local community. The NXT staff curated and organized the residency to include five distinct artistic interventions at the site, each reflecting a unique artistic practice. Finally, five “Garden Caretaker” projects were selected to take place in Herlev in the context of Desire (see below Table 1).

The first “Garden Caretaker” was author and poet Helene Johanne Christensen. Her residency centering on the exploration of place through creative and poetic writing. Helene Johanne Christensen spent her time between exploring and writing, delving into the habitat surrounding Hørkær. From within “The Droplet”, Helene Johanne Christensen produced different bodies of text, experimenting with various genres, some of which she shared with inquisitive listeners during her residency. Bringing with her a collection of books for inspiration, Helene Johanne Christensen dedicated time to reading and research. She was particularly fascinated by different methods of describing or sensing place through text, drawing inspiration from influential artists and writers such as Simone Weil, Tim Ingold, Mary Oliver, Georgia O’Keeffe, and Rebecca Solnit, among others. From the outset, Christensen was explicit about her goal as “The Garden Caretaker”: to develop a unique method for sensing place through a written practice. She refers to this approach as the Method of Attentiveness:

Table 1 List of the Garden Caretake projects

	Garden Caretaker	Artistic practice	Residency
1	Helene Johanne Christensen	Creative and poetic writing	April 11–24th 2023
2	Georg Jagunov	Multi-disciplinary, installations and living sculptures	August 6–20th 2023
3	Arendse Krabbe	Multi-disciplinary, sound, collected objects and “listening situations”	September 11–24th 2023
4	Davide Ronco	Ceramic artist, sculpture and rammed earth	October 23rd–November 23rd 2023
5	Daily Fiction with Tora Balslev and Felia Gram-Hassen	Performance, dance and sound	February 19th–March 3rd 2024

My project is about cultivating and developing what I call the Method of Attentiveness, which is a way of getting to know a place. I use writing as a tool and as a magnifying glass. The intention is to become better at seeing by writing about the place and its inhabitants—both human and non-human—that exist here.—Helene Johanne Christensen

As Garden Caretaker Helene Johanne Christensen invited 10 people to participate in a free two-day workshop. The workshop was open to all, regardless of their experience in writing. It had an open and inclusive approach and sought to garner attention towards everyday life, to stimulate our senses and to use writing as a tool to connect with the non-human realm. Intended participants were locals from the greater Copenhagen area as well as people in NXT's community and from the artists' network. Information about the workshop was distributed throughout Herlev (e.g., in the library, community center, supermarket, and train station) in print and posted online. The NXT staff administered the signup and communication with the participants as well as helped with the organizing and the practicalities around the workshop, and thus the event was carried out as a co-facilitation between “The Garden Caretaker” and NXT.

The two-day workshop consisted of different assignments and practices carefully instructed by the author, and included reading-listening sessions, writing letters, a walk in the area, looking and noticing, writing poems to birch trees, and sharing and reading the created texts out loud. The workshop concluded with a poetic session where the participants wrote and posted a letter in a pink envelope from the perspective of another species, which then was exhibited from inside “The Droplet” for the following week along with photographs and printed texts by Helene Johanne Christensen.

The overall aim of the first “Garden Caretaker” iteration was to test how written artistic practice and the creation of poetic text can facilitate connections between humans and their local surroundings—or in Desire terminology, to “reconcile cities

with nature” through a textual practice. “The Garden Caretaker” used a field notebook throughout the residency, which inspired the NXT staff to continue this format throughout the four other “Garden Caretaker” residencies.

The second “Garden Caretaker” in Herlev was the multi-disciplinary artist Georg Jagunov. His artistic practice explores geological history with the aim of bridging our shared past and future and his work spans the intersection of installation and digital art, as well as landscape design on both micro and macro scales. Georg Jagunov’s approach integrates knowledge of minerals, stones, plants, and soil with artistic, performative expression and storytelling, while inviting people to engage and participate in his creative process. During his residency, Georg Jagunov utilized locally sourced natural materials, such as moss and flint, to create site-specific, living sculptures both inside and outside “The Droplet”. His work sought to revive the ancient connection between humans and the natural world. Through performative walks and interactive installations, he engaged the community in experiencing these materials in new and meaningful ways. Additionally, he exhibited a variety of objects, including flint arrowheads and rock formations, within “The Droplet”, making these artifacts visible and accessible to passers-by.

As “Garden Caretaker”, Georg Jagunov invited both individuals and groups to engage with his practice during designated “opening hours” at “The Droplet”, known as the Open Greenhouse. This concept was developed following the first iteration of “The Garden Caretaker” to attract more visitors and involve locals in the project. The NXT staff assisted in facilitating meetings and arranging collaborations with various participants, including organizing a workshop with the local kindergarten, Børnehuset Edison, which was a neighboring institution that had just opened in the area. Thus, both children and teachers from the kindergarten participated in a session where Georg Jagunov showcased various artifacts and stones that the children could touch and hold. He told exciting stories about the stones and where they come from. For example, he explained why he always keeps his flint stones in a tub of water: Flint is a special type of rock that has tiny bits of water inside it. This water helps keep the rock strong and looking nice. If flint is left out in the air for too long, it can get dry and crack. So, by keeping the stones in water, Georg makes sure that the flintstones stay content and in good shape. This resonated so well with the kids (ages 2–4), who were eager to come back and visit other “Garden Caretakers” and to explore their surroundings further through an aesthetic lens. Hence, an agreement was made to continue the collaboration with the following artists.

The third “Garden Caretaker”, Arendse Krabbe, is a visual artist who works at the intersection of sound, installations of found objects, and theories of “deep listening” within a social arts practice. As “Garden Caretaker”, she explored the area and developed a series of sessions she called “Listening Situations.” In these sessions, Arendse Krabbe partially guided and partially performed a range of sound baths and sensory, almost meditative, experiences for participants. She used installations, homemade musical instruments, and objects found in the area—withered leaves, snail shells, pinecones, plastic lids, and many other artifacts that, when handled correctly, can produce various sounds.

Arendse Krabbe collaborated with several local institutions, including the kindergarten, Edison, an activity center for children and young people with disabilities, Mindsteps, and the local Social and Healthcare Assistant School, SOSU H. Through specially designed sessions, she invited these different groups to engage in the sensing of place through soundwork and instructions. Both staff and students from SOSU H participated in several sessions and were eager to take part in her project. The collaboration with the local institutions in Herlev centering around the concept of “care” as a core value shared by all participants: Arendse Krabbe, as “The Garden Caretaker”, is an artist who engages with the community and facilitates meaningful encounters and experiences that connect us to the natural world; the kindergarten, as an institution that integrates care both pedagogically and practically in its daily routines; SOSU H., which focuses on training new professionals for the healthcare sector; and Mindsteps, which plays a crucial role in physical and mental support and training. Some participants from Mindsteps were wheelchair users, some were non-verbal. They all had a caregiver with them, who also took part in “The Garden Caretaker” listening session. Despite the diversity in ages, professions, abilities, and functions, we found that these different groups of participants reacted much in a similar way to the aesthetic experience. Many expressed calmness, gratitude, and joy. Some even expressed deep feelings and signs of being moved in an emotional way. Some spoke of memories and of new understandings and realizations.

The fourth “Garden Caretaker” was ceramicist and sculptor Davide Ronco. His practice is grounded in expertise with local clay, various soil types, ceramic sculptures, and landscape art. Davide Ronco’s methodology is rooted in his personal experience, artistic practice, and the need to address sustainable practices in relation to climate change and geopolitical issues through his work. This necessity, both personally felt and societally imposed, drives him to make sustainability the core focus of his projects and their outcomes. He engages in various expressions and practices, for instance by creating interactive installations, where participants either contribute to the creation of the work or play a role in its deconstruction.

As “Garden Caretaker”, Davide Ronco worked with different types of clay and soil that he excavated from the area around the old asphalt factory in Herlev. Through workshops, he invited people (e.g., the kindergarten, construction workers, a biologist from Cph ZOO and locals) to participate in creating a collaborative artwork: an installation of “rammed earth” bricks, which he installed on a greenfield behind the construction site.

The workshops played an important role and became as integral to the artwork as the physical installation itself. The outcome was not only a physical installation but also served as documentation of the work. This knowledge helped in creating new work. I experienced a constant cycling from workshop to artwork, where, because the installations did not leave any long-term physical impression, they remained present in the memory of the community that had participated.—Davide Ronco

Davide Ronco spent a significant amount of time producing and drying the over 200 bricks that comprised the artwork. Since the bricks were not fired but were instead compacted and dried, the piece became a temporary, site-specific artwork that lasts as long as weather conditions allow. For Davide Ronco, the creation process was

a crucial part of the work, which was heavily influenced by the relationships with participants (both human and non-human) formed during his residency.

The fifth and final “Garden Caretaker” project in Herlev was led by the duo Daily Fiction, comprising artists Tora Balslev and Felia Gram-Hanssen. Tora Balslev brings expertise in performance, dance, and total theater, while Felia Gram-Hanssen specializes in music, sound, and video production. As “Garden Caretakers”, Tora Balslev and Felia Gram-Hanssen immersed themselves in the narratives and sensory experiences of the site. They spent considerable time on the construction site, engaging with both the physical materials and the living elements—both human and non-human—that populated or spent time in the area. Their exploration was multi-faceted: they used listening devices, video cameras, and their own bodies to investigate the environment. They performed as roots emerging from asphalt and collected seeds from ancient linden trees, which they affectionately named “The Elders.” Throughout their residency, they conducted a workshop for a group of 20 master’s students from Aalborg University in Copenhagen, facilitating an immersive and interactive experience. Their project culminated in a participatory exhibition, showcased on the final day of their residency. The concluding event was a reflective presentation for participants, combining elements of both performance and dialogue. They orchestrated an audio walk that guided the group through a specially crafted soundscape, enhanced by verbal (recorded) instructions. This journey encircled the construction site, ultimately leading participants to the construction workers’ break room, where a film screening rounded off their engaging exploration.

4 Transformative Encounters and Interwoven Futures: Shaping Sustainable Urban Landscapes and Engaging Local Communities Through Art

Throughout “The Garden Caretaker” project, several key insights emerged, highlighting both successes and areas for refinement. These reflections offer valuable lessons on the effectiveness and—more importantly—the depth of the activities conducted and their alignment with the goals of urban transformation, as well as their connection to lived experiences.

A significant success of the project was the evident connection participants felt to the place. Artistic encounters have the power to deeply engage us by drawing on the artists’ unique ability to captivate through e.g., poetic language, visual art, or sensory experiences. These encounters create a space for introspection and connection, inviting us to experience the world in new, more meaningful ways. As a result, several participants expressed a profound sense of attachment to the area, demonstrating through both words and body language that they were emotionally moved and felt a deep connection to the surroundings in Herlev. Participants also voiced a newfound curiosity and eagerness to explore the urban nature and the myriad of elements it offers. This heightened interest stimulated their ability to notice their

environment more acutely and engage more meaningfully with the multispecies community at the site.

The project underscored the importance of spontaneous interactions and embracing the vulnerability that comes with an open approach, such as “The Garden Caretaker’s” format. Working at the intersection of social arts, performance, and urban development proved valuable in fostering genuine connections and responses from the community.

One of the most impactful lessons was the power of interdisciplinary collaboration and stakeholder engagement. By integrating diverse perspectives from artists, scientists, community members, and developers, “The Garden Caretaker” initiative facilitated rich dialogue, creativity, and artistic expressions. This interdisciplinary approach not only enriched the project’s outcomes but also amplified its relevance and impact within the local community. The project’s success was largely attributed to the collective expertise and diverse viewpoints brought to the table, guided with care and insights by the participating artists.

Empowering actors and communities emerged as a cornerstone of the project’s achievements. Actively involving local institutions in co-creation workshops and artistic interventions on site cultivated a sense of bodily knowledge and connection among community members. This sensory and aesthetic engagement with place and species not only enhanced the project’s authenticity and relevance but also contributed to its long-term sustainability and resilience. Empowering communities to become agents of change is crucial for fostering meaningful and enduring urban transformation.

The project also highlighted the importance of continuous learning, adaptation, and evaluation. While certain activities produced positive outcomes, others yielded results that were different from what was anticipated. Ongoing monitoring, evaluation, and feedback mechanisms are essential for understanding what works and what doesn’t, allowing for informed adjustments moving forward. Flexibility and responsiveness to evolving challenges and opportunities were key to the project’s adaptability and aim to stimulate sensitivity towards urban nature through artistic practices.

In conclusion, “The Garden Caretaker” project provided valuable insights into the complexities of urban transformation and the potential of interdisciplinary collaboration, aesthetic practices, stakeholder engagement, and community empowerment. The project achieved notable successes, positively impacting the local community. However, continuous learning, adaptation, and collaboration remain essential for creating meaningful and lasting change in urban environments. In a society where many feel disconnected from their surroundings and from each other, “The Garden Caretaker” offers a transformative perspective. By encouraging us to experience the natural world through a sensuous lens—one that prioritizes touch, smell, sound, and sight—it invites us to be present and open to the subtleties of our environment. Thus, the experiences from “The Garden Caretaker” project suggest that it is possible to reawaken our sense of wonder and engage with our fellow species in ways that are nurturing, reciprocal, and rooted in a shared experience of place, by implementing artistic methods in urban transformation.

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Co-creating a Future Green Vision to Empower and Amplify Synergies in BTC, Ljubljana



EMA HENIČ AND ANDREJ JANKO

Abstract BTC City Ljubljana, a significant retail park in Slovenia, is an experimentation site in the Desire project. BTC, in collaboration with the CER-Sustainable Business Network, worked on experimenting with urban greening, biodiversity, and climate change adaptation. The project engages diverse stakeholders, including businesses, academia, and the local community, to co-create a sustainability strategy for BTC City 2025–2030. Key activities run under Desire include workshops, hackathons, and exhibitions, which foster collaboration and generate innovative solutions such as reducing carbon emissions and enhancing green spaces to combat the urban heat island effect in line with current EU policies. This chapter shows how the experimentation also implements concrete measures, including planting trees and developing green corridors to improve microclimate and biodiversity. Through its Green Star Sustainability Certification and a strong emphasis on stakeholder engagement, BTC City builds a collaborative network for its green transformation. The Desire project demonstrates how systemic collaboration, clear leadership, and community empowerment can drive meaningful environmental change, positioning BTC City Ljubljana at the forefront for the transition to urban sustainability.

Keywords Urban greening · Biodiversity · Climate change adaptation · Stakeholders engagement · Sustainable business · Green Star certificate

E. Henič
CER – Sustainable Business Network, Ljubljana, Slovenia
e-mail: ema.henic@cerslo.si

A. Janko (✉)
BTC, Ameriška ulica 2, BTC d.d, Ljubljana, Slovenia
e-mail: andrej.janko@btc.si

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1 Context

1.1 BTC City Ljubljana Identity and Partners

BTC City Ljubljana is classified as a retail park-style shopping center and managed as an open-air scheme, it comprises a variety of standalone retail and office facilities as well as facilities in shopping arenas or business towers. With 475,000 square meters of surface area, 8,500 parking lots, 255,000 square meters of business premises (retail, office, and storage area), more than 450 shops, 70 food and drink vendors and other services for example Atlantis Water park, Sports center Millenium, SiTi Theatre, banks, post office, carwash, pharmacy, diagnostic center, dance studio, etc. The area attracts 21 million visits per year. BTC City Ljubljana is in the eastern part of Ljubljana within only 3 km of the historical center of the city.

BTC City Ljubljana in cooperation with CER Sustainable Business Network is one of the eight demonstrator areas in the Desire project. The BTC Company is one of the leading commercial property development companies in the region. Under the brand name BTC City, it manages one of the largest shopping, business, entertainment, recreational, and cultural centers in Europe, located in Ljubljana, the capital of Slovenia. Additionally, it also manages two shopping centers in Novo mesto and Murska Sobota and provides first-class property management services for the largest Slovenian clients in the commercial real estate service sector. The BTC Company also runs a logistics service business unit which holds the leading market position in FMCG logistics in Slovenia. CER is the largest sustainable business network in Slovenia bringing together over 100 companies, various esteemed experts, and international organizations. CER's work in the Desire project is primarily based on open dialogue, involving as many stakeholders as possible, and building trust and cooperation between different stakeholders. The focus is to encourage companies of all sizes to bravely embark on the path to green transformation by providing information, empowerment, cooperation in sight of reduction of emissions, understanding circular business models, and measuring and reporting ESG data. The way to do it is to find ways to change business models and help design new products and services that will have a reduced negative or even positive impact on the environment and climate. CER network aims for an ambitious, decisive, and responsible approach to addressing different issues the area of BTC City is currently facing.

Within the Desire project BTC City and CER developed solutions regarding a vision of BTC City 2050 as well as urban greening, biodiversity and addressing climate change are put into practice with collaboration and help of different stakeholders through workshops, hackathon, and Desire exhibition.

1.2 A Set of Policies Supporting the BTC City Experiment

The demonstrator activities run within Desire aim to avoid the harmful and destructive effects of climate change, encouraging each other to accelerate the pace and scale of innovation and investment in low-carbon solutions. Such activities plug into a broader policy context that is stimulating action towards Climate neutrality and sustainability. The “European Green Deal” [1] is a strategy for the transformation of the EU into a fair and prosperous society with a modern, competitive and green economy, which will eliminate the net emission of greenhouse gasses by 2050 and eliminate products that cannot be recycled. But this transformation must be fair and inclusive for all EU citizens—putting the most vulnerable people first. On 9 October 2023, the last pillars of the “**Fit for 55**” legislative package to achieve the EU’s 2030 climate goals were adopted [2], namely the adoption of the revised Renewable Energy Directive and the ReFuelEU regulation on aviation. Thus, the EU now has legally binding climate targets for all key sectors of the economy.

As BTC City is a business site with its own real estate, and road infrastructure the most important pillars of Fit for 55 plan for BTC City are:

- The alternative fuels infrastructure regulation—sets concrete targets for deploying such infrastructure in the EU in the upcoming years.
- Energy performance of buildings directive (EPBD)—sets new, more ambitious energy efficiency standards for new and renovated buildings.
- Energy efficiency directive—reduces the final consumption 1,9% by 2030.
- Renewable energy directive—42,5% consumption of energy from renewable sources by 2030.

Moreover, the Government of the Republic of Slovenia has adopted the Integrated National Energy and Climate Plan (NECP) [3] in accordance with the European Regulation on the Governance of the Energy Union and Climate Action. It is a strategic document laying down the objectives, policies and measures for Slovenia on the five dimensions of the Energy Union for the period up to 2030 (with a view to 2040): decarbonisation (greenhouse gas emissions (GHG) and renewable energy sources (RES), energy efficiency, energy security, the internal energy market and research, and innovation and competitiveness [4]. The NECP is one of Slovenia’s key steps towards a climate-neutral Slovenia and EU by 2050 and will be followed by the adoption of the 2050 Long-term Climate Strategy to which the Desire activities are strongly linked as CER has regularly participated in the NECP update process.

Ljubljana is one of the 100 climate-neutral and smart cities of the EU [5]. The Mission for climate neutral and smart cities supports, promotes and represents 100 European cities in their transformation to achieve climate neutrality by 2030 and help them become experimental and innovation centers for all cities. The municipality of Ljubljana signed a climate agreement with relevant stakeholders to achieve the mission, among them were also BTC City and CER Business Network. This consists of a written commitment by all stakeholders to work together for sustainable development, with as few negative effects on the environment as possible. An

integral part of the contract is an action plan, which covers the current state of emissions and measures to achieve climate neutrality, and an investment plan, which defines specific projects.

Finally, the EU Corporate Sustainability Reporting Directive (CSRD) [6] has the ambitious goal of requiring transparent, comparable and trusted sustainability reporting from over 49,000 EU-based companies as well as subsidiaries and global companies. To support this, the European Financial Reporting Advisory Group (EFRAG) was tasked with developing the European Sustainability Reporting Standards (ESRS) [6], a set of standards detailing the reporting rules companies will need to follow to comply with the CSRD. In accordance with the European Green Deal, the development of environmental regulations, the increasingly noticeable consequences of climate change and the traditionally responsible attitude towards the environment, BTC City is embarking on the path of green transformation more decisively and at an even faster pace and in close cooperation with its stakeholders building on a long-lasting tradition that have seen the company active on such goals for the last 20 years. It is appropriately upgrading its current strategic guidelines in the field of sustainable development. New sustainable strategy for the period 2025–2030 will comprehensively and far-reaching respond to the upcoming climate challenges in connection with BTC's activities and BTC City Ljubljana site, considering an approach based on natural, safe, and prudent solutions.

1.3 Addressing Urban Heat Island Effect in BTC City Ljubljana with Urban Greening

BTC City, as well as other larger areas in the city of Ljubljana, face the problem of the urban heat island effect (UHI), which is a phenomenon where urban or metropolitan areas become significantly warmer than their rural surroundings. This temperature difference is most noticeable during the evening and night. BTC City has a high concentration of buildings, roads, and other infrastructure made of materials like asphalt, concrete and metal. These materials, specifically asphalt on large parking areas, absorb and retain heat more than natural landscape, especially in the summer months. The fact is that summers are getting hotter, and high temperatures persist over a longer period than in the past. The consequence of this is also an increased energy consumption due to increased demand for air conditioning which causes higher emissions. Since 2010, the BTC company has successfully implemented its energy policy by introducing the most modern technological solutions and actively monitoring and measuring the effects with a modern energy management system (EMS), which is certified according to the ISO 50001 standard. The BTC company strives to implement continuous improvements in various areas, namely in the field of efficient energy use as well as in the search for alternative or renewable energy sources. The main challenge is improving the energy efficiency of the buildings, and solving this challenge requires intensive investments in building renovation. Intensive

urban greening of the area and buildings in BTC City Ljubljana is vital for adapting to climate change as well as ensuring well-being for our visitors.

2 Co-creating Strategic Action Plans

The Desire project focused on engaging business partners, academia, cultural associations, NGOs, and Gen Z and Ljubljana citizens in collaborative workshops, hackathons and exhibitions to develop a sustainable vision for BTC City Ljubljana 2050, which serves as a foundation for a comprehensive sustainability strategy 2025–2030 and its operational plan. This vision is not just a blueprint but a dynamic framework guiding the implementation of sustainability strategy and urban greening activities. As within the project the Green Star Club, a virtuous certification system for businesses has been established, as a testament to the project's success, we would love to see partners within the Green Star Club and Green community to continuously grow as well as to start planning and executing their own sustainable projects, based on their green star assessment and certification, consequently driving a collective impact that extends beyond the Desire project timeframe.

By organizing two workshops in 2023 and a hackathon in 2024, the project gathered diverse inputs to create a future sustainable vision. These workshops not only raised awareness among partners but also set the stage for planning future activities, ensuring that all stakeholders are aligned in their sustainability goals. Workshops involved gathering various interpretations of an “irresistible society” from stakeholders, including visitors, employees, and business partners.

Building on the valuable insights and contributions of our stakeholders, CER and BTC have jointly developed key messages and concrete activities that will be integrated into the greening strategy. With input from experts from architecture, landscape architecture, botanists, arborists and other expert stakeholders an actionable plan that would improve urban green spaces and boost biodiversity was developed. These efforts aim to improve microclimate of the area, consequently improving well-being of our visitors, and overall adapting to climate change.

In the long term, we would love to see the vision as well as sustainable guidelines and strategies developed also adopted or at least influenced by other partners within the green community. The implementation of sustainable projects would not only future proof their businesses but would also strengthen the green identity of the BTC City Ljubljana.

Awareness of the benefits of participating in the Green Star Club grows among business partners, encouraging new partners to go through the Green Star certification process, helping them to track and showcase their sustainability progress. This also fosters a sense of belonging, creating a movement, sharing experiences and knowledge, and encouraging them to strive for even higher sustainability standards.

3 Site Experience

The project's goal was creating a transformative, sustainable and inclusive vision of the BTC City area, that would reflect all stakeholders and representatives of the site. In reflection of that we would need to reach for many different stakeholders of all ages and backgrounds, to ensure that everyone is represented in this cohesive vision.

To set up the network firstly the stakeholder mapping was executed [7]. After clear information of the primary, secondary and other stakeholders, numerous workshops and meetings were held with different stakeholders. An inspiring workshop brought together stakeholders from various sectors to envision a sustainable future for the BTC City area in Ljubljana. Representatives from the education, culture, business and creative sectors came to share their ambitious ideas and worked together to create a vision for the area in 2050. The activity aimed to promote innovation and ideas for improving social and environmental responsibility of all those operating in the area who want BTC City to be a vibrant and environmentally friendly urban space by using a tool "storytelling method". Participants proposed the provocative idea of transforming the BTC shopping area into the first shopping center in the region without advertising spaces. Instead of relying on traditional advertising methods, retailers would explore creative and sustainable approaches to attract customers, such as interactive digital displays or more immersive shopping experiences. The aim of this initiative is to reduce visual clutter, promote a transition from the classic way of consumption and create a unique shopping environment. A key advantage was pointed out, namely that the area lives even after the closing hours of shopping centers and office buildings. In the area, there are open-air event spaces for the needs of theater, concerts, conferences and other cultural events.

Since in the future BTC City area wants to move away from the idea of the classic area of consumption, in 2050 it should also include the production of sustainable products that could stimulate the local economy. Therefore, the most influential actors in the BTC City area are business partners (e.g. all the retailers, service providers and businesses that have their offices on the premises). A specific workshop, designed to strengthen connection to the place followed the principles of belonging and biodiversity, was held and supported the development of a better understanding of the area the different partners are cohabitating. The workshop also focused on numerous innovative solutions that are being developed and used all over the globe.

Another workshop was designed in a way that partners could choose one or more challenges of the BTC City area and present their vision, what they could do to help the area achieve its goal as well as the resources and partners needed for implementation. One of the key visions of the gathered stakeholders was the transformation of the BTC area into an (almost) car-free zone. Stakeholders recognized the importance of reducing carbon emissions and prioritizing alternative modes of transport. By eliminating cars within the area itself, it would become more friendly to visitors of various age groups and would encourage an active population and sustainable mobility. Visitors would leave their cars in the P&R parking lots on the outskirts of

the area, and from there various alternatives would be available that promote sustainable mobility (footpaths, bicycles, electric bicycles, electric vehicles, etc.). This shift would encourage people to explore the area on foot or by bike, creating a healthier and more vibrant community.

To increase the promotion of micro-mobility and the retention of visitors in the BTC City area, it should first be aesthetically interesting and attractive. Participants suggested focusing on aesthetic improvements to the entire area. Incorporating innovative architectural designs, contemporary art and vibrant, inclusive outdoor space would make the area attractive and inviting. The participants emphasized the importance of creating an environment that would attract people to travel through the area with their bicycles and promote a healthier and greener lifestyle. The participating stakeholders recognized that for a radical transformation it would be necessary to replace almost the entire existing infrastructure. They agreed on the importance of mapping the existing materials in the area and using only these either in a complementary way, where the existing structure would be kept, and building in height with sustainable materials, or to use these materials in another part of the area (benches in the park, playgrounds, roofing for stalls, etc.).

During the Desire journey, empowering actors and communities was an important mission of BTC City. We focused on that by giving the voice to tomorrow's generation—Gen Z. In the Crystal Palace, the highest building in Slovenia that is also in BTC City, six groups of high schoolers and students from different faculties in University in Ljubljana had a unique opportunity—to co-create the future of BTC City and create a vision for the year 2050. They were looking for ways to attract visitors, connect different stakeholders and design sustainable solutions for life, work, living, and free time. The 30-hour challenge turned the 475,000 square meters of BTC City into an experimental polygon for generating ideas that can be replicated throughout Europe. To solve the problem, all teams had to follow the five principles of the project—movement, belonging, circularity, biodiversity and aesthetics, which was also considered by the four-member jury of experts. The latter was most impressed by not just one, but two solutions. This meant that there were two winning teams of the hackathon. It is about two concepts—the first envisages green corridors, organic building envelopes, building's modularity and green bicycle and pedestrian paths, while the second is a technological center that would prevent brain drain and turn the current arrangement into a technological hub, where its potential could be used by a highly educated staff for research in medicine, sustainable materials, artificial intelligence and cyber security. The two teams expressed their agreement with the jury with the following words: "It's one thing to be visionary, and another to implement an idea in the real world, so we see the combined team as a great combination, and we look forward to upgrading and combining the two worlds—architecture and technology."

When implementing our activities with stakeholders we were focusing on four principles, namely belonging, movement, biodiversity, and aesthetics therefore including social and environmental dimension into our project. First two principles are interrelated and are essential for motivating our stakeholders (movement) and creating a feeling of inclusiveness and sense of belonging. The principles of

movement and belonging were being tested through two workshops, hackathon, and a Desire exhibition.

BTC City's pathways to build evidence and legacy started with involvement of business partners in the Green Star sustainability certificate. Green Star is an ESG evaluation system that shows companies where they are on the path of green transition. Solving a complex questionnaire gave them an insight into the areas of sustainability and made them aware of pressing topics. After receiving the certificate and an in-depth report with recommendations, the recipients proposed the establishment of a club where they would meet regularly on a proposed topic of sustainability and together look for solutions to challenges. The owner of certificate- CER Sustainable Business Network has created the Green Star Club, where the recipients meet quarterly, each time at a different location—a different company that has obtained the certificate. Before the meeting, the participants are also given the topic of the current meeting, which was proposed at the previous meeting. As the project progressed, the sustainable vision was discussed and reflected upon the challenges identified by the stakeholders. Regular meetings of the Green Star Club and open dialogue sessions with Green Community partners (a growing community of BTC's business partners in BTC City Ljubljana who are proactive in the field of sustainability and with whom BTC cooperates in tackling current issues of climate change) fostered the exchange of ideas, leading to the discovery of new projects and initiatives, while promoting a project and its purpose. The Club has proven to be a great success, as it is a circle of people who act as a driving force for sustainable development in their companies, are highly involved in decision-making and are united by the same challenges and opportunities.

In collaboration with the Municipality of Ljubljana an exhibition "Desire: movement for positive changes" was held in the premises of the new information point Ljubljana on the way to carbon neutrality. The exhibition offered different tools for example audio and video materials from all the project activities, and it was open to the public. The exhibition was designed in an interactive way (engagement tool), so visitors could write their statements about their visions, ideas and needs to help co-develop visionary solutions for sustainable urban design and address the challenges of climate change in Ljubljana and BTC City. Moreover, the exhibition was transferable so it was also displayed in the BTC City for the time of project.

To respond to the climate challenges, through joint efforts with our expert stakeholders to enhance the greenery and biodiversity of BTC City Ljubljana, BTC company envisioned a transformed landscape that not only mitigates urban warming and the heat island effect but also fosters a thriving ecosystem. In November 2023, BTC company implemented greening activities in the area. We planted 48 trees in the spring and an additional 72 trees in the fall in the southeast part of BTC City Ljubljana, a total of 120 trees of six different species in 2023. In the spring 2023, as part of the Let's Help the Bees—let's Flower the City project, whose partner is the Municipality of Ljubljana, we planted a 500 square meters meadow for bees to graze near the swimming and health center Atlantis Water Park with 4 beehives and put up signs announcing the purpose of the meadow. In the fall BTC City arranged a green island at the roundabout between two streets with karst species of plants that

thrive even in times of increased temperatures and lack of rainfall. Along one of the facades (the western facade of Shopping Arena A), we planted new climbing plants, ivy, which will cool the building in the summer months. In May 2024, we implemented a large greening project in the area as we carried out additional landscaping on an area of approximately 12,000 square meters south of the IKEA store. We planted approximately 270 trees of 20 different species, which means that we now have almost 2,000 trees in the BTC City Ljubljana area. In the process of planning new greenery, BTC City included and cooperated with the Faculty of Biotechnology of the University of Ljubljana and the Faculty of Arts of the University of Ljubljana (Department of Geography), who, related to the global challenges of urban warming and the phenomenon of the heat island, advised us on the type, method and location of planting green areas. We use a program tool for creating a simulation of how new green areas affect the temperature of the area as well as the “feels-like” temperature. With these activities we are addressing the challenge of climate change. We wish to gradually change the microclimate of the area, adapting to high summer temperatures with green areas, and we can also influence the drainage of rainwater to reduce the risk of floods. The greener the areas become, the more favorable the effect will be on the comfort of the center’s visitors, employees and business partners who visit or work in BTC City Ljubljana, while also creating a pleasant environment for flora and fauna.

BTC has also been working with GXN, an independent design-driven research studio partner of the Desire project, with whom we have created a green identity concept for the BTC City Ljubljana area using a tool of series of workshops as well as a Biofactor tool, with which we assessed BTC City Ljubljana area in terms of quality of green spaces and biodiversity. Biofactor is a tool that evaluates and quantifies the amount and quality of greening in a certain area to help us with decisions about appropriate levels of greening in the future.

BTC company is working on specific sustainable solutions, which include short-term feasible solutions for green buildings, arranging green islands with wellbeing and social function, shading solutions for areas where natural solutions are not possible, and a proposal for the future vision of the sustainable development of the Shopping Arena A, which will include new architectural and nature-based solutions. The vision as well as short- and long-term solutions will be an integral part of our urban greening strategy. The main goal is that those solutions will become a recognizable urban element of BTC City efforts in climate change adaptation and boosting of biodiversity and green identity in the future. As a result, we also wish for BTC City Ljubljana to become a regional green norm in the open retail park category of shopping centers in terms of best practices addressing climate change adaptation techniques.

With its sustainable and innovative purpose, Desire supports the European Union’s mission to reach 100 climate-neutral and smart cities by 2030. Ljubljana is one of three Slovenian cities (besides Kranj and Velenje), which is a part of that mission.

4 Key Learnings

As Desire's activities are being realized we developed a reflective learning process to understand what has worked and where we can improve in the future activities. Setting up an impactful network requires a systemic approach to identifying key stakeholders, adopting appropriate collaboration methods and tools, including multiple viewpoints, and developing shared visions. The initial step involves identifying all potential stakeholders and selecting key ones based on criteria such as influence, interest, and relevance to the network's objectives [8]. This ensures that those who can significantly impact the network's success are included (i.e. business partners, Green Star Club, Gen Z, etc.).

The success of our activities can be attributed to the inclusion of experts from biotechnical, architectural, and biodiversity fields. These expert botanists expressed gratitude for being involved, as their expertise is often overlooked [9]. Engaging them has garnered positive responses from other stakeholders in the green transformation process. BTC's management played a crucial role by understanding climate change challenges and providing necessary resources for sustainable projects. Empowering employees to develop sustainability concepts within their work, which requires cross-sectoral collaboration and a willingness to learn, was also key to our success.

Effective stakeholder collaboration requires defining suitable methods and tools tailored to each group's preferences [10]. Utilizing project management software and communication platforms ensures efficient contributions. Organizing guided workshops to gather diverse viewpoints through brainstorming sessions, focus groups, and surveys is essential. These workshops help synthesize perspectives into a cohesive shared vision, aligning with the network's goals and gaining stakeholder buy-in and commitment.

Ambitious cooperation and collaboration between policymakers, businesses, civil society, and knowledge institutes proved to be necessary, contributing to effective systemic changes. We need to create a positive feedback loop, where decisive leadership from the economy and civil society stimulates effective political measures, which in turn will further encourage more decisive actions from the economy and civil society for which clear, decisive, and predictable legislation is needed. A stable environment is essential for faster progress and achieving national goals, leveraging market opportunities, and improving the well-being of the entire society [11].

Mutual learning through workshops strengthens the network. We learned from stakeholders and they from us, leading to points of improvement, such as enhancing relationships and discussions during the greening strategy development [12]. Empowering actors and communities involve strategies like collaboration methods, feedback mechanisms, and communication strategies [13]. Regular workshops for skill-building, robust feedback mechanisms, and strengthening communication channels build trust and mobilize support. Raising awareness through media and engaging citizens directly also play significant roles.

Leveraging existing capacities through regular workshops and training sessions, combined with a long-term resource planning strategy, ensures sustainability and

effective utilization. Forming expert teams enhances initiatives. Recognizing and harnessing local leaders through media campaigns, conferences, and leadership development programs fosters a strong network of leaders driving community change [14].

Engaging citizens and the City of Ljubljana in the Desire project connects them to the mission of becoming a climate-neutral city by 2030. Similar engagement from students and business partners shows a shared commitment to a sustainable future. Biodiversity principles are integrated into our vision and tested through greening activities with GXN and others.

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Biodiversity Hub: An Emerging and Co-created Strategy for Cascina Falchera in Turin



Beatrice Villari , Domenica Moscato, Laura Fornaro, and Francesco Tortorella

Abstract The chapter delineates the process and outcomes of the two-year *Desire—Designing an Irresistible Society* project. Commencing by addressing the main challenges identified in the initial stages of the journey, characterized as “Reconciling with Nature”, the chapter elucidates the activities undertaken at Cascina Falchera in Turin (Italy) and the resultant achievements. Indeed, field actions were initiated, grounded in the concepts of Citizen Science and Nature-Based Solutions, aiming to catalyze a transformation the traditional didactic farm model, rooted in 1990s experiments, into a conceptual framework of an experimental urban hub, offering activities and services centered around the enhancement of urban biodiversity. In line with the DESIRE principles—articulated as “Biodiversity: We embrace a planetary perspective;” “Belonging: We nurture a sense of belonging;” and “Aesthetics: We expand the concept of aesthetics”—, workshops and co-design activities with local communities, as well as artistic endeavors were conducted. The overall process is portrayed as action-research which, through cycles of planning, execution, and evaluation, supported and fostered a continuous learning process within the Cascina Falchera community, while facilitating reciprocal knowledge exchange with external stakeholders.

Keywords Social innovation · Community engagement · Peri-urban area · Action-research · Service design

B. Villari (✉)

Department of Design, Politecnico di Milano, via Durando 10, 20158 Milan, Italy
e-mail: beatrice.villari@polimi.it

D. Moscato

Projects Management Office, Consorzio Kairos, Turin, Italy
e-mail: domenica.moscato@coopliberitutti.it

L. Fornaro

European Projects and Liaison Office, Consorzio Kairos, Turin, Italy
e-mail: laura.fornaro@coopliberitutti.it

F. Tortorella

Comune di Torino, Corso Ferrucci 122, 101141 Turin, Italy
e-mail: francesco.tortorella@comune.torino.it

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1 Falchera Neighborhood and Cascina Falchera

1.1 Cascina Falchera and Its Transformation Journey

The Falchera district (approximately 8,000 inhabitants) comprises two settlements: “Falchera Vecchia”, established in the 1950s, and “Falchera Nuova”, constructed in the 1970s. Originally, in the late 19th century, the Falchera area was predominantly rural.

During the 18th and 19th centuries, the suburban areas of Turin witnessed significant expansion of farmsteads. In 1710, the Falchero brothers acquired a piece of land collectively and marked the establishment of Cascina Falchera. However, following the Second World War, it underwent a significant transformation with prominent architectural and urban planning interventions, designed by architect Giovanni Astengo. Initially conceived as a working-class neighborhood, Falchera was primarily intended to accommodate individuals migrating from southern Italy to work in the north’s large industries. In its early days, the Falchera neighborhood possessed an almost idyllic charm, surrounded by nature and designed to be self-sufficient, with essential and easily accessible services.

Nevertheless, over the years, the Falchera area has experienced challenges common to many peripheral districts of major Italian cities, including a gradual decline in commercial activities, depopulation due to limited generational turnover, and a lack of connections to the urban center. These factors contributed to Falchera’s progressive isolation, fostering phenomena of marginalization, degradation, and impoverishment. Over time, the Cascina solidified its centrality in the local area, evolving into a key hub not only for local agricultural endeavors but also for educational initiatives.

In the nineties, it became an educational center open to schools in the city, as well as a recreational summer center for families in Turin. In particular, in 1996, Cascina Falchera was entrusted to ITER—*Istituzione Torinese per una Educazione Responsabile* (Turin Institution for Responsible Education), a City of Turin municipal entity. ITER transformed the farmstead into an educational landmark, seamlessly integrating it into the city’s educational framework. This educational aspect continues to define Cascina’s mission today, as evidenced by projects undertaken by the Kairòs Consortium. Kairòs aims to further elevate Cascina’s role as a Common Good serving the community while fostering research on ecology, social innovation, rural environments, and agri-food supply chains.

Another initiative worth mentioning is the “Special Project for the Peripheries” of the City of Turin, which establishes Participatory Local Development Agencies in some city neighborhoods. Initiated in 1998, among the objectives of the Development Committee of Falchera, initially, the initiative was aimed at gathering residents’ concerns, their reports, ideas, proposals, and criticisms, and bringing them to the attention of the Municipality. This enabled the latter to have a clearer and more realistic overview of the existing issues in the area, thus enabling policymakers to act more in line with the residents’ daily experiences.

In 2020, after years of inactivity, Cascina Falchera was entrusted to Consorzio Kairos with the aim of transforming the site into a green-oriented hub dedicated not only to the local community of Falchera district but also to the city of Turin and its surrounding areas. Cascina Falchera comprises several buildings, including an active guesthouse that hosted asylum-seeking families, multiple classrooms for educational activities, a conference hall, and offices. Additionally, the facility serves as a shelter for various animals for the educational farm and features a synergistic vegetable garden. Furthermore, there is an ongoing process to establish a food court inside the farm.

The Italian Ministry of Cultural Heritage and Activities has granted Cascina Falchera recognition of cultural interest. While this recognition adds value, it also presents a bureaucratic limitations that hamper flexibility in supporting transforming actions. Consequently, a new governance concept is being developed to regulate public–private partnerships to support a long-term strategy. As part of Desire, Cascina Falchera aims to refine its vision by facilitating a transformation into an urban living lab—a multidisciplinary space for production and lifelong learning. It is envisioned as an urban area where socialization intersects with eco-cultural needs.

1.2 A System of Policies to Foster Urban Regeneration

Over the past thirty years, Turin has undergone a complex physical and socioeconomic transformation that has reshaped the entire urban system. This initiated a process of innovation and change that continues to this day. The reorganization of city accessibility and infrastructure, the creation of new services and public spaces, and the environmental restoration of rivers and parks are among the significant issues that have prompted Turin to develop innovative solutions, new economies, and opportunities.

Turin has received substantial support from the European Regional Development Fund (ERDF) in implementing urban regeneration programs. More recently, the city has been exploring innovative approaches to urban development facilitated by the URBACT and Urban Innovative Actions programs. In alignment with the EU Urban Agenda and the New Leipzig Charter [1], Turin is currently undergoing a dynamic phase of evolution. This phase aims to integrate at the local level the principles and objectives established at the EU level, including:

- The EU Green Deal: Turin is committed to the EU mission of achieving 100 Climate Neutral and Smart Cities by 2030.
- The New European Bauhaus: In 2023, the city adopted the Manifesto of the New European Bauhaus of the City of Turin.

The City of Turin was among the first local authorities in Europe to initiate a participatory process in 2022 aimed at incorporating the values of the New European Bauhaus—beauty, sustainability, and inclusion—into its political strategy. This initiative began as a policy lab, promoted in partnership with the NEBTO Committee

(Turin Committee for the New European Bauhaus, a group of citizens, activists, and professionals from various fields). The process included several public workshops to explore how the NEB principles could be applied to concrete projects for sustainable urban development in Turin. The first output of this process is the NEB Manifesto of the City of Turin [2], adopted by the City Government with Deliberation No. 120 on March 14, 2023.

The City of Turin has initiated a process to integrate the New European Bauhaus principles into the policy instruments guiding the actions of the local public administration. The current challenge is to translate these principles into operational programs that impact urban development and concrete local policies, such as the management of environmental resources, mobility, technological innovation, inclusion policies, and education and job creation for young people. In particular, the City of Turin intends to start this path of renovation and integration of the NEB principles with the National Program “Metro Plus Città Medie Sud 2021–2027” the national program dedicated to Italian cities funded by ERDF and European Social Fund+ (ESF+). The Program designates 14 Italian Metropolitan Cities as Intermediate Bodies, with the City of Turin being one of them, managing a budget of over €140 million. While ensuring continuity in addressing specific thematic issues previously covered by the National Program for Metropolitan Cities 2014–2020, such as digitalization, mobility, energy efficiency, and social inclusion—the new Program broadens its scope to encompass new challenging such as urban regeneration, environmental sustainability, social innovation, environmental and circular economy initiatives, and natural heritage.

The territorial project associated with the National Program “Metro Plus Città Medie Sud 2021–2027” for urban regeneration will focus on the city’s northern area, specifically where Cascina Falchera is located. This area has been selected due to its significant challenges, including poverty, school dropout rates, youth unemployment, and environmental degradation. It is one of the city’s poorest areas, with many residents reliant on municipal assistance.

The project will encompass urban redevelopment and regeneration initiatives, policies targeting the youth population, and enhancements to the socio-cultural infrastructure and identity of the two neighborhoods involved. In addition to physical interventions, the project will include a comprehensive set of intangible actions, designed to maximize the impact and benefits for the community through a systemic approach. The underlying logic aligns closely with the Strategic Municipal Plan, aiming to create a local, participatory, and sustainable urban development program. This strategic program seeks to trigger an overall improvement in the area through interventions that redevelop public spaces, enhance environmental quality and sustainability, boost resilience, mitigate and adapt to climate change, promote sustainable mobility, and improve the quality of life for residents (focusing on relationships, safety, and health). This approach is fully consistent with the principles established by the New European Bauhaus Manifesto emphasizing inclusiveness, circularity, and the reconciliation of urban areas with nature, integrating art, architecture, and design to explore innovative ways to transform urban spaces.

1.3 Activating Young Adults, Enhancing Water Resources, and Transforming the Farmhouse Identity

In line with the policies described above, Cascina Falchera stands as an emblematic site in the city of Turin, having played a significant role in social and educational realms over the years. The ownership of Cascina Falchera lies with the Municipality of Turin, while the Consortium Kairos oversees its operations through a long-term permit model. This model entails the implementation of an entrepreneurial strategy and an economic framework capable of sustaining the site's development in a self-sustainable manner. This model necessitates integrating the site's strong social orientation with elements of economic sustainability.

Presently, it is undergoing substantial transformation, both in terms of infrastructure and cultural and social offerings, as well as in civic engagement and participation. The long-term vision is to create an innovative model of urban space that can inspire the city and serve as a social catalyst, fostering connections and relationships among citizens, authorities, universities, and public and private organizations. On one hand, there is a need for the revitalization and energy efficiency enhancement of the farmstead's spaces. On the other hand, the activities within Cascina Falchera must be redesigned to address the challenges of sustainability, equity, and inclusivity in urban regeneration.

In support of the equitable and sustainable transformation process, several areas of interventions have been identified, namely:

- The revitalization of Falchera lands to enhance landscaping and quality of life, with particular emphasis on those lands involved in the agricultural rural management of soil across various areas of the district.
- The advanced renovation of Cascina Falchera, entailing the restoration of the eighteenth-century farmhouse in a manner that integrates environmental sustainability measures (e.g., integration of solar panels, utilization of geothermal heating systems) with innovative technology applications aimed at fostering community cohesion and reconfiguration of local spaces.
- The conceptualization and implementation of new green spaces and environmentally friendly features (e.g., bio lakes) to bolster local biodiversity and enhance community engagement with water and historical water management systems still extant in the Po Valley region.

Specifically, within the Desire project, a theme of sustainable development has been identified concerning the role of water resources, both within Cascina Falchera and in relation to the surrounding territory. The site is characterized by a historical system of field irrigation (the “bealere”), which is emblematic of the rural landscape of Piedmont. These infrastructures carry historical significance while also contributing to the enhancement of urban biodiversity. Through a participatory and collaborative process involving municipal authorities, citizens, experts, and various organizations, a development strategy for the site has emerged, subsequently conceptualized as the “Biodiversity Hub”. This strategy fully embraces the principles of

the New European Bauhaus, contributing to an urban transformation where the pillars of sustainability, beauty, and participation become integral components of local initiatives.

2 Reconciling with Nature Challenge

In the initial phase of *Desire*, Cascina Falchera was at the onset of its transformation process, with its new conception and management inaugurated in May 2023. The representatives of the *Kairos Cooperative*, in collaboration with the Municipality of Turin, were thus laying the groundwork to initiate a process of engagement between territorial stakeholders on one hand and citizens on the other, aiming to strengthen Cascina Falchera's identity as a community center. The challenges identified encompassed various operational and strategic aspects, notably:

- Building a grassroots community of interest around the activities of Cascina Falchera, with an additional challenge of actively engaging the young adult demographic.
- Activating a community of institutional stakeholders to share strategies and proposed actions across various decision-making forums within the municipality.
- Reinforcing Cascina Falchera's identity by changing it from the didactic-educational model characterizing past experiences, achieved through the formulation of a strategy aimed at defining new initiatives and services to be implemented on-site.

The strategic and operational objectives were focused on building new community ties and strengthening existing ones. This was achieved through understanding emerging citizen needs, fostering closer connections with local institutions and organizations, and activating processes of listening and co-design. Aligned with the New European Bauhaus principles, these challenges integrated participatory processes and factors related to aesthetic concerns alongside sustainability considerations from the early stages of development.

Building upon these premises, concrete actions were undertaken on the ground, leading to the formulation of an emerging strategy encapsulated in the "Biodiversity Hub" concept. Cascina Falchera, as a place aimed at reclaiming open spaces for civic engagement and lifelong learning, thus emerges as an ideal context for nurturing a new urban Living Lab in the city of Turin. Indeed, it serves as a natural nexus between city and nature, center and periphery, urban culture, and rural tradition.

3 Site Experiences as Action-Research

The experimentations run in Cascina Falchera revolved around three Desire’s principles, namely “Biodiversity: We embrace a planetary perspective” to demonstrate viable possibilities for sustainable and green transformation for the local resource management system and to enhance the full potential of endogenous resources; “Belonging: We nurture a sense of belonging” to activate pathways of active citizenship and collective responsibility to generate cultural change that promotes the culture of reciprocity, proximity, and co-responsibility, developing welfare practices; and “Aesthetics: We expand the concept of aesthetics” to collaboratively design a mixed plan of functions and services that can orient and guide the transformation of the site and to co-design a new perception of the place.

The Desire principles guided the implementation of on-field activities characterized by community listening and participation involving diverse competencies and stakeholders, alongside an emergent and bottom-up approach to decision-making because of collaborative endeavor. The experimental journey pursued several objectives:

- Activation and engagement of communities, achieved through multidisciplinary workshops.
- Construction of a shared vision of transformation, developed through a co-design approach.
- Experimentation with specific solutions through the realization of small demonstrators.

Due to the nature of the experiments conducted, the Cascina Falchera’s experiment within Desire can be described as action-research. Indeed, the journey involved a team of researchers from the Department of Design of Politecnico di Milano who actively collaborated with the Cascina Falchera team through phases of planning, action, and evaluation [3]. These processes, interpreted as participatory and collaborative design processes that engaged different stakeholders in transformative and emancipatory journeys [4], contributing to the change in, for, and of the community itself [5]. The adoption of the action-research approach enhanced the core team’s ability to navigate complex systems by integrating observations, analyses, tests, and design visions, as well as critical and reflexive capacities [6]. In the following paragraphs, the experiments conducted are briefly described, initiating learning processes based on action and experience.

3.1 Water Saving Camp: Activating and Engaging Local Communities (The Irresistible Cycle)

The Water Saving Camp [7] initiative is articulated in a series of workshops open to the public, focusing particularly on engaging the young adult community, and

aimed at supporting critical reflections regarding the historical and prospective roles of water and natural resources in the city. Aligned with one of the themes of the Desire project, “Reconciling cities with nature”, the objective was to contemplate the interplay between nature, spaces, and communities not only from a functional perspective but also regarding well-being, local knowledge, and the creation of shared value within these spaces. As previously mentioned, the activities are specifically tailored to young adults (aged 15–29), with the aim of cultivating a reservoir of knowledge and experiences that transform their perception of the places they inhabit daily and the active role that public spaces have in the cities. The long-term goal was to cultivate an initial community of active young citizens who possess an in-depth understanding of their territory, are equipped with the tools to enhance it, and exhibit the necessary sensitivity to narrate and disseminate this process.

Water Saving Camp unfolded through three initiatives: (1) Nature-Based Solution workshop, (2) Urban Exploration initiative, (3) City Branding workshop. During these initiatives, young adult communities and citizen groups engaged in urban exploration activities aimed at fostering active participation in acquiring and sharing knowledge of the local area. Through a Citizen Science approach, valuable information and data from the landscape were collected in collaboration with local communities, institutions, associations, and water channeling experts operating in Cascina Falchera. Furthermore, this activity was conducted in collaboration with an artist and a sound engineer who produced an online-available soundtrack as the Urban Soundscape of Falchera.

Additionally, introducing the concept of Nature-Based Solutions, which entails using natural elements to address typical challenges in built environments, a workshop was organized to de-pave certain areas of the inner courtyard of the Cascina, currently fully paved and impermeable. Through the removal of covering materials, “breathing areas” were created to enable the absorption of rainwater and its reintroduction into deeper layers, thus restoring it to its natural cycle (precipitation-absorption-utilization by vegetation-evapotranspiration-condensation).

Finally, during a phase of engaging with local communities, ideas and suggestions were collected to initiate new initiatives at Cascina Falchera. These projects aim to strengthen the connection with the neighborhood, enhance the relationship with the city, promote knowledge exchange, and advocate for sustainability and inclusion.

This phase of community engagement and activation led to the development of a strategic vision, which evolved into the concept of an urban “Biodiversity Hub”. On an operational level, it involved identifying potential concrete initiatives to be tested on-site. The insights gathered from these participatory processes laid the groundwork for defining a more precise offering for the “Biodiversity Hub” and experimenting with specific initiatives.

3.2 La Roggia: A Collaborative Manifesto to Foster Creativity

During the final phase of the Water Saving Camp, interviews were conducted with young participants to envision the future of Cascina Falchera and propose actions for its aesthetic and participatory regeneration. Various proposals were gathered, such as cultural activities to be held at the Cascina and events for the local community that utilize open spaces and strengthen the connection with the neighborhood. Among the suggestions, the most promising was the idea of establishing an artist residency. This residency would focus on urban regeneration, the enhancement of biodiversity, and the theme of water as a common good. This concept was enthusiastically received by the community to introduce new artistic expressions and contemporary art to Cascina Falchera. Consequently, the initiative “Roggia” was organized, creating a space where young artists, designers, and creatives could collaborate with the local community to experiment with new communication methods and collectively imagine the future of this rural area on the outskirts of Turin. Specifically, a group of twelve young adults developed a Manifesto to be shared with the artist involved in the residency. This Manifesto, inspired by the values of the local territory and community, provides suggestions that could serve as inspiration to explore and interpret the role of the artwork to be created within the Cascina Falchera community.

3.3 Biodiversity Hub: An Emerging Shared Vision of Transformation

Cascina Falchera is undergoing a transformation, necessitating a new identity connected to the current management and governance system. This aims to strengthen both the internal bonds within the Kairos association and to establish a renewed relationship with the local area and diverse users, moving beyond the traditional view of the Cascina as merely an “educational farm”.

Participatory processes and connections with various local stakeholders have led to the recognition of Cascina Falchera as a notable site for experimentation on biodiversity themes, as well as a public space for social aggregation and inclusion. This concept aligns with the existing Living Labs in the city of Turin [8] which have been experimenting with new technologies and circular processes for years, involving both public and private organizations.

This vision of transformation originates from the action-research process initiated with DESIRE. This process needs to be further developed and refined to foster new relationships, define targeted project strategies, and implement solutions that address the diverse needs of different communities [4]. The experimental and collaborative process has led to the construction of a shared vision of the “Biodiversity Hub” at Cascina Falchera as a place for environmental sustainability and social innovation experimentation, and as a provider of different services. Development strategies have been proposed for developing the “Biodiversity Hub” through specific actions and

service offerings. Consequently, co-design workshops have been initiated to define the value proposition, linking the existing offerings with future ones.

3.4 *Co-design Value Proposition and Services: Structuring a Service Plan and Service Scenarios*

In order to focus and describe how the “Biodiversity Hub” may evolve, a series of initiatives have been launched to collectively define the value proposition and identify a new offering system to be implemented in the short-term, while also defining a future development strategy through service scenarios. Specifically, three co-design workshops were conducted, coordinated by the research team of the Department of Design of the Politecnico di Milano, aimed at (i) mapping the existing offerings and identifying the system of actors and users involved; (ii) defining the value proposition of the “Biodiversity Hub” in relation to the identified user communities; and (iii) identifying a complex and differentiated offering system through a service plan to be implemented in the short-medium term.

In support of the workshops, a series of field interviews were conducted—with the collaboration of local volunteers—which allowed for the delineation of several *Users Personas* (with a particular focus on Young Adults) and *Non-human Personas* (for which the soundtracks produced by artists involved in the Water Saving Camp initiatives were used), along with a mapping of existing relationships with the actors involved with different roles in the Cascina current initiatives. In relation to the specific user communities, the value proposition of the “Biodiversity Hub” was then outlined, describing in more detail how this urban Living Lab could be developed in the future, according to specific objectives, activities, services, and competencies.

Finally, through a participatory process involving local associations, the Municipality, citizens, and the Kairos staff, some transformation scenarios were outlined around the core theme of urban biodiversity. The transformative scenarios were described through five strategic directions that could characterize the “Biodiversity Hub” in the future. The “Biodiversity Hub” was then described as a *training center*, *research and experimentation center*, *territory protection center*, *cultural center*, and *aggregation center*. Within the five strategic visions, some specific services and initiatives were proposed, along with the community users and the system of actors to be involved and engaged.

The insights gathered from the co-design process led to the identification of some design scenarios and services to be experimented with in the short-medium term. In particular, the scenarios were titled “*Cascina Falchera open workspace*”, “*Cascina Falchera Biodiversity Lab*” “*The Hi-tech Cascina: phygital narratives*”, “*Atelier Cascina Falchera*”, and “*Cascina Falchera Circular Food Lab*” and were described and visualized using evocative pictures. For each of these scenarios, some service ideas were outlined. Of these solutions, one related to the artist residency, an experimental prototype was created, as described in the following paragraph.

3.5 *Experimenting Opportunity: Prototyping Initiatives to Create Legacy*

As mentioned above, the concept of the artist residency has emerged through participatory contributions initiated during the “Water Saving Camp” and further developed through the participatory process “*La Roggia*”. It was subsequently reworked and integrated as part of a broader offering within the “Biodiversity Hub” framework, in line with the principles of the New European Bauhaus. Efforts were focused on constructing a prototype artist residency by engaging local communities while also extending invitations to the international context. Specifically, centered around the theme of water resource enhancement, a call was issued to young national and international artists and designers to envision an artifact capable of visualizing the connection between water, territory, and community.

A young artist was then selected through an international jury to realize a site-specific work that could serve as a landmark and stimulate reflection on the importance of water as a vital element. The residency will commence in June 2024 and conclude with the unveiling of the artwork to the local community.

This amalgamation of art, territory, research, and biodiversity enhancement opens new avenues for experimentation at Cascina, further reinforcing its role as a site for experimentation and multidisciplinary research.

4 Key Learning

The overall results achieved during the Desire project can be attributed to a journey of social innovation and continuous learning that particularly concerned individual skill levels along with organizational strategy and internal processes. Learning, within an action-research process, can be described in terms of value creation [9] in the short and long-term, in relation to relationships, skills, processes, and, in the specific case, in connection with a particular territory. It can be described as community learning that refers to experiential learning of knowledge concerning the skills acquired through interactions with the places and knowledge that belongs to those places.

In Cascina Falchera, the learning process particularly pertained to three main issues: (i) the construction of the Cascina’s identity; (ii) the change in internal organization, and (iii) the relationship with communities.

Building identity and sense of belonging inside and outside the organization. The construction of a new identity and the fostering of a sense of belonging characterized the entire transformative process of Cascina Falchera. The idea of innovating the place towards an open, collaborative, and experimental model centered around biodiversity is the result of a bottom-up process and research that draws from local culture and history, reinterpreting Cascina’s vision and offering. The construction of the new identity (now far from Cascina Falchera only as an “educational farm” targeted to primary schools) resulted from an open and collaborative process that worked as a

collective *sense-making* involving different actors' perspectives. The need to build the place's identity emerges by sharing strategies, visions, working procedures, and tools within the organization, with communities and external actors. The construction of identity also involved community engagement and participation processes to activate interest, motivation, and a sense of belonging. The construction of a shared identity is also a regenerative and transformative process that enables the evolution of a design community over time [5, 10] and represents a crucial part of the local transformation.

Transforming organizational roles and enabling continuous learning paths. One important aspect of the learning process involved organizational dynamics at the operational level and at the broader organizational vision and culture. During the DESIRE initiative, the Kairos association experimented with new methods of action, tools, and practices. Simultaneously, the number of people involved in the association has grown significantly. This necessitated a rethinking of certain internal processes (e.g., training activities or knowledge-sharing processes) and the ability to manage multiple activities concurrently in various roles (e.g., managing projects, handling human resources, maintaining relationships with external suppliers, designing specific initiatives, coordinating ongoing activities with new programming, and so on). From an internal organizational perspective, learning by doing was initiated, which helped overcome obstacles related to bureaucratic aspects, resource availability (people, time, financial resources), and reduced specific skill gaps. This organizational transformation is still in its early stages and will continue to be a focus for future work and experimentation. The aim is to maintain, where possible, a good degree of informality in processes and relationships, while simultaneously implementing structured processes that can alleviate organizational strain and respond more swiftly to changes.

Enabling continuous dialogues with the local communities. An important aspect of the learning process in Cascina Falchera relates to the relationship with communities, that is, on the one hand, understanding their needs and characteristics, and, on the other hand, activating mechanisms of engagement and participation that generate interest and a sense of belonging. This entails a continuous and constant learning process that ranges from strategic and relational to practical interventions [11], from informal and unstructured actions to more structured and targeted initiatives, such as meetings, workshops, or practical activities. Community involvement concerned at least two aspects. The first was related to the internal dimension of the organization, exploring how communities and citizens can have an active role, for example, in organizational processes, activities to be carried out, or space management and maintenance of the place. The second was related to the external relationship, and therefore the ability to generate interest in the place and make it lively, vibrant, participatory, and open. The gradual process of participation support (with different degrees of involvement) needs to be designed, instructed, and supported over time through precise and varied choices for each situation. Therefore, community building is a sort of project within the project that requires the allocation of appropriate resources (i.e. time, and competencies). Building, nurturing, and maintaining different types of social relationships supported the identity-building process described above, through the construction of social and relational capital [12]. The importance of learning in collaboration with the different communities revolving around Cascina Falchera thus

generated a common sense of place that also helps to promote regenerative practices to support a renewed relationship between humans and nature.

In summary, the process initiated with Desire represents the first step in a broader and long-term transformation of Cascina Falchera and the surrounding neighborhoods. The conducted experiments led the core research team to reflect on the knowledge capital acquired, on ways to strengthen internal relationships and reinforce external ones through a mutual learning process, and on the ability to create value through small steps aimed at supporting a wider transformation. This allowed for greater awareness of existing critical issues, process challenges, as well as people, communities, and organizations strengths. This reflective and iterative approach characterized the entire process, identifying the value generated in the short and long-term. Such value goes beyond the DESIRE results, but it represents a new local capital to be used and regenerated in future initiatives while approaching urban biodiversity through the idea of being together, sustainable, and beautiful.

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Co-creating a Circular Campus in Kalundborg



Pernille Bech and Flemming Overgaard

Abstract In response to pressuring challenges such as climate change and the need for sustainable building and manufacturing, the Kalundborg demonstrator aims to develop innovative solutions grounded in education, inclusion, biology, and ecology. The experimentation conducted within the Desire project calls for a transdisciplinary approach for the learning environment, ensuring that graduates can work across educational levels and engage various stakeholders in co-creating innovative solutions. The city of Kalundborg aspires to develop a robust educational campus for about 1,250 students, researchers, teachers, entrepreneurs, and future job candidates. Located near the major Kalundborg biotech industry and just outside the city center, this campus is set to become a significant educational hub within biosolutions and biomanufacturing. This transformation highlights challenges such as the development of a shared vision, plans and programs for the future of the campus. Key challenges include fostering local citizen engagement, creating a vision for the sustainable educational campus that meets diverse needs, and ensuring long-term benefits for the city and its inhabitants. The experimentation conducted within the Desire project seeks to address these issues through comprehensive and inclusive development strategies, promoting sustainable urban development and community resilience.

Keywords Transdisciplinary education · Citizen engagement · Sustainable urban development · Regenerative processes · Power of place · System thinking

P. Bech
Knowledge Hub Zealand, Kalundborg, Denmark
e-mail: pernillebech@outlook.dk

F. Overgaard (✉)
Danish Academy of Fine Arts, School of Architecture, Design and Conservation, Copenhagen,
Denmark
e-mail: fove@kglakademi.dk

1 Context

1.1 Kalundborg: The Arrival of a New Educational Campus

In a world facing challenges such as climate change and the need for sustainable building, solutions grounded in education, inclusion, biology, and ecology are urgently required. Pressing challenges demand us to rethink the current systems, requiring a new approach to educational programs ensuring that graduates build a meaningful curriculum. To support the transition to a more sustainable future, the ambition is to facilitate co-creation between various stakeholders, to develop an educational city campus in Kalundborg for approximately 1,250 students, researchers, teachers, entrepreneurs and potential future candidates for employment. This approach aims to engage multiple stakeholders in educational programs fostering co-creation processes to develop a shared understanding of innovative solutions.

Kalundborg, a Danish town with approximately 16,000 residents, is the main town of its municipality, located on Zealand's northwestern coast, 110 km from Copenhagen. It was settled in 1170 at a natural harbor in Kalundborg Fjord and became an industrial center by the mid-twentieth century. The city is renowned for the Kalundborg Symbiosis, where businesses share resources to reduce waste through a circular approach to industry. This collaboration involves sharing excess energy, water, and materials. It hosts Scandinavia's largest biotech hub with major companies such as Novo Nordisk and Novonesis. The town's economy is booming, reflected in its 26.9% GDP growth in 2022 and from 2022 to 2029, the medical company Novo Nordisk plans to invest DKK 60 billion to expand its facilities, adding more than 1,200 jobs to the existing 4,500.

Kalundborg is not only an industrial hub but is also a historic city with a medieval center that contain buildings, and a unique Church built in the 12th century. The city is situated in a beautiful hilly landscape with numerous scenic views over the fjord. Kalundborg has many assets, but for various reasons it has until now never seemed to be able to lift itself to a higher cultural or educational status. For a middle-sized Danish town, the investment of yet another massive injection of capital and jobs is affecting the city of Kalundborg and it is now in a big transformation phase driven by the attracted large industrial investments and the development of the new campus.

The campus development was boosted in 2022 by a new national education policy agreement on the relocation of education programs called "More and better educational opportunities throughout Denmark". The agreement paved the way for The Danish Technical University to set up two master's programs in Kalundborg and provided additional funds for the establishment of an architectural education in Kalundborg by The Royal Academy [1].

The physical transformation is partly controlled and guided by the municipality's strategic plans for the city's development and expansion [2]. The city's development has five goals:

- Improve the physical and experiential connections between three selected centers of energy.
- Strengthening the centers of energy in the city so that an increased urban life is created in the urban spaces.
- Strengthening of selected street sections and connections in five new Loops, including connection to the surrounding landscape.
- Establishment of more up to date/diverse housing through urban transformation and densification.
- New educational institutions, supporting the idea of a part of the city center becomes a “campus unit.”

The five goals are each set to support the city’s functionality, so that they can vitalize Kalundborg as a valuable basis for commerce, culture, and leisure life. The planning direction must create space for citizens to unfold, create social networks and gain a personal sense of belonging to the municipality. On top of this, a strategic masterplan is developed for Kalundborg city center to build on existing plans and analyses.

Since 2021 the development of a new campus close to the large Kalundborg industrial areas and just outside the city center is affecting the city. The development of the new campus foresees the arrival of multiple educational institutes in the area, such as the University College Absalon, University of Copenhagen and Danish Technical University, set to commence in 2024. With the arrival of The Royal Danish Academy to Kalundborg in September 2023, incorporating perspectives from Desire and the New European Bauhaus, the Desire principles of belonging, movement and circularity are elevating the educational ambitions further. The Academy’s Bachelor program in Kalundborg called City and Countryside reconsiders the relationship between urban and rural areas as a critical, constructive, and significant difference in society. The program is a basic education in architecture with a focus on ecological thinking, place development and concept evolution through full-scale prototyping. The City and Countryside program focuses on local conditions and potential. The program aims to resonate with places through circular relationships and co-creation, responding to the need for concrete action. Instead of merely representing the complexity of our time, new professionals should actively engage with and experience these challenges firsthand during their studies. The Royal Danish Academy has chosen a temporary location in the city center and plans to stay in the city. The intention of the Academy is to connect the new campus with the city and that the above-mentioned focus points will serve as guiding for the development of the city and the new campus in Kalundborg.

1.2 Issues to Be Tackled

The investments and planning of the educational campus is creating a pressure on the city of Kalundborg, accelerating urban development and potentially causing conflicts

between different stakeholders involved in and affected by such a transformation. For example, the local municipality's plan to locate the Royal Academy's architectural education at the new campus on the outskirts of the city has been met with caution. The Royal Academy has adopted a principle of postponing decision-making and temporarily locating at the train station while investigating more integrated locations within the city center.

It is important for the future of Kalundborg, that the development of a vision for the new educational campus not only meet the needs of the industry and the educational institutions but also incorporate the visions and dreams of students and citizens, creating an inspiring environment that fosters a sense of belonging to both the campus and the city. This issue highlights the need for a comprehensive and inclusive approach to the development of Kalundborg, ensuring that both local engagement and external collaboration contribute to a sustainable and vibrant future for the city.

2 Challenges

Creating an irresistible circular campus and city in Kalundborg demands addressing various outcome challenges across three crucial design components: community engagement, physical space and infrastructure, and services and programs (see Fig. 1 in Chap. "Supporting Transformation in Urban Areas: The Desire Project" of this book). To measure progress effectively, specific challenges are outlined.

Establishing the irresistible circular campus as a pivotal part of Kalundborg's urban development requires fostering a shared understanding and collaboration among stakeholders. This process involves several challenges, starting from the co-production of a definition of what "irresistible" means, tailoring the concept to Kalundborg's context: empowering stakeholders with the capabilities for understanding and engaging with the broader life systems in the region, and implementing tangible projects through a collaborative effort with different stakeholders.

The development of a shared vision, project and programs for the future of Kalundborg becomes even more crucial considering that the city has a long history of being exploited by external forces, causing a notable lack of trust among local citizens in their ability to contribute to the city's cultural and physical development. Success is when stakeholders across sectors such as academia, industry, government, and civil society acquire new capabilities to understand and engage with Kalundborg's complex life systems. This empowerment enables meaningful contributions to the vision of the town and the circular campus. Advancement is demonstrated through collaborative activities and implementation of 1:1 projects by students and locals exemplifying the principles of circularity, sustainability, and movement, and serving as tangible manifestations of the shared vision for Kalundborg's future.

To realize the vision of an irresistible circular campus in the development of a *comprehensive physical infrastructure* that could foster an environment prone to innovation is crucial. This process involves creating structures for ongoing dialogues on urban development and the exploration of structures that could foster dialogues

and open collaborations between different types of stakeholders. By integrating innovative biogenetic materials research and maintaining continuous dialogue, Kalundborg can create an infrastructure that supports both technological advancements and community engagement, ultimately contributing to the realization of an irresistible circular campus.

Finally, the arrival of the educational institutions fosters the need to develop services and programs that offer co-mutual benefits for both Kalundborg citizens and new students, enhancing residents' quality of life while providing valuable learning and engagement opportunities for students. This integration should foster a sense of belonging, collaboration, and shared responsibility, enriching Kalundborg's social and cultural landscape. Achieving these outcomes requires sustained effort, collaboration, and commitment from all stakeholders involved. The activities conducted within the Desire project create the opportunity to facilitate the integration and collaboration, aiming at accelerating the transformation of the campus in Kalundborg.

3 Site Experience

To enhance local citizens' engagement in the development of their city and integrate the incoming students in this effort, the Desire project in Kalundborg has set out to create more forums for discussion and common project development. This has been supplemented by guided efforts to develop a campus environment that fosters a sense of belonging and unlocks potential among both citizens, students, municipality, industry, and the broader community. The Desire principles have been instrumental in this search for new procedures and understandings.

3.1 Embrace Challenges

Following the approach of "Power of Place" (<https://www.reallyregenerative.org/power-of-place/JenniferAnderson>), a field group of local stakeholders with an interest to engage in the cultural and physical development of the city was gathered. From the beginning the group had a broad composition of citizens with various backgrounds and met on a regular basis at different locations. The main scope for the group was to define some central matters of *potential* and develop corresponding ideas for reactions to these concerns. In the first experimentation period the process was facilitated by the Desire team but then gradually shifted to a more autonomous procedure led by the group itself. The group used a Dilemma tool (Flemming Overgaard) to work out a manifesto stating central values and principles and named itself "The Phoenix Group" to be associated with a force of a new beginning for Kalundborg. A student workshop on the Belonging principle was conducted to understand how students across different educations wished to feel on the new campus, rather than focusing

exclusively on the facilities. Techniques such as personal drawings, empathy maps and mood boards were used to gather insights into their emotional and psychological needs. The specific tool “Listening to Place” (reference) where used by the participants to be engaged through site visits and discussions to understand their sensory experiences and aspirations. Imaging and drawing lessons encouraged participants to visualize and articulate their feelings and ideas about the place. Their perspectives were later communicated to decision-makers, integrating these insights into campus planning.

On a more formal level a network consisting of the top management of the municipality and Knowledge Hub Zealand, representatives of the Royal Academy plus a Pension Fund acting as real estate investor, was set up to work on finding a more permanent location for the Royal Academy. A scenario tool [4] was used to investigate different principles for either concentrating the education on one site distributing it on two–three specialized hubs or integrating it closely within a wide range of existing institutions and facilities. The network continued working during the entire Desire project.

The larger campus project was developed through a formal network of educational institutions, the municipality, and industry partners. At the outset a series of working groups were established, yet later minimized to two–three groups. The scope of this network was to formulate a vision for the campus but also investigate the possibilities for cooperation and co-use of laboratories and other facilities across the different educations. As a result of this an important sub-group of researchers from the University of Copenhagen, Department for Life sciences and the Royal Academy was formed as they shared obvious common interests in fermentation facilities. The two very different entities realized that they were using similar processes of fermentation to do research into the production of quite different products ranging from fine foods to biogenic building materials [5].

3.2 Empower Choices

Several activities were conducted to empower actors and communities in Kalundborg. Academic collaborations were established to foster education and research partnerships between the Royal Academy, the University of Copenhagen, and the Danish Technical University. This collaboration has led to the development of new research areas and shared laboratories. The Phoenix Group, engaged in promoting culture and unity, has welcomed new members and applied for funding for art and architecture projects, with the Desire team facilitating the process and supporting the group by involving professionals from design and visualization fields. Co-creation efforts between education and industry have developed a shared vision for the campus and city, promoted at a seminar for decision-makers to discuss broader urban issues. Empowerment through inclusion has been emphasized by involving students and community members in activities and decision-making processes. The slogan “Empower actors and communities” has been central, with workshops and academic

collaborations empowering individuals to contribute meaningfully to campus development. Reflections on the process highlight the importance of emotional and psychological connections, revealing deeper insights from students about their campus experience. However, challenges in imaging for unskilled participants suggest a need for additional learning resources.

The direct impact of participatory methods [6] on campus planning remains to be fully developed, necessitating ongoing advocacy and integration into formal planning processes. Strong relationships and shared interests between academic institutions have proven more impactful than focusing solely on specific projects. The Phoenix Group's move towards autonomy is progressing, but clear transition activities and support are needed. These activities and reflections offer valuable lessons in urban development. By setting up networks, empowering communities, and building a legacy of evidence, Desire aims to advance campus development and strengthen the community's capacity for collaboration and innovation.

3.3 Enable Change

To build a legacy from the project in Kalundborg, Power of Place and specifically the premise "Integration of Living Systems" served as a foundational base. The process revolves around understanding five overarching premises. The first premise of this adopted approach is "Catalyzing Living Systems", which emphasizes planning on an ecosystemic scale, from buildings to bioregions. This involves mapping ecosystems to identify interconnections and viewing the campus as a new system within an urban context, ensuring its development meets local needs. The second premise, "Unleashing Future Potential", shifts focus from problem-solving to potential-building to support future growth and adaptability, promoting sustainable development practices. The third premise, "Nested and Relational Systems", involves identifying and leveraging connections between the campus and larger systems. Using systems thinking tools to visualize nested relationships ensures that campus projects benefit the broader community and environmental systems. The fourth premise, "Transformative Change Process", combines knowledge fields from universities to identify critical nodes in sustaining life in Kalundborg. It integrates ecological and human systems to create energy centers that sustain transformative change. The fifth premise, "Participatory Process", engages stakeholders from the entire system in the development process using participatory methodologies, fostering a sense of ownership and belonging.

4 Key Learnings

The findings from the experimentation phases of the Desire project highlight several reflections.

The first key insight is the importance of timing: understanding the stages of development is crucial for all stakeholders. The recognition from the involved stakeholders of where each part stands in the process leads to aligning efforts and setting realistic expectations, fostering better coordination and synergy towards common goals.

Second, within small communities, citizens acting as volunteers often also hold responsible roles and power within public institutions and or private enterprises, leading to possible conflicts of interest that could influence decision-making processes. Participation projects involving different stakeholders need to be carefully planned to consider different availability to ensure inclusive participation and avoid potential conflicts that might arise. Moreover, there is an inherent paradox of establishing a unique identity for each new educational institution (i.e. The Royal Academy) while simultaneously fostering open cooperation with other stakeholders. This tension can be overcome by developing personal relationships and identifying common interests, as demonstrated by the collaboration between researchers from the Royal Academy and the University of Copenhagen during the Desire project.

To identify potential in Kalundborg, the Power of Place approach (reference) played a crucial role for the Kalundborg demonstrator by: (1) mapping the existing ecosystems at different geographical scales, from the building scale to bioregions, seeing the campus as a new system in an urban context, ensuring its development enhances local needs; (2) Identifying and leveraging connections between the campus and larger systems using systems thinking tools to visualize nested relationships and ensuring campus projects impact and benefit the broader community and environmental systems; (3) combining different knowledge fields to identify critical nodes in sustaining life and integrating ecological and human systems to create centers of energy that sustain transformative change; (4) Engaging stakeholders from the entire system in the development process with participatory methodologies to ensure that several stakeholders are involved, fostering a sense of ownership and belonging.

The three principles of Belonging, Movement, and Circularity added positively to the experience of working with the Kalundborg site, including the specified aspects: The principle of Belonging ensures that students feel a connection not only to the campus but also to the wider city of Kalundborg. This shared sense of belonging fosters a deeper engagement and investment in the community, encouraging students to become active participants in both campus and city life. This integration helps break down barriers between the educational institution and the local community, promoting a more cohesive and inclusive environment. The importance of creating a deeper sense of belonging to the city among the architecture students has been central to the Royal Academy's strategy of placement in the city center. The principle of Movement involved creating a dynamic interchange between industry, education, and the city. This was achieved by facilitating seminars focusing on both mental and physical movement, ensuring that students, educators, and industry professionals could interact and be aware of each other's positions. Moreover, the Phoenix Group, empowered through this principle, acts proactively in fostering these connections. Their proactive stance ensures that movement between the different sectors is not just possible but encouraged and sustained, leading to continuous development and

innovation. A wish for a closer cooperation between the Phoenix Group and the Royal Academy is yet to develop, mainly because the Academy is still busy establishing its own identity internally. The principle of Circularity introduces a dynamic where high-level decision-makers and students regularly interact and share perspectives. This shift ensures that decisions are informed by the fresh ideas and needs of students, making the educational experience more relevant and responsive. Desire activities played a crucial role in bringing student perspectives to the forefront. This involvement ensures that the educational programs and campus development reflect the aspirations and needs of the student body. The insistence on the circular principle of utilizing existing buildings for architectural education has met some resistance from local decision-makers. However, this approach emphasizes sustainability and the efficient use of resources, aligning with broader environmental goals and fostering a long-term culture of reuse and adaptation. These principles collectively enhance the experience of working with the Kalundborg site by fostering a strong sense of community, encouraging dynamic interaction between various stakeholders, and promoting sustainable practices.

It has been noted that the idea of symbiosis, which currently dominates the industrial cooperation in Kalundborg, stands somewhat in contrast to the principle of circularity. Circularity is an open circuit that allows for an adaptive value creation coming from different stakeholders that might join the process at their own will. Symbiosis on the other hand entails a closed-circuit where each stakeholders' contribution has a recognized and predefined value. The Desire project and principles illustrated at need for circularity to become more dominant in the future.

The shift in focus from problem-solving to potential-building has shown to be crucial to support future growth and adaptability, promoting practices that support ongoing sustainable development from buildings to bioregions. Mapping of ecosystems to identify interconnections and seeing the campus as a new system in an urban context, ensuring its development enhances local needs.

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Monitoring Assessing and Learning from Transformation Journeys in Urban Transformation Sites



Emma Puerari and Alessandro Deserti

Abstract This chapter presents the challenges, opportunities, and insights derived from monitoring, assessing, and learning within urban transformation processes in the Desire project, aligned with the values of the New European Bauhaus (NEB). Focusing on local site experimentations, the chapter explores complex socio-ecological systems, highlighting three assessment dimensions: embracing challenges, empowering choices, and enabling change. The Desire monitoring, assessment, and learning framework combines the logic model with outcome mapping, fostering adaptive, reflexive learning through three distinct modes—learning-by-doing, learning-by-interacting, and learning-through-reflection. The results reveal the importance of inclusive, multi-stakeholder processes to address sustainability, inclusivity, and aesthetics, with special attention to diverse local conditions, participatory decision-making, community engagement, and organizational change. Despite challenges with tracking progress and aligning stakeholder expectations, the Desire site experimentations contribute valuable knowledge on collaboratively developing sustainable urban environments. This chapter underscores the critical need for assessment frameworks that can guide inclusive, adaptable, and responsive processes to complex social and ecological needs, providing a foundation for future urban transformation efforts.

Keywords Monitoring and assessment methods and tools · Reflexive learning · Learning-by-doing · Learning-through-reflection · Peer-to-peer learning · NEB values

E. Puerari (✉)

Associate Professor, Department of Design, Politecnico di Milano, via Durando 10, 20158 Milan, Italy
e-mail: emma.puerari@polimi.it

A. Deserti

Full Professor, Department of Design, Politecnico di Milano, via Durando 10, 20158 Milan, Italy
e-mail: alessandro.deserti@polimi.it

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1 Challenges in Monitoring Assessing and Learning from On-The-Ground Experimentations

Monitoring and assessing on-the-ground experimentations as the ones presented in the previous eight chapters of this book poses significant challenges. When these experimentations happen within fields that touch upon grand-societal challenges such as climate change, climate neutrality, biodiversity loss, etc. By prioritizing measurable impacts [1], the transition from Horizon 2020 to Horizon Europe recognizes the challenges in capturing the broader effects of smaller-scale initiatives, such as local site experimentation projects. This is especially difficult when evaluating their long-term influence on behaviors, organizational structures, and societal patterns [2]. The introduction of the concept of “impact pathways” [3] marked a commitment to tackle these challenges, requiring projects to outline their expected impacts at the proposal stage, while allowing for ongoing adjustments as new evidence and conditions arise throughout the projects’ duration. Such an approach considers the complex nature of socio-ecological systems [4], which are characterized by dynamic co-evolving processes. Micro-scale experimentations, happening on the ground, are viewed as contributors to long-term system transformation and are assessed within their contextual conditions [5]. As highlighted at the beginning of this book contextual conditions, may vary significantly from site to site, underscoring the importance of considering the strong ties to local practices, socio-political conditions, values, and cultures.

Still, the difficulty or impossibility of validating a model that scales up a single initiative to promote a growth model is evident. Moore et al. [6] presented three scaling strategies considered all fundamental to impact larger systems:

- Scaling out refers to the wider dissemination and replication of the solution to impact a larger number of addressant and different contexts.
- Scaling up relates directly to the influence on different governance levels, policies and laws.
- Scaling deep considers the cultural shifts needed to change values and beliefs.

Taking all three scaling strategies into account as necessary [7] for impacting complex systems, challenges the traditional ways of monitoring and assessing on-the ground small scale experimentation. The need to move beyond linear assessment models when dealing with complex systems is even more apparent. The Desire project recognizes the non-linear changes that occur within open environments, fostering learning and creating opportunities to apply the knowledge and skills gained throughout the process. The following sections explain how Desire tackled these challenges. First, the assessment dimensions in Desire are explored. The chapter then moves on to highlight the various learning modes essential for achieving the project’s objectives, followed by an explanation of the methodological operationalization of this framework. The results from the experimentation are examined through the lens of the assessment levels. Finally, these results are discussed in relation to the theoretical background of Desire.

2 The Assessment Dimensions in Desire

The Desire's framework is outlined by three levels (micro-meso and macro) that are represented by three verbs: DO, ASSESS and EMBED, following the in-depth description of Chap. 1 of this book (see also Fig. 1).

While the micro-level, DO, concerns the activities and on-the-ground experimentations described in Chaps. 2–9, the meso-level, ASSESS, extracts lessons from the experimentations and aims to monitor and assess the outcomes emerging from the different European contexts explored in the project. Specifically, the ASSESS level seeks to identify emerging patterns related to the different impact pathways pursued by each site, examining their experiences. This level focuses on assessing how Desire's activities support the transformation of experiment towards NEB values of Sustainability, inclusion and aesthetics, as the transition to a society that embodies such values requires a specific set of competences and skills capable of driving systemic impact. Three assessment dimensions central to the monitoring and assessment process, all of which are essential for achieving impact at a systemic level.

First, “embrace challenges”, represented by the slogan “set up the network”, is the capability of the Desire partner organizations to:

- Identify stakeholders and understand their roles within the local and broader network characterizing the context (i.e. map stakeholders in relation to impact pathways and the activities planned, understand if any of these are crucial to impacting specific parts of the system, draw a set of priorities in relation to engaging specific actors or organizations, etc.).
- Find the suitable ways to collaborate with the stakeholders mapped, considering that some strategies, approaches and tools might be more effective under certain conditions than others (i.e. workshops, activities, learning trips, specific projects, hackathons, etc.).
- Convene interests of the stakeholders involved. To foster long-term engagement, it is crucial to align both intrinsic and extrinsic motivations (i.e. by offering tangible incentives, financial support alongside promoting a culture of mutual responsibility).
- Develop shared visions. Establishing a common sense of purpose is essential for maintaining long-term engagement (i.e. by consensus building techniques, using visualization tools, etc.).

Second, “empower choices”, specifically through “empowering actors and communities”, emphasizes the ability of Desire's organizations (the core team and their extended networks) to create enabling conditions that can drive a shift in power within decision-making processes. Four points are crucial to explore these processes:

- Strengthen actors and communities, by enhancing their ability to contribute meaningfully to decision-making and actions that affect their (i.e. providing resources, building confidence and self-reliance, etc.).

- Leverage existing capacities, by identifying the diversity and richness of broader networks and utilizing skills, knowledge, and resources already present to accelerate progress towards specific outcomes.
- Develop new capacities, equipping individuals or communities with additional skills, knowledge, or tools to address emerging challenges.
- Recognize and harness local leaders, identifying those figures able to create a movement and inspire others.

Third, “enable change”, interpreted as “build evidence and legacy”, reflects Desire’s ability to create a meaningful legacy that contributes to the targeted outcomes. This legacy should align with the three NEB values. The four main capabilities of Desire’s organizations are described as the capacity to:

- Track changes and achievements involves systematically monitoring progress towards set goals, ensuring that both small and large milestones, game changers and adaptation are recognized. Tracking allows organizations to adapt strategies in real-time.
- Use evidence to support transformation means gathering data and outputs to guide processes. Solid evidence, from research or on-the-ground experiences, helps validate approaches and secure stakeholders’ engagement and commitments.
- Leverage on lessons learned to build legacy translates into understanding successful and unsuccessful strategies so that organizations can refine their practices and scale successful models.
- Draw and communicate lessons learned entails reflecting on the experiences gathered throughout the process and effectively sharing them with the relevant stakeholders and allowing for reaching to a broader audience.

At this level, each dimension is mapped across the experiences and trajectories of the experiments at the eight sites. The process identifies patterns, commonalities, challenges, barriers, and opportunities arising from these diverse experiences, which can then inform the broader NEB initiative EMBED level (see Fig. 1).

3 The Operationalization of the Framework

3.1 A Combination of Methodologies

The innovative assessment framework of Desire combines the logic model [8] with outcome mapping [9]. This combination recognizes that change does not necessarily happen in a straightforward cause-and-effect manner but thanks to the complex combination of various factors.

The logic model is one of the most famous and utilized to monitor and assess projects’ impact. Its success is largely due to provide a valuable tool to understand change at high level and to monitor processes through the sequence of inputs, activities, outputs and outcomes. Outputs are the concrete results coming from

specific activities (i.e. a report, number of participants, etc.), while outcomes refer the expected effects over the medium term, representing preconditions to achieve impact. However, despite its success this model comes with several limitations when dealing with complex socio-ecological systems that deal with co-evolving conditions. Indeed, while the logic model tracks outputs and outcomes as something that has been achieved, yet it captures little about the interdependencies that characterize systems change.

Therefore, Desire combines the valuable aspects of the logic model with outcome mapping with the objective to complement strength and weaknesses of both. Outcome mapping rather than understanding impact as a performance measurement, understand impact as a long-term vision that sets the direction of change and help envisioning possible impact pathways of experiments. Within Desire this methodology is used to sustain the sites in defining their challenges, mapping and engaging stakeholders, identifying progress markers as elements that sustain the progression towards the desired outcomes.

The combination of the logic model and outcome mapping is further sustained by a set of learning modes with the explicit objective to leverage monitoring and assessment processes as crucial to strengthen and boost individual and organizational capacities to engage with and learn through system change.

3.2 Three Learning Modes Sustaining Knowledge Creation

The combination of methodologies described above is initiated to support the development of reflexive learning processes where stakeholders can reflect and adapt their initial plans to co-evolving conditions [10]. Reflexivity is then interpreted as “the ability to interact with and affect the institutional setting in which it operates” [11, p. 417].

Local circumstances, existing knowledge, new insights introduced by the project, and contributions from new actors and stakeholders create a unique knowledge-creation environment at each site. As a result, stakeholders must engage in various learning processes that could boost their ability to consider non-linear changes and apply the capabilities acquired during the process. To sustain this approach Desire extracts insights through reflexivity and captures the systemic complexity of the challenges and transformations being addressed with a combination of three distinct learning modes.

Learning-by-doing, associated with the development of the specific demonstrations carried out at the local sites and the experimentation of different processes and tools. This learning mode dates back to Dewey [12], and has been applied in different fields, including design and innovation [13]. Within Desire, the activities carried out by the sites could be framed following Kolb’s learning cycle [14], a model already proved to be effective [15] and used in the field of design.

Learning-by-interacting, focused on the interaction of the local sites through peer-to-peer exchanges both formal and informal. Within Desire peer-to-peer exchange is

considered fundamental to create opportunities for learning and reflecting, creating dialogues of actors bringing different perspectives, points and capabilities into the interaction.

Learning-through-reflection, mainly linked to the monitoring and assessment activities and tools. Participants in the projects are stimulated to reflect upon the observation of their on-site activities but also at the level of the project outcomes.

3.3 The Tools to Operationalize the Framework

To support the operationalization of the monitoring, assessment and learning processes Desire assessment framework provides a set of tools at the use of the involved organizations.

First, a logbook, records the inputs, activities and outputs of the on-site experimentations. Based on the logic model structure such logbook further invites the sites' representatives to reflect upon the outcomes of their activities. Moreover, the logbook showcases the results of three outcome mapping workshops (initial, mid-term, end-of the project) aimed at supporting the sites' organization to set their (outcome) challenges and to monitor and assess the evolution of their processes.

Finally, a peer-to-peer program was designed and organized around the three assessment dimensions (embrace challenges, empower choices and enable change) allowing the sites' organizations to reflect and share their experiences and lessons learned on the basis of pre-defined themes.

4 Results of the Experimentations

The findings from the Desire project highlight several key themes related to urban transformation across diverse sites. The three assessment dimensions in Desire's framework served as lenses for analyzing these findings. To extract lessons learned, data gathered from tools the provided tools-including logbooks, outcome mapping workshops, and the peer-to-peer program-were essential.

4.1 Embrace Challenges

The Desire experimentation in **Wildeman** effectively identified stakeholders, fostered collaboration, and facilitated long-term engagement. The experiment emphasized stakeholder mapping and by prioritizing engagement, which became evident in how groups of citizens were organized and connected. **MIND**, **BTC Ljubljana** and **Cascina Falchera** all represent a clear effort to map and engage stakeholders early in the process, emphasizing the importance of identifying and

understanding their roles within both the local and broader networks. The **Kalundborg** site by adopting the “power of place” approach mapped the eco-systems at different geographical scales and identified existing connections. The use of workshops, reflection sessions, and transparency meetings created conditions conducive to convening interests. These activities helped bridge differences while focusing on convergences. In **Herlev**, in **Cascina Falchera**, and across other Desire sites, the experiment focused on mapping stakeholders in a multi-species perspective.

In **Riga**, the innovative procurement format reflects the key principles of identifying key stakeholders. The co-development of the new procurement process engaged unusual participants. These activities were crucial to prioritize engagement activities and processes. Despite the early successes of this innovative initiative, the slow processes highlight the importance of finding the correct strategies to collaborate. The delays in implementation and ongoing discussions with municipal stakeholders suggest that alternative approaches may be required in future phases.

Similarly, in **Gadehavegård**, the procurement process boosted the identification of stakeholders that transcend the usual suspects. Here, the involvement of transdisciplinary teams served as a successful strategy to collaborate.

Moreover, Desire supported the experimentation by fostering the development of shared visions, which are crucial for long-term engagement. The in-person workshops organized by the different sites with a diverse range of groups are good examples of how different motivation for involvement were aligned toward the creation of shared visions. The enthusiasm of the participants created a sense of ownership of the process encouraging commitment. However, such enthusiasm posed challenges with for involvement particularly in relation to tangible outputs and outcomes.

4.2 Empower Choices

All of the different experiments focused on strengthening actors and communities. In **Wildeman**, for instance, the introduction of the ODGs was a crucial step towards community empowerment; similarly in **Kalundborg** the Phoenix group was enabled to take part in decision-making activities, although they faced challenges in keeping their role once contextual conditions changed (i.e. with the arrival of the students and the Academy). The process characterizing the experimentation in **Gadehavegård**, **Riga** and **BTC** gave voice to those that are usually excluded from decision-making (i.e. kids, youngsters, people with significant mental disabilities). However, the experiments showed that meeting the expectations raised posed challenges to power holders, particularly regarding their capacities to negotiate future outcomes and maintain the trust of those who put effort into the processes. In **Herlev**, the Garden Caretaker project highlighted the importance of transdisciplinary collaboration in community engagement. By bringing together artists, scientists, and community members in co-creation workshops, the project empowered citizens to take the lead in transforming public spaces. Artistic interventions played a significant role in fostering leadership by allowing participants to contribute creatively to the process, ensuring

that the outcomes reflected the needs and desires of the local community. Similarly, in **Cascina Falchera**, community engagement initiatives played a crucial role in shaping the identity of the space. The involvement of local leaders in defining the future vision of Cascina led to a shared sense of purpose and alignment with broader goals. This approach strengthened ties between the community and the experiment, creating a foundation for sustainable urban development driven by local needs and aspirations. In **Kalundborg** the Desire principle of circularity played a crucial role in aligning stakeholders' visions and in creating a sense of belonging. In **MIND**, by approaching beauty and inclusivity collaboratively, the project demonstrated the importance of aesthetic values in shaping public spaces that reflect the community's shared.

A key aspect of this dimension is the **redistribution of power** to give marginalized stakeholders a voice in decision-making. In **Wildeman**, democratization was achieved by redistributing funds to empower local citizens to manage resources. This approach fostered grassroots leadership by giving community members the authority to make decisions about how resources were allocated, ensuring that the project reflected the needs and priorities of the people it aimed to serve. In **Gadehavegaard**, the inclusion of young people in the design and tendering processes provided a significant example of democratization. By positioning youngsters as leaders in social housing transformation, the project challenged traditional power dynamics and allowed youth to play an active role in shaping their environment. This shift in power dynamics demonstrated the potential of democratization to foster more inclusive and innovative urban regeneration processes. At **BTC Ljubljana**, the inclusion of stakeholders from diverse fields, such as biotechnical, architectural, and biodiversity experts, helped democratize leadership within the project. By involving a wide range of voices in decision-making, the project ensured that various perspectives were considered in the development of greening and sustainability initiatives. This approach not only broadened the scope of leadership but also enriched the outcomes of the project by integrating expertise from multiple disciplines.

All Desire sites' organizations took on the challenge of utilizing existing capacities and developing new ones. Many of these capacities were either identified or harnessed through transdisciplinary processes or acquired through the three learning modes described above. The emphasis on reflecting upon processes greatly enhanced these aspects. However, the limited time and resources dedicated to these activities posed a significant challenge to the overall success of the experimentations at the project level.

4.3 Enable Change

The Desire project faced several challenges in tracking changes and achievements throughout its implementation, particularly due to time constraints, resource limitations, and the complexity of engaging multiple stakeholders. One major difficulty encountered by the local sites was the limited timeframe and resources available

for reporting and reflection activities. The need to prioritize on-the-ground connections with local stakeholders posed issues with maintaining motivation to keep the reporting up to date, except during specific assessment periods and moments triggered by Desire as a whole (i.e. assessment activities).

In bringing evidence from the experimentation, several challenges emerged. In **Riga**, while citizen engagement workshops were successful in fostering community relationships, many practical interventions or experiments in physical spaces exceeded the municipality's capacity. In **Wildeman**, the need to prioritize trust-building, transparency, and collaborative decision-making often delayed the tracking of tangible outputs and outcomes, making it harder to monitor the progress in real-time. Similarly, in **Herlev** the complexity of managing interdisciplinary and transdisciplinary collaborations posed challenges in identifying and tracking smaller achievements, especially when goals and methods differed between parties. In **Cascina Falchera** the evolving nature of internal shifts, coupled with the complexity of managing multiple activities, made it challenging to monitor smaller achievements or quickly measure the impact of new approaches. Similarly, in **Kalundborg** the shift in conditions played by the arrival of students posed a questions of adaptability of the initial goals, resulting in challenges with tracking achievements.

Despite the difficulties with tracking evidence and achievement, several approaches were put in place at the different Desire sites alongside the project activities. These included writing reports, reflection sessions, workshops to reflect upon the process, pictures, etc. In **Gadehavegård**, the development of a white paper from young participants boosted the reporting. In **MIND** the development of the "MIND for all" framework represented a great effort put in place towards reaching this goal.

Finally, the implementation of multi-level engagement enabled the different sites to learn how to communicate lessons learned to different audiences. Throughout the experimentations, they were encouraged to both reflect and share their findings with peers, as well as to their local, regional and national networks using different platforms (e.g. social media, art exhibitions, projects announcements, reporting back to engaged stakeholders, etc.).

5 Desire Experiments and NEB Values

The Desire project results provide valuable insights into urban transformation processes, reflecting the core values and principles of the New European Bauhaus. While analyzing these experimentations through the lens of the three NEB values the project demonstrates how these values could be attained as guiding stars for the transformation. The key results from the transformation highlight both successes and challenges of translating the NEB values and principles into practice.

The Desire project interpretation of the value "beautiful" extends beyond physical appearance to include community-driven processes and collective experiences. This approach aligns with the definition of beauty outlined in the Compass [16], where the focus is on social interaction, collective experiences and the creation of a

long-lasting movement. This approach is clearly demonstrated in experiments where the transformation was defined through collective visioning creating a deep sense of belonging. Similarly, the principle of circularity contributed to the development of a holistic concept of beauty, including ecological balance and sustainability. For example, young people's involvement in the co-design process infused the project with fresh perspectives, allowing beauty to emerge organically. However, the experience across sites revealed that managing the emergence of beauty can be challenging when expectations of different stakeholders are not aligned with reachable outcomes. Within *Desire*, the concept of "beauty" aligns with the one of "spontaneous beauty" [17] outlined in Chap. 1, posing the issue of operationalizing the development of enabling conditions for such collective spontaneity to emerge.

Second, the value "sustainable" was central to all the activities conducted in *Desire* both at the level of on-the-ground experimentations and at the project level. *Desire*'s interpretation of this value transcended the environmental dimensions of resource use and circularity, encompassing holistic approaches of natural resource management, behavior change, learning processes, and biodiversity promotion. However, implementing sustainability came with its own challenges, highlighting the need for flexible and adaptive strategies to ensure sustainability goals can be tracked and met, particularly in complex, multi-stakeholder environments. These challenges underscore the importance of creating processes that can accommodate diverse actors while maintaining the focus on long-term sustainability.

Finally, *Desire* embraced the value "together" by prioritizing stakeholders identification and engagement and inclusivity across different sites. The operationalization of this value touched upon different principles such as the creation of a participatory process that could include knowledge and capacities from different sectors through transdisciplinary approaches and more-than-human perspectives. Moreover, the necessity to keep up with different governance levels became evident both at the level of the sites' experimentations and at the project level. The opening up of processes reflects a call to break down silos between sectors and communities. These approaches were clearly shown by all the *Desire* sites with a richness of different approaches, methods and tools to address the complexity of their challenges. From redistributing funds and restructuring decision-making processes, redesigning procurements, involving experts, restructuring the purpose and role of the experiments, etc.

These concepts can be operationalized to foster more inclusive, collaborative, and regenerative urban environments. The key themes emerging from the experimentations across diverse sites illustrate both the successes and challenges of translating NEB values into practice, particularly through the three assessment dimensions of embracing challenges, empowering choices, and enabling change.

6 Directions for Future Work

The framework and results presented in this chapter raise important considerations related to urban transformation within the NEB initiative.

First, there is a need to clarify the role and value of monitoring and assessment tools, such as those briefly presented in this chapter. Reflexive processes play a crucial role in enabling the adaptability and flexibility of these frameworks. However, the involvement of stakeholders in the experimentation is often limited by a scarcity of time and resources.

Second, the connections identified between the results of the *Desire* projects and the NEB values highlight the challenge of further understanding how to design enabling and constraining conditions that allow sustainable, inclusive, and beautiful solutions to emerge.

Finally, the outcomes of the *Desire* experimentations emphasize the necessity of providing more evidence on how to collectively make the transition toward sustainability not only acceptable but also desirable.

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