Disclosing Interstices

Open-ended Design Transformation of Urban Leftover Spaces

Sitong Luo

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This dissertation has been approved by the promotors.

Composition of the doctoral committee:

Rector Magnificus,	chairperson
Prof.dr.ir. T.L.P. Avermaete	Swiss Federal Institute of Technology, promotor
Prof.dr.ir. K.M. Havik	Delft University of Technology, promotor
Dr.ir. S.I. de Wit	Delft University of Technology, Copromotor

Independent members:

Prof. dr. E. Braae	Copenhagen University
Prof. ir. E.A.J. Luiten	Delft University of Technology
Prof. dr. L. Lévesque	Université Laval
Prof. Dipl. -Ing. L. Lička	University of Natural Resources and Life Sciences
Prof. dr. ir. M.J. van Dorst	Delft University of Technology (reserve member)

For mother Yan Jin and father Anqin Luo

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Sitong Luo

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Summary

This thesis discloses the relationship between the landscape architectural design intervention and the indeterminacy of urban leftover spaces base on recognizing these spaces as spatial-temporal interstices of the city. As neglected parts of the urban functional system, leftover spaces accommodate wild flora and fauna within the city and offer unique opportunities for different informal social uses. These spontaneous social-ecological processes are usually restrained in other formal urban open spaces with predefined functions and programme. The interstitial condition of leftover spaces should be embraced as valuable quality in the city, offering a crucial counterpart that nurtures diversity and calls forth citizens' creative engagement with their everyday urban living environment. In this context, the design of leftover spaces poses a **paradox** between the practice of design that projects a set of definitions to the spatial configuration, programme, role, and meaning of the site, and the indeterminacy of leftover spaces that opens for appropriation and interpretation. While enhancing the current condition of the site for new social uses or different groups of flora and fauna, the design intervention may simultaneously close off the opportunity for a wide range of unforeseen changes in the future. By recognizing this seemly controversial relationship between the design and leftover spaces, this research aims to examine open-ended design approaches that fully use the potential of the paradox for activating leftover spaces without losing their essential openness and inclusiveness. The research question is formulated as follows:

"How can design make use of the paradox between the definition projected by the design and the indeterminacy of leftover spaces, to manifest qualities of leftover spaces while retaining an open-endedness?"

The research question is answered through two research components. The first component is a set of theoretical lenses—the morphological lens, social lens, ecological lens, and material lens—that allow the designer to see the same existing territory in different ways and to interpret the qualities of a leftover space from multiple angles. The unkempt and abandoned appearance of these sites tend to prevent people from recognising the existing site qualities, therefore these lenses provide a crucial approach to understand different dimensions, qualities, and characteristics of the leftover space, serving the starting point of the design. Shifting between different lenses makes the designer aware that the qualities of the leftover space play an equally important role in the site transformation.

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The second research component is the case study of three design projects, which reveals in real life situation how design can transform leftover spaces in a way that facilitates open-endedness in the future. Base on reviewing eight design projects that present a gradient of site transformation—from open-ended, spontaneous processes to regulated processes, and from left to its own devices to architecturally defined—three seminal cases are selected for in-depth study. These three cases all present a combination of spatial-formal design definition and open-ended processes afterwards. The first case is the temporary pavilion Valby Smedestræde 2 in Copenhagen, launched as an experimental case of the UCPH research project SEEDS that explores temporary use of urban vacant sites. The second case is *Le Jardin Du Tiers-Paysage* [the Garden of the Third Landscape] on the roof of the abandoned submarine base of the estuarial town Saint-Nazaire. The garden is an artistic project made by landscape architect Gilles Clément as part of the biennial art exhibition Estuaire launched by Nantes cultural institution *Le Voyage à Nantes*. The third case is the communal garden Dalston Eastern Curve Garden in London, as one of ten pilot projects of the design study *Making Space in Dalston* conducted by two London-based design offices muf architecture/art and J&L Gibbons. The four theoretical lenses are developed into methodological lenses for studying the three cases, focusing on how design transforms the qualities of the site through each lens. The analysis is translated into analytical drawings, specific for each lens. This method builds on the formal layers approach developed at the chair of landscape architecture in TU Delft. The principle of this method is to regard the site as an integrated ensemble and to analyse it through the anatomy of individual drawings in each topic. In this way the drawings expose the spatial-formal design interventions in each lens, serving as a foundation for cross-case discussion where valuable design instruments can be detected.

The result of the cross-case discussion—a set of design instruments for engaging leftover spaces—is discussed first on single lenses, and then on combined lenses. In each single lens, the emphasis is given to how the design can understand and further transform the morphological, social, ecological, and material qualities of leftover spaces. Following that, the discussion focuses on the complementarity of different lenses, which demonstrates how to simultaneously activate multiple qualities of a leftover space through designing with the synergy of different lenses. The analyses show that designing leftover spaces through multiple lenses is not optional but a necessity; in this way, the design has a capacity to facilitate the engagement and participation of multiple social actors in the site transformation process. Base on the discussion of design instruments, four general *modi operandi*—disclosing, selecting, founding, and sustaining—are concluded to guide designers to conduct site reading and intervention step by step. Disclosing refers to the reading and interpreting of the site qualities; selecting refers to the step that filtrates the most interesting and

important site qualities as the focus of the design; founding refers to the design intervention where new spatial, physical compositions are projected to the existing site, and sustaining refers to the site maintenance after the design, to prolong the effect of the design by responding to natural factors or artificial impacts that emerge during the transformation of the site.

The research further draws lessons for the design of general urban open spaces from studying the paradox of the design regarding the interstitial condition of leftover spaces. It provides a substantiated argument for designers to consider site interventions as the result of a deliberate examination and understanding of the conditions and specific characteristics of the existing site. To further maintain the open-endedness of the design, the role of "gardeners" is highlighted, referring to a group of social actors who take care of the everyday processes of the site, nurturing and balancing diverse social usages and ecological processes. At the end of the thesis, the particular value of landscape architectural design for general urban open spaces is addressed: landscape architecture as open-ended practice; site-specific design that enables open-endedness; landscape architectural design as mediation.

Samenvatting

Deze dissertatie onthult de relatie tussen de landschapsarchitectonische ontwerpinterventie en de onbepaaldheid van stedelijke restruimten, door deze ruimten te beschouwen als ruimtelijk-temporele tussenruimten. Als verwaarloosde delen van het stedelijke functionele systeem, herbergen deze restruimten wilde flora en fauna en bieden unieke mogelijkheden voor verschillende informele sociale gebruiken. In andere, formele stedelijke open ruimten met hun voorgedefinieerde functies en programma zijn deze spontane sociaal-ecologische processen vaak beperkt. De interstitiële conditie van restruimten moet worden omarmd als een waardevolle kwaliteit in de stad, die een cruciale tegenhanger biedt waar diversiteit wordt gekoesterd en burgers opgeroepen tot creatieve betrokkenheid bij hun alledaagse stedelijke leefomgeving. In deze context vormt het ontwerp van restruimten een **paradox** tussen de ontwerppraktijk die een reeks definities projecteert voor de ruimtelijke configuratie, het programma, de rol en de betekenis van de locatie, en de onbepaaldheid van restruimten die openstaat voor toe-eigening en interpretatie. Terwijl een ontwerpingreep de huidige conditie van de locatie kan verbeteren voor nieuw sociaal gebruik of verschillende groepen flora en fauna, kan het tegelijkertijd de mogelijkheid afsluiten voor een breed scala van onvoorziene veranderingen in de toekomst. Door deze schijnbaar controversiële relatie tussen het ontwerp en restruimten te erkennen, bestudeert dit onderzoek open-ended ontwerpbenaderingen, die het potentieel van de paradox voor het activeren van restruimten zonder hun essentiële openheid en inclusiviteit te verliezen, volledig benutten. Dit leidt tot de volgende onderzoeksvraag:

"Hoe kan ontwerp gebruik maken van de paradox tussen de definitie die door het ontwerp wordt geprojecteerd en de onbepaaldheid van restruimten, om de kwaliteiten van restruimten te manifesteren en tegelijkertijd een open einde te behouden?"

Deze onderzoeksvraag wordt beantwoord door middel van twee onderzoekscomponenten. De eerste component is een set van theoretische lenzen - de morfologische lens, sociale lens, ecologische lens en materiële lens - die de ontwerper in staat stellen hetzelfde bestaande territorium op verschillende manieren te zien en de kwaliteiten van een restruimte vanuit meerdere invalshoeken te interpreteren. De onverzorgde en verlaten uitstraling van deze terreinen hebben de neiging mensen te verhinderen de kwaliteiten van het bestaande terrein te

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herkennen, daarom bieden deze lenzen een cruciale benadering om de verschillende dimensies, kwaliteiten en kenmerken van de overgebleven ruimte te begrijpen, als uitgangspunt voor het ontwerp. Door te schakelen tussen verschillende lenzen maakt de ontwerper ervan bewust zijn dat de verschillende kwaliteiten van de restruimte een gelijkwaardige rol spelen in de transformatie van de site.

De tweede onderzoekscomponent is de casestudy van drie ontwerpprojecten, die in de praktijk laat zien hoe ontwerp restruimten heeft getransformeerd op een manier die openheid in de toekomst mogelijk maakt. Op basis van een bespreking van acht ontwerpprojecten die een gradiënt van transformatie vertonen - van spontane processen met een open einde naar gereguleerde processen, en van aan zichzelf overgelaten naar architectonisch gedefinieerd - worden drie voorbeelden geselecteerd voor een diepgaande studie. In deze drie projecten is er sprake van een combinatie van ruimtelijk-formele ontwerpdefinitie en open-ended proces. Het eerste voorbeeld is het tijdelijke paviljoen Valby Smedestræde 2 in Kopenhagen, gelanceerd als een proefproject van het UCPH onderzoeksproject SEEDS dat tijdelijk gebruik van stedelijke braakliggende terreinen onderzoekt; Het tweede geval is *Le Jardin Du Tiers-Paysage* [de Tuin van het Derde Landschap] op het dak van de verlaten onderzeeërbasis van de havenstad Saint-Nazaire. De tuin is ontworpen door landschapsarchitect Gilles Clément als onderdeel van de tweejaarlijkse kunsttentoonstelling Estuaire, gelanceerd door de Nantes culturele instelling Le Voyage à Nantes. Het derde voorbeeld is de gemeenschappelijke tuin Dalston Eastern Curve Garden in Londen, één van de tien proefprojecten van de ontwerpstudie Making Space in Dalston, uitgevoerd door het Londense ontwerpbureau muf architecture/art en J&L Gibbons. De vier theoretische lenzen worden ontwikkeld tot methodologische lenzen waarmee de drie casussen worden onderzocht, waarbij de nadruk ligt op de manier waarop het ontwerp de kwaliteiten van de locatie door elke lens transformeert. De analyse is vertaald in analytische tekeningen, specifiek voor elke lens. Deze methode bouwt voort op de formele lagenbenadering die is ontwikkeld door de leerstoel landschapsarchitectuur van de TU Delft. Het principe van deze methode is om de locatie te beschouwen als een geïntegreerd ensemble en dit te analyseren door middel van de anatomie van individuele tekeningen in elk onderwerp. Op deze manier leggen de tekeningen de ruimtelijk-formele ontwerpingrepen in elke lens bloot en dienen als basis voor een cross-case discussie waarin waardevolle ontwerpinstrumenten kunnen worden gedetecteerd.

Het resultaat van de cross-case discussie - een set van ontwerpinstrumenten voor restruimten - wordt eerst besproken aan de hand van de enkelvoudige lenzen, en vervolgens van gecombineerde lenzen. Bij elke afzonderlijke lens wordt de nadruk gelegd op hoe het ontwerp de morfologische, sociale, ecologische en materiële kwaliteiten van restruimten kan begrijpen en verder kan transformeren. Daarna

richt de discussie zich op de complementariteit van verschillende lenzen, die laat zien hoe je gelijktijdig meerdere kwaliteiten van een restruimte kunt activeren door te ontwerpen met de synergie van verschillende lenzen. De analyses laten zien dat het ontwerpen van restruimtes door meerdere lenzen niet optioneel is maar een noodzaak; op deze manier kan het ontwerp de betrokkenheid en participatie van meerdere sociale actoren in het transformatieproces van de plek faciliteren. Op basis van de bespreking van de ontwerpinstrumenten worden vier algemene *modi operandi* - onthullen, selecteren, funderen en gaande houden - geconcludeerd als hulpmiddel voor ontwerpers bij het stap voor stap lezen en transformeren van de locatie. Onthullen verwijst naar het lezen en interpreteren van de kwaliteiten van de locatie; selecteren verwijst naar de stap die de meest interessante en belangrijke kwaliteiten van de locatie filtert als de focus van het ontwerp; funderen verwijst naar de ontwerpinterventie waarbij nieuwe ruimtelijke, fysieke composities worden geprojecteerd op de bestaande locatie, en gaande houden verwijst naar het onderhoud na het ontwerp, om het effect van het ontwerp te verlengen door in te spelen op natuurlijke factoren of kunstmatige invloeden zich voordoen tijdens de continue transformatie van de locatie.

Uit het bestuderen van de paradox van het ontwerp met betrekking tot de interstitiële conditie van restruimten trekt het onderzoek ook lessen voor het ontwerp van algemene stedelijke open ruimten. Het is een pleidooi om ruimtelijke ontwerpingrepen op te vatten als wat volgt op het weloverwogen onderzoek en begrip van de omstandigheden en specifieke kenmerken van de bestaande locatie. Om de openheid van het ontwerp verder te handhaven, wordt de rol van "tuiniers" benadrukt, verwijzend naar een groep van sociale actoren die zorg dragen voor de dagelijkse processen van de locatie, het koesteren en in evenwicht brengen van diverse sociale gebruiken en ecologische processen. Aan het eind van het proefschrift wordt ingegaan op de bijzondere waarde van landschapsarchitectonisch ontwerp voor algemene stedelijke open ruimten: landschapsarchitectuur als open-ended praktijk; locatiespecifiek ontwerp dat open-endedness mogelijk maakt; landschapsarchitectonisch ontwerp als bemiddeling.

1 Introduction

1.1 Opening

In neglected parts of the city, we occasionally encounter unexpected, special spaces: empty backyards, overgrown plots, and abandoned rail tracks hidden within the urban territory, covered by overgrown vegetation, visited incidentally by citizens or wild animals. This condition emerges when the original functions of these spaces are lost, resulting in abandoned sites scattered across the city. These types of spaces may also be produced because of a lack of integration between urban developments, leaving them as blank gaps in between urban function zones (Figure 1.1). In their neglect, the traces of previous urban occupation start to slowly fade away, and an ambiguity about the space's usage, image, and meaning emerges. This ambiguity welcomes spontaneous urban ecological processes or informal social practices to take place and to further transform the site. These leftover spaces distinguish themselves from other, standardised and regulated spaces, serving for specific urban programme and functions. If the specific quality of leftover spaces lies in the fact that these spaces are unplanned and undefined, then can there be a role for design in re-engaging these special spaces?

FIG. 1.1 Leftover space as terrain vague
A residual space at the end of innenhafen Duisburg, bounded by highway A59, the backside of a residence on Falkstraße, and the trainyard of GmbH. Its ambiguous image distinguishes the site from other maintained and functional urban spaces.

To explore potential design approaches for leftover spaces, this research regards those leftover spaces as spatial, temporal interstices of the city, following architect Luc Lévesque's proposal of a landscape approach for designers to engage the interstitial conditions of terrain vague in an open manner[1]. According to Luc Lévesque: "Etymologically, interstitial denotes something found 'in between' things. Referring to the notion of interval, it also means 'a space of time.' Thus, the interstitial embraces not only such notions as openness, porosity, breach and relationship, but also those of process, transformation and location" (Lévesque, 2002). Acknowledging the interstitial condition of leftover spaces highlights that these are not just empty spaces, but are also spaces capable of nurturing change and transformation.

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1   Terrain vague is a concept used to describe a group of empty and abandoned spaces within the urban territory as alternative spaces existing 'outside the city's effective circuits and productive structures.'' See: de Solà-Morales, I. (1995). Terrain Vague. In C. Davidson (Ed.). *Anyplace.* Cambridge, MA: MIT Press. The concept will be introduced in the section "1.2.1 Leftover Space as Urban Interstice".

Leftover spaces may offer ideal sites for diverse creative appropriation, informal uses, and spontaneous ecological succession, which may be troublesome to establish in other, formally-managed urban spaces. The common character of these processes is that they are unpredictable and come into being in the absence of planning. Such a valuable condition provided by leftover spaces could be grasped by the term 'indeterminacy.' Recognising the potential of indeterminacy in the interstitial condition raises a question: could the design still engage such interstitial conditions? And, if the answer is yes, then what would be the added value of the design?

The answer is complicated and varies for each site. However, the primary value of design intervention is indicated in Vervloesem & Dehaene: "Vacant lots … may exert an extraordinarily positive influence on the imagination, but by the same token they are a denial of all the opportunities offered by a well-functioning urban environment" (2011, p. 17). Leftover spaces may provide a broad spectrum of possible options for use, but in many cases these spaces lack proper conditions to accommodate people. From this perspective, the design could prepare the site conditions for hosting a multitude of social-ecological processes and open up the sites' potential qualities.

Nevertheless, what has happened to most designed leftover spaces is that the latent indeterminacy of the space is erased by the design intervention. A common example is the design of leftover spaces for temporary use, such as communal vegetable gardens. The design intervention releases leftover spaces for the appropriation of participatory local people; however, the resulting spatial entity presents a collage of planting plots, sheds, and agricultural tools, somewhat unwelcoming to visitors other than the owners of the garden. In other cases, the design fixes the site as a formal urban space, excluding any other informal occupation. An example of this is Highline Park in New York, where the design has transformed an industrial viaduct into a brand-new park. Along with celebrating the successful revitalisation of this derelict structure, the design simultaneously fixed the site as a formal urban space, excluding the possibility of any other informal occupation.

These two examples of design practice inform us that a **paradox** exists in the designing of leftover spaces, between the definition projected by the design and the multiple potentials that lie in the indeterminacy of leftover spaces: the design can facilitate or make explicit certain qualities of leftover spaces, but it simultaneously projects new definitions to the spatial configuration, usage, and meaning of the site. In this way, the design closes the site off from being appropriated by other human or non-human agencies in any future transformation. Examining how this paradox manifests in the design transformation of leftover spaces, it may let us find design instruments that bring together the capacity of design intervention and the indeterminacy of leftover spaces, allowing designers to engage with leftover spaces

in an open-ended manner. The insights gained from the paradox of design in the context of leftover spaces could further enrich the design approaches of general urban open spaces. Nowadays, these urban spaces need to respond to an urban environment that has become much more heterogeneous and dynamic, and thus, they need open-ended design approaches that allow for unexpected and varied uses and agencies.

This research examines this paradox of design and explores open-ended design approaches for leftover spaces from the position of landscape architecture. Landscape architectonic design derives from site-specific conditions while enabling continuity in the site's transformation. When discussing the landscape approach to engaging conditions of terrain vague, Paola Gregory suggests that both a cautious reading of the site condition and an engagement with a set of relationships and processes of the site are essential to the design—"a group of relations and interactions never firmly definable, never unequivocally comprehensible, revealed in the dialog opened between the human world and natural regime, strictly interrelated to form a system in continuous evolution and transformation" (2003, p. 13).

What are the potential landscape design approaches that facilitate certain qualities of leftover spaces while still leaving the transformation of the site open to other informal and spontaneous processes? This research investigates this question through the analysis of three empirical case studies, examining the reading of the design and transformation of leftover spaces. Before discussing these projects, the important themes of this research will first be elaborated.

1.2 Opening

1.2.1 Leftover Space as Urban Interstice

Spatial and Temporal In-Between

Leftover spaces refer to empty, overgrown, or abandoned spaces within the city. Two reasons can be highlighted as to why these spaces come to exist: first, these spaces are often the result of urban transformation. As the former function or role of a space ceased, the piece of land was abandoned. Examples in this case are disused harbours and train yards, abandoned industrial areas, empty lots in the neighbourhood, etc. Second, leftover spaces are found in the gaps left between different urban tissues. The contemporary city is no longer designed as an overall plan, but is formed by different institutions and developers that sometimes fail to acknowledge each other. The resulting urban territory represents islands of defined urban use, with pieces of remaining land between them. The examples in this category includes spaces between highways and industrial land[2], neglected areas along waterfronts or pieces of overgrown or unkempt spaces at corners where streets meet. Indeed, leftover spaces may take various forms, rejecting a clear physical definition. Consequently, this research approaches those spaces from their in-between situation, taking them as spatial-temporal interstices of the existing city.

Several authors have addressed the notions relating to these spatial-temporal interstices. The first concept is **terrain vague**, introduced by Ignasi de Sola-Morales. His article "Terrain Vague" describes a group of spaces within the urban territory that are empty and abandoned. According to de Sola-Morales, these spaces are "outside the city's effective circuits and productive structures" (de Solà-Morales, 1995, p. 121). In de Sola-Morales' view, what characterizes terrain vague is its ambiguity. The image of terrain vague does not comply with a clear identity like other conventional urban spaces but it invites people to creatively engage with the meaning of such spaces. These spaces are "the most solvent sign with which to indicate what cities are and

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2   This case excludes spaces like, for example, embankments of infrastructures, which are in-between in terms of space, but not in terms of time and function; the spaces are maintained as clear safety zones to allow for their proper functioning.

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what our experience of them is" (de Solà-Morales, 1995, p. 119). De Sola-Morales'
writing of terrain vague delivers the first feature of interstitial spaces: these spaces, in
their appearance and function, are different from normative urban spaces, immediately
raising unfamiliarity and confusion to those who encounter them. The notion of terrain
vague captures interstitial spaces from a spatial dimension, as an image to the eye and
experience to the body, and as ambiguous spaces within the urban territory.

A discussion of **Urban Interstice** is offered by Andrea Mubi Brighenti, in his
introduction to the book *Urban Interstices, the Aesthetics and the Politics of the
In-Between*. Besides the spatial definition, Brighenti highlights a temporal dimension
to understand urban interstices. According to Brighenti, the interstice is not only
a spatial and morphological subject but also a phenomenon, an event, and a
happening. He makes a plea for examining the interstice from the perspective of
territorial transformation: "An enriched observation of the processes of territorial
production, stabilization and transformation is required" (2012, p. xvi). Underlining
the temporal dimension of interstitial spaces means we cannot simply look at them as
spaces that are empty, but rather need to regard them as special gaps that connect
what happened before and what can be nurtured in the future of surrounding urban
environment. By understanding the formation of an interstitial space, it exposes other
cultural or historical characteristics of the place that may be hidden from a simple
glimpse. For example, in Heike Rahmann's study of Tokyo's voids, she notes that these
empty spaces are connected to the city's urban planning policy, urban transformation,
and cultural practice, of which they simultaneously offer a representation: "the
particularity of Tokyo's voids is rooted in context and culture and in the unpredictable
and complex nature of the city" (Rahmann & Jonas, 2014, p. 118).

In more recent examples of design practices of interstitial spaces, this temporal
dimension is crucial when considering the effect of design: once an abandoned
space is transformed into a new urban functional space, it may have significant
impact on the surrounding urban territory. Like the case of High Line park mentioned
earlier: following the proposal of a group of social initiatives by the Friends of the
High Line, the previous industrial rail line was converted into a linear urban park.
However, by changing this abandoned space into a new urban landmark, the design
transformation triggered dramatic changes in the surrounding neighbourhood.
The neighbourhood had previously been a mix of working-class residents and
light-industrial businesses, but when the High Line became a tourist destination, it
attracted an abundance of business investments such as hotels, luxury stores, and
restaurants. People who used to live or work in the neighbourhood were forced to
move away because of the increase in rental prices. The design intervention in this
interstitial space therefore not only affected the condition of this single site but had a
far-reaching influence on the social and economic conditions of its surroundings.

To look at interstitial space from a temporal dimension, therefore, it should be distinguished from concepts like *terrain vague* that emphasise that the potential of the space lies in its separation and isolation. On the contrary, bringing in a temporal perspective reminds people that the status of the interstitial is rather ephemeral and fragile; these spaces may be occupied by new urban functions at any time in the future. This temporary dimension reminds us that interstitial spaces are not only the counterpart of functional urban spaces, but they are simultaneously substantially tied to their surrounding environment and have the significant potential to influence the transformation of an urban environment (Figure 1.2).

FIG. 1.2 Leftover space as spatial–temporal interstice, Mathenesse Vierhavensstraat, Rotterdam
After the previous building blocks were pulled down in 2003, only the north area of the site was built on with new residential apartments, leaving a small piece of empty ground unoccupied for over 15 years. In 2020, the new housing development began, marking the end point of this urban interstice.

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In line with Brighenti's concept of urban interstice, Luc Lévesque proposes that terrain vague be approached as **spatial-temporal interstices**, emphasising them as both in-between spaces and spaces in the interval of urban transformation. In Luc Lévesque's article "Trajectories of Interstitial Landscapeness: A Conceptual Framework for Territorial Imagination and Action", he introduced the sociological study of the Chicago school on marginal, abandoned urban spaces, which addresses the transformative capacity of these spaces for the existing social structure. For example, in sociologist Frederick Thrasher's study of the empty, in-between zones of the city, these abandoned zones in the city's periphery are termed as "gang land" because these spaces are often visited by teenagers, becoming places where they gather and hang out. Thrasher pointed out that character of gang land fully meets the teenagers' desire for something adventurous, unofficial, and even hostile. These unregistered urban areas, because of their vague and fluid identities, offer a special condition: as "a specific period in the evolutionary process of the city"[3] through hosting "cultural, moral and economic conflicts." (Lévesque, 2002, p. 25) To conclude, from Luc Lévesque's proposal, a fruitful understanding of the interstitial space should include both the spatial and temporal dimension. Interstitial spaces are not only in-between spaces but also represent intervals in the process of urban transformation. Analysing these spaces requires the designer to acknowledge their isolated status, distinguishing them from other common urban spaces, as well as investigating their latent potential in the city's transformation.

Other Notions of Interstice

In the discussions of de Sola-Morales, Brighenti, and Lévesque, we gain an understanding of the spatial, temporal characteristics of interstice. In the following writings, I will introduce several relevant concepts from other scholars. Together, these concepts highlight a set of specific circumstances—which can be summoned up as an indeterminacy—in leftover spaces' interstitial condition.

In the study of morphology of urban environment in western modern cities, architect Stefano Boeri uses the term **Urban Void** to describe those spaces as the in-between gaps of the diffused urban pattern. Boeri recognises these spaces as those that fall outside of our concept of a classic city with an integrated urban structure. These spaces are "nameless" and "meaningless" parts of dispersed urban territory, which

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3   According to Lévesque, Thresher's concept of interstice corresponds with Fredric Jameson's enclave theory. As Jameson argues, interstitial spaces offer "the utopia possibility for the development of 'counter-hegemonic values' that encourage the social transformation."

invite multiple "codes" to be "superimposed or juxtaposed with each other" in the space (Borret, 1999, p. 241)[4]. The urban void is the container in which multiple identities and meanings can co-exist in the existing city. Therefore, the concept of urban void highlights the symbolic indeterminacy of leftover space, asking for the attention to capture these spaces as the manifestation of hybrid social-cultural identities in the modern city.

Reviewing hidden and abandoned urban wasteland, Gil Doron borrows the name "**Dead Zone**" from the urban planner's jargon to argue precisely that these spaces cannot be defined by a given terminology (Doron, 2010). As Gill Doron pointed out, when a definition is given to describe those spaces it demarks a boundary and therefore a fixation: "Naming, more than classifying, something as 'out' there, symbolises something that comes from the one who names it (Tesone, 2011). It is to exclude something from within and re-creating it as identifiable other" (2010, p. 32). In addition, Doron noted that the potential of those spaces lies in the way that they are undefined and uncertain, which offers an emancipation for social marginal groups and pioneer cultural practices. Doron's discussion sheds light on the indeterminacy of leftover spaces, especially on their identities and social practices. While acknowledging the capacity of these spaces for nurturing alternative social practices in the urban realm, Doron argues that these spaces further ask us to re-examine conventional design practices: "Whether architects and planners can engage with the space where their sovereignty is suspended, … Maybe, for several reasons, it could not be done in the practice itself" (Doron, 2010). Hence, the interstitial space calls us to search for a new role for design, and for the designer, that can exploit the potential of these spaces.

Reviewing the myriad informal activities taking place in the abandoned, leftover spaces of Berlin, Kenny Cupers and Markus Miessen put forward the notion of **Space of Uncertainty**. Cupers and Miessen argue that there is a programmatic rigidness in the existing public spaces of Berlin, which act as the "showcase rather than as public platforms of interaction" (Cupers & Miessen, 2002). Consequently, designed formal public spaces are inadequate to host manifold social identities in the city. Nevertheless, leftover spaces are different. Contrary to top-down designed public spaces, leftover spaces are open to different social groups and allow them to occupy or to interact with the space as they so choose. Space of uncertainty brings forward such spaces where the fixed programme and meaning is missing, and where a self-constructed identity could emerge.

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4   Borret reviews Stefano Boeri's article: *'les paroles des habitants: ou les codes entrent en conflit'*, in *A moving city*. Studio open city (Brussels: Studio Open City, 1998).

Contrary to the social perspective taken by Cupers and Miessen, landscape architect and garden designer Gilles Clément introduces the notion **the Third Landscape** to refer to a piece of land that is abandoned after human activities and industrial exploitation cease—"hidden spaces that escape monoculture and forgotten by human industry" (2004, p. 3). Those pieces of land are now left for nature alone, capable of hosting the spontaneous growth of ruderal plants. The third landscape is characterised by nature succession without intentional human interference, highlighting the ecological indeterminacy of leftover spaces for accommodating non-human agencies (Figure 1.3). This ecological potential is highly relevant for examining the transformative capacity of interstitial spaces. However, some interstitial spaces may acquire a different image from the third landscape. Normally speaking, the third landscape refers to those large pieces of previously industrial land, commonly recognised as urban wasteland. The interstitial spaces referred to in this research frequently manifest as pieces of unused, neglected land, some of which have overgrown vegetation, while others are barren land, or covered by hard, concrete surfaces.

FIG. 1.3 The Third Landscape developed on previously industrial land in Untermeiderich, Duisburg.
After the factory closed in the 1980s, a group of pioneer poplar trees started to grow on-site, transforming the previous industrial wasteland into a natural reservoir.

The aforementioned relevant notions of leftover spaces indicate the indeterminacy of these sorts of spaces in different perspectives and dimensions. To conclude, the indeterminacy of leftover space can be elaborated by the following different layers, regarding their location, spatial form, materiality, and programme: 1) Location: interstitial spaces appear incidentally and can be found across the urban territory. Further, interstitial spaces can hardly be identified from the institutional maps that represent the city as complete and intact. One observes interstitial spaces by walking in the city, through the eye and other sense perceptions; 2) Spatial form: interstitial spaces might be spatially well-defined, for example Paley Park in New York used to be a vacant plot with a clearly defined boundary in the grid of Manhattan. In other cases, the interstitial space does not have a clear boundary, but its shape is rather dissolved and irregular. For example, a remaining, irregularly-shaped buffer zone left around a new highway cutting through the existing urban fabric; 3) Materiality: interstitial spaces are often occupied by wild plantation and wasted, derelict objects. Entering interstitial spaces or simply gazing at these spaces may therefore raise a sense of unfamiliarity and curiosity. This experience can be rarely found in other parts of the city; 4) Programme: because of programmatic emptiness, interstitial spaces are available for various types of uses and users, especially those who are not welcome in the existing open spaces. Therefore, transgressive practices often take place in interstitial spaces. The occupation of an interstitial space is also temporal and dynamic; different uses can be found at different times.

The size of interstitial spaces can vary. Interstitial spaces can be as large as abandoned industrial sites that may be hundreds of hectares, or they can be as small as a vacant plot found in a neighbourhood, of only a few square metres. To allow for an efficient discussion in this research, this study will focus on those interstitial spaces that are small and located within the city. In this way, these interstitial spaces are relevant to people's everyday life, easily accessible, and closely connected to the future of the urban environment.

As well as emphasising an understanding of interstitial spaces both in spatial and temporal dimensions, on a conceptual level, this research also explores interstitial spaces from the vantage point of the notions of terrain vague and urban interstice. The key to approaching interstitial spaces is to consider them as an interplay of space and time, as both disjoint spaces from the existing city, and as spaces of continuity and transformation. By introducing relevant notions from different urban scholars, I have noted a different dimension of indeterminacy in each discussion. In the following section, I will elaborate on the indeterminacy of leftover spaces and highlight the potential that lies in such a unique condition of an urban space.

Indeterminacy

Examining the notions in the previous section—the urban void, dead zone, space of uncertainty, and the third landscape—the confluence of those concepts denotes an indeterminacy of leftover spaces that allows the site to acquire multiple usages, programmes, and meanings. Because of this, leftover spaces can perform as counterparts to other everyday urban spaces that are confined to fixed functions and programmes, thereby nurturing alternative ways of knowing, practicing, and interacting in the existing city.

In de Sola-Morales' idea of *terrain vague*, the status of indeterminacy of these spaces is primarily because they are undefined and unregistered parts in a functioning urban system. This state of neglect further renders a vagueness in the space's appearance, confusing people and opening up the perception of the environment. In Boeri's concept of urban void, the indeterminacy is revealed particularly on the identity of the space that constantly redefines its incidental uses. In Doron's reflection of the dead zone, the indeterminacy is mainly revealed in the space's capacity to accommodate multiple social groups and their activities, especially those "marginalized communities and activities" (Doron, 2010, p. 251). Similar to Doron's discussion, in Cupers and Miessen's exploration of space of uncertainty, the indeterminacy is embodied in a freedom that accommodates individual's desired way of using the space and constructing their own identities. In Gilles Clément's proposal of the third landscape, an indeterminacy is highlighted in the ecological process, as an evolutionary process that follows nature's own logic and tempo. Luc Lévesque, in his proposal to approach terrain vague as interstices, describes the indeterminacy in both the usage and perception of the space: "an association that would be appropriate as much for the functional allocation of space and its temporal variations, as for the perception of form and the general decoding of the environment" (Lévesque, 2002, p. 24).

In line with the above notions, this research embraces these manifold dimensions of indeterminacy as the essential quality of leftover spaces. Using the word indeterminacy, the description is already in denial of any fixed definition. For this reason, I will elaborate this status of indeterminacy of leftover spaces by delineating a set of oppositions: 1) The characteristic of indeterminacy is contrary to a clear identity and typology. To fully grasp the indeterminacy of leftover spaces one needs to move beyond conventional terminology and methodology. Instead, it requires a designer to engage the site and to construct the way of knowing within its actual context; 2) From the programme perspective, the indeterminacy implies that the current site serves no fixed role or function in the operation system of existing city. Therefore, spaces of indeterminacy do not have strict boundaries or

definite subjects, nor have they any obligation to offer themselves to the productive system of the city; 3) In terms of the site's becoming, the indeterminacy allows the future of the site to evolve outside of regulated and mechanical processes. Instead, the process of indeterminacy welcomes change, diversity, and novelty. With the above characteristics of indeterminacy, leftover spaces provide counterparts to other designed and regulated urban spaces. These spaces of indeterminacy would introduce more diversity and transformative processes to the existing urban environment than spaces that are largely defined and managed by artificial intention. In the following sections, I will introduce the potential of indeterminacy from three perspectives: the space of coexistence, creative engagement, and encountering unexpectedness.

Space of Coexistence

When the leftover space is no longer concerned with any clear usage or meaning, the space can become more porous for what may take place, and therefore open to serving multiple subjects (Figure 1.4). Individual urban dwellers could now use the space for both their desired activities and to express their own persona. The inclusiveness means a melange of social groups and identities; everyone shares the freedom to occupy the space without distinguishing their culture, ethnicity, age, or gender. Karen Franck and Quentin Steven describe this quality as a looseness: "in loose spaces people encounter people like themselves and others who are extremely different, activities they may expect and ones unanticipated"(Franck & Stevens, 2007, p. 19). This condition of coexistence also applies to non-human beings: the space of indeterminacy becomes a retreat for wildlife that dwell in the city but are threatened in most urban spaces. To approach a more harmonious relationship with urban wildlife, Hinchliffe and Kearnes appeal for a decentred position of human beings: "(to address) different ways in which to present ourselves to urban wild things, which does `them' and `us' more justice" (Hinchliffe, et.al, 2005, p. 645).

The indeterminacy produces the conditions within a space that allows one individual to encounter others. In urban open spaces, strangers are both in proximity to each other while also feeling distant, and that is what makes open spaces fascinating (Franck & Stevens, 2007, p. 19). Driven by such fascination, encountering others in urban open spaces brings about opportunities for learning, and for broadening one's perspectives. Lynch and Carr state: "When others act more freely, we learn about them, and thus about ourselves. The pleasure of an urban space freely used is the spectacle of those peculiar ways" (Lynch & Carr, 1979, p. 415). Spaces of coexistence are where we start to 'see' others, not from prescribed images and categories, but in their actual form.

FIG. 1.4 Empty yard at the backside of residential buildings.
Pieces of food packages, cigarette boxes, and beer cans indicate the secret, incidental usages of the site. The courtyard does not define its users and usage, allowing different activities to take place.

Creative Engagement

The symbolic and programmatic indeterminacy allows a melange of individuals and things to co-exist, which further affords a special setting that stimulates one's creative engagement of the site. This is perhaps first because of these spaces are undesignated and unregulated, as Lévesque explains with Remy and Voye's notion of "the secondary spaces" (Lévesque, 2002, p. 28). The secondary spaces are compared to those spaces defined by social hierarchy and power. Because such spaces are free from control and order, they offer "a possibility to do and to be other things and multiple things" (Lévesque, 2002, p. 28). Similarly, Frederic Jameson defends these spaces as enclaves for social transformation—"the concrete existence of radically different spaces"—and as laboratories that open the possibilities for the development of "counter-hegemonic values" (Lévesque, 2002, p. 28). The symbolic and programmatic indeterminacy of leftover spaces invokes people's imagination and creative practices, making these spaces through a process of becoming.

Not only are they released from functional control and regulation, but the indeterminacy of leftover spaces also means that these spaces are devoid of rationality and logic. This condition calls forth a feeling of the bizarre and unfamiliar, which further stimulates visitors' fantasy, creativity, and imagination. Guy Königstein argues that these spaces present people with a paradox, which could be referred to as an oxymoron in the literary sense, for example "False Truth, Dark Light, Noisy Silence" (2014, p. 165). Königstein describes: "the missing logic within these pairs of words seems to challenge the minds of readers and to stimulate their imagination and fantasy" (2014, p. 165). Here, the existing definition of words, although contradictory and illogical when used together, stimulate people's unconscious experience to conclude a meaning for the combination. Similarly, Franck and Steven highlight that disarray and deterioration in a public space have benefits; faced with an ambiguous setting, one is able to detach from the normative way of interacting with the environment. Being unbound from a predefined way of knowing makes possible the creative engagement with space and with things. Being released from power and from a predefined way of knowing, the space of indeterminacy opens up people's perception and experiences, involving the body as an active agency that responds to specific situations (Figure 1.5).

FIG. 1.5 Creative engagement of terrain vague
The "Nightfall Creation" [Création Tombées de la Nuit] from studio l'Atelier des Possibles, employing artistic performance and bodily engagement to explore a piece of terrain vague at Saint Jacques. Copyright by R. Kosellek & S. Ricard

Changes Over Time

The creative engagement of multiple human and non-human agencies results in a complexity that allows the process to evolve as it goes along. These changes, produced in the indeterminacy of leftover spaces, could be recognised as having a novelty. The concept of novelty is embraced by Raxworthy as an "emergent newness," the kind of changes that "transform things completely" throughout the passage of time (Raxworthy, 2013, p. 31). This novelty, as Raxworthy argues, is essentially missing in mechanical and programmed processes. Such processes tend to engage with the reality of the site condition merely in order to be efficient and, resultingly, provide few opportunities for interactions between the multiple individual elements that contribute to the complexity and emergent newness (Figure 1.6).

The capacity to change over time is afforded by the heterogeneous occupations of the space and its condition to call forth creative engagement, according to Whitehead: "change over time requires a subject or a mind to appreciate it and so assures a participant synchronous with its passing" (Raxworthy, 2013, p. 33).[5] Louis Le Roy emphasises a creative role for human beings in nature's evolution process. By quoting Henri Bergson's theory of change of duration, Le Roy asserts: "Change and the continuous process of the creation and recreation of space are an inherent part of a conscious and active existence. If man's creative potential is ignored, if he is viewed as a passive part of a mechanized system, life becomes impossible" (Boukema et al., 2002, p. 21). The indeterminacy of leftover spaces is embodied in multiple dimensions, including the spatial and physical aspects, as well as the occupation, practices, and processes of the space. The space of indeterminacy provides valuable spatial manifestations that challenge the practice of architecture, which unavoidably projects a static configuration on the site and regulates the site's future transformation.

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[5]   Raxworthy quote from Alfred North Whitehead, see Whitehead, A. N., Griffin, D. R., & Sherburne, D. W. (1978). *Process and reality: An essay in cosmology.* New York: Free Press.

FIG. 1.6 A leftover space changes by seasons, Jaarweg, Delft.
Although being un-designed, the spontaneous play of neighbourhood children and the natural succession of wild grass deliver the site different profiles during the year.

When Design Meets Interstices

The indeterminacy of leftover spaces raises a question for urban designers, architects, and landscape architects: should we carry out design interventions in these spaces that hold potential for different, not-yet-defined, practices and processes? And if the answer is yes, how could design capture the qualities of the interstitial condition? Some scholars argue for preserving certain leftover spaces as valuable open spaces within the urban field. For example, in Jennifer Foster's study of abandoned circular train line Petite Ceinture in Paris, the site is valued as an ecological reservoir for a great number of species of wildlife (Foster, 2014). Reviewing this, Foster asserts to protect the existing nature succession of the site and to limit human interventions: "it does call for an enhanced and more nuanced understanding of vacancy, one that appreciates and permits the key attributes of terrain vague as legitimate and critical features of sustainable cities" (2014, p. 131).

Nevertheless, there have been design interventions that establish the leftover space as an urban component that holds significant value for its surrounding environment, nurturing creativity, spontaneity, and resilience. In the following paragraphs I will review two design practices that use the condition of interstice as the laboratory for new design practices. The discussion will let us inspect the potential of design.

The Constellation of 734 Playgrounds

An early example is the design of playgrounds in Amsterdam by Dutch architect Aldo Van Eyck. In the years following World War II, from 1947 to 1978, Aldo Van Eyck developed hundreds of playgrounds in the vacant sites of the city. In response to the plentiful vacant land arising from the trauma of the war, Van Eyck conceived an idea to transform them into places for children and for play. In this way, the creative activities would refill the negative void and, as these voids constitute the in-between, they would bring new connections within the surrounding neighbourhood, delivering greater possibility for dialogue, meeting, and exchange (Withagen & Caljouw, 2017, p. 1130). At the beginning, Van Eyck designed the playgrounds on his own, amounting to about one hundred in total. Later, due to the increased demands for new playgrounds, Van Eyck developed a set of design apparatus so that other people could construct new playgrounds with the same idea. Van Eyck's play equipment is intentionally designed as minimal and modularised, which allows it to be easily put into use in new playgrounds or adjusted individually (Figure 1.7).

FIG. 1.7 Playground of Van Eyck at Dijkstraat, Amsterdam
The previous neglected slot in the after-war city Amsterdam was brought back to urban life by introducing the activity of play.
Copyright by Stadsarchief Amsterdam.

Van Eyck's design proposal indeed responds to the interstitial condition of leftover spaces. The design transforms unattended voids in the post-war city into places for play, regaining for these spaces a social attention. The new places of playgrounds established connections in the city that had not previously been imagined, just as a starry sky described by Van Eyck offers approximate open spaces in people's everyday life for a variety of social interactions. However, in Van Eyck's design approach, the new programme—that of the playground—is projected in too definite a way: all void spaces would be considered only for playground and people would hardly use the space for other purposes, for instance as vegetable gardens or communal space. The indeterminacy is almost untraceable in the newly-made playground.

The Surge of Temporary Use

A recent turn in the discourse of urbanism practice gives emphasis to the small-scale, neighbourhood vacant site. The design concept is to open the design process to involve the knowledge, desire, and practices of local citizens that develops the project as co-working. Diverse catalytic design approaches have exhibited their merits that encourage or facilitate various form of temporary use of leftover spaces (Figure 1.8).

FIG. 1.8 The urban agricultural garden at Agniesebuurt, Rotterdam
Small empty spaces inside the city tend to attract local citizens occupying the site as urban agricultural garden. The space is often arranged in a functional and practical manner, filled with piecemealed agricultural elements.

One example is the research and practice of Urban Catalyst in Berlin, directed by Philipp Oswalt and Klaus Overmeyer. Oswalt and Overmeyer regard the informal, temporary use of public spaces as a response to the flexible and dynamic social culture of the modern city: "what had been life-long employment was replaced by a flexible, dynamic, and often precarious working world" (Oswalt, Overmeyer & Misselwitz, 2013, p. 9). Through surrendering the authority of designer, the temporary urbanism explores locally-based social practices as a response to the heterogeneous modern society.

To incorporate or facilitate temporary use, Urban Catalyst proposes the concept of "enabling" that recognises the designer not as a "decider" but rather an enabler who brings the various actors together. Speaking about the site design, Urban Catalyst considers that the programme deserves more concern from the designer, rather than the classical design for which form and composition are more vital: "For rather than the question of built form, the dominating issue is that of the programme" (2013, p. 217).

There are valuable aspects to learn from Urban Catalyst's proposal, especially their emphasis on actors, and networks as the basis to develop the design project as a process. For instance, it proposes that the design objectives be kept vague at the initial stage and allow the practice of actual users shape the objective: "to bring about a gradually increasing concentration of activities, programs and networks, which little by little begin to express themselves in constructional term as well" (2013, p. 218). It also reminds the designer to release his role as overall definer, but instead make possible the conversation among multiple actors; the city municipality, the private landowners, and cultural institutions can collectively have positive impacts on the design. Design in this sense is not limited to one site but promotes cooperation between different social actors.

Nevertheless, apart from the dynamic scene of leftover spaces that are developed for temporary use, often we can find those spaces present a collage of programmes suggested by different social groups and with pieces of objects created or brought by the users. The spatial configuration of these temporary public spaces holds few qualities of spatial order and integrity, due to the fact that the design principle that subordinates the formal and compositional design, which ultimately undermines the user's perception of the place. Empowering the users would be an effective tool to open up the site to being more inclusive and dynamic but subordinating the formal and compositional aspects of design will frustrate people's engagement in the long run.

Another substantial problem in the case of Urban Catalyst is that the design might be inclusive only for a specific group of people, depending on who the relevant social actors identified in the early stage of the design are. Comparing temporary public projects with common urban open spaces such as parks, the common open spaces accommodate more diverse public uses, while the temporary use sites commonly express certain ownership. This ownership is signalled by domestic objects and occasional gated entrances, which may confuse the outside visitors by not making clear their eligibility to use the space. From this perspective, the temporary public projects do not fully address the potential in the indeterminacy of leftover spaces.

The above design practices explore the unique qualities of leftover spaces, while simultaneously running the risk of erasing the potentially open way of engaging with the site by different human and non-humans. The discussion points out the paradox of design that was introduced in the beginning of the thesis. In the following section of the thesis, the focus of discussion is to disclose this paradox: what are the possible alternative ways that would allow the design to engage with the changes in the unforeseen future without losing its capacity to define the spatial-physical composition of the site?

The Paradox of Design

Design as Frame

Reviewing the design cases from Van Eyck and Urban Catalyst highlights an interesting issue: in these cases, the design intended to engage with the interstitial conditions of leftover spaces, while the result of design transformation meant that the site was no longer inclusive for a variety of social uses, ecological processes, and layered meanings of the place. Through introducing a new set of definition to the site, the design facilitates the site to develop towards certain desired outcomes but simultaneously limits unforeseen changes in the future. From this perspective, the design of leftover spaces presents a **paradox**, between the practice of design that projects a set of definition to the spatial configuration, programme, role, and meaning of the site, and the indeterminacy of leftover spaces that would allow the site to accommodate multitude use, activities, and contingent events along its transformation.

Such paradox of design has been elaborated by landscape architect Julian Raxworthy, in his thesis *Novelty in the Entropic Landscape: Landscape Architecture, Gardening and Change* that investigates how design practice (of landscape architecture) could bring to the designed landscape a quality of novelty in the process of the design implementation (Raxworthy, 2013). In the Oxford Dictionary, design as a verb is defined as an action that "decide[s] upon the look and functioning of (a building, garment, or other object), by making a detailed drawing of it." Along with the affiliated meaning: "do or plan (something) with a specific purpose in mind" (Merriam-Webster, n.d.). More from the perspective of process, Raxworthy argues that the design process is "a form-making process inherently tied to a prediction of an end" (2013, p. 189). Namely, the design transformation is a purposeful process, inevitably projecting a frame to a further process by driving the process towards a certain desired outcome.

In order to allow for novelty in the process of implementing the design, Raxworthy proposes the design principles of tendency and feedback, as in his own words: "combines the use of 'tendencies' in the design stage with an 'ongoing feedback' relationship with the developing landscape" (2013, p. 189). To provide a brief idea on the two design strategies, the **tendency** describes a design mindset that considers that the design heads in a particular direction without being completely sure of the results. It intentionally acknowledges that other changes may alter the process and lead to a different becoming of the site: "The end is in sight but not clearly focused" (2013, p. 189). While tendency is the foundation that prepares

the design process to welcome changes, it still needs **feedback** to guarantee such openness. According to Raxworthy, "feedback is a continuing, real-time involvement in a process" (2013, p. 191). where the output of a period of process is examined and used as further input to adjust the process. Design with feedback refers to the work of a gardener, who examines the changes in everyday discourse and comes up with new tactics that embrace these changes as meaningful components of the garden. The strategy of feedback lets the tendency proposed in the initial stage be constantly revised in the real-life process.[6]

The design strategies of tendency and feedback feed our discussion of the design paradox in the context of leftover spaces. If the designer adopts the design intervention as an initiation of the site transformation—a basis and foundation where multiple processes can be developed—then it is possible to design leftover spaces without depriving the indeterminacy of these spaces.

However, the discussion of tendency and feedback does not provide enough insight or knowledge on the **spatial-physical composition** of the site. This gap is embodied in the Urban Catalyst case studies; the design sets an initial foundation for social appropriation, but often the spatial composition of the design is merely a collage of different amenities or is arranged by functional concern. The designed form is important not only for ensuring the functional requirements, but also matters for people's experience and engagement of the site. Elizabeth Meyer emphasises that the design could make the landscape "tangible and palpable" and calls forth "an experience that aesthetically engaged humans with their environment" (Meyer, 2000, p.192). Christopher Alexander says that the designed form would expose the issue / potential of the site: "if he is a good designer the form he invents will penetrate the problem so deeply that it not only solves it but illuminates it" (1964, p. 90) and through making the environment tangible, it allows a continuity in the future: "the environment must be organized so that its own regeneration and reconstruction does not constantly disrupt its performance". (1964, p. 3)

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6   The concept of feedback is also addressed in RSVP cycle created by Lawrence Halprin. The essential element in RSVP circle is the 'score' (the S in RSVP). As Halprin explains, the score is the symbolisation of the process. By discussing the loop between resource, score, valuation, and performance, it is possible to evaluate the capacity for change in a process. The feedback factor is essential to connect score with performance and generate the creative process: "Scoring has to allow for feedback, for analysis before, during and after a score is created in order for the score to develop and allow for change." See Halprin, L. (1970). *The RSVP cycles: creative processes in the human environment*. George Braziller.

If we consider that the Urban Catalyst way of subordinating the formal and compositional aspects of the design may be problematic, then what might be possible ways to deliver a designed site composition when dealing with leftover spaces? How could the designed form not redefine a leftover space into new fixation but retain the site's indeterminacy and even open-up the site's becoming to accommodate more dynamism, diversity, and complexity?

While the above discussions demonstrate the paradox of design on a theoretical level, it is also important to see how design is manifested in real life responses to such a paradox. Design with process, open-endedness, and intimacy are not newly emerged topics; post-modern architecture practices already provide diverse examples of how to welcome indeterminacy in architectonic composition.

Dialogues With the Design Paradox

In this section, I will present design projects that try to achieve an indeterminacy in architectonic composition. To formulate the discussion, I summarise these design projects into two categories: design composition instigating changes and design composition participating in changes.

The category of design instigating change consists of examples from post-modern architecture experiments, which apply the concept of "layering" to release multiple possibilities in their composition. The following examples are collected from Bernard Tschumi, Rem Koolhaas, Peter Eisenman, and Daniel Libeskind.

Both in Bernard Tschumi and Rem Koolhaas's designs, experiments in indeterminacy are shown in the well-known design competition of Parc de La Villette in Paris. The project's site is located at the north-eastern edge of the city of Paris and was previously used as a slaughterhouse. After being abandoned for eight years, in 1982 the municipality decided to regenerate the site as a public park. Both architects Bernard Tschumi and Rem Koolhaas participated in the competition for proposals for the new park and experimented with the design idea of programmatic indeterminacy.

Koolhaas's design proposal is marked by the concept of "combining programmatic instability with architectural specificity" (Koolhaas, et al., 1998). The park would be developed in five layers, from the foundation to the superimposed elements, as follows: 1) organising the major programmatic elements in horizontal bands across the site; 2) placing kiosks, playgrounds, barbeque pits, and other facilities mathematically on grid points; 3) adding a round forest as an architectural

element; 4) providing connections between the points; and lastly, 5) introducing superimpositions (Figure 1.9). From Koolhaas's design, we find that the design of programmatic indeterminacy is mainly achieved by, first, the proximity of strips, which allow adjacent programmes to interact, influence each other, and create instability. Secondly, by mathematically spreading point elements, which are facilities that support programme, it aims to further destabilise the existing arranged activities in the park (Koolhaas, et al., 1998).

Initial hypothesis (scale: 1/20,000)   *The strips*   *Point grids, or confetti*   *Access and circulation*   *The final layer*
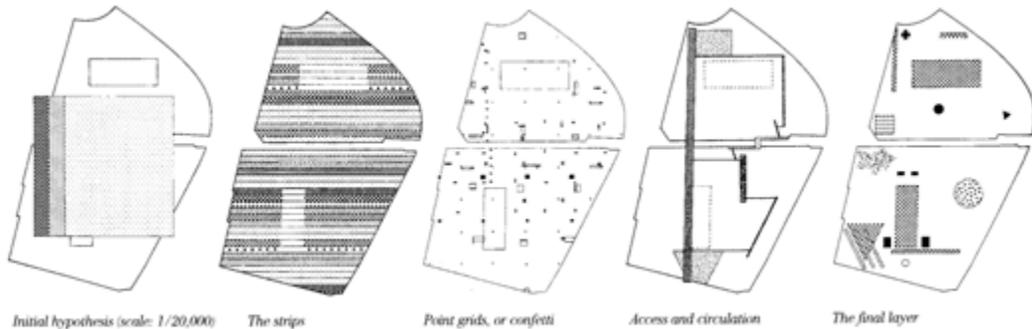
FIG. 1.9 OMA's design diagram of Parc de La Villette
Through superimposing the strips, grids, connections and figure elements, the design intends to generate indeterminacy through an architectonic approach. Copyright by OMA.

Another interesting design project by Koolhaas is the proposal for the suburban development of Ville Nouvelle at Melun-Senart, where the design deliberately creates the 'void' of indeterminacy in its composition. The suburban development of Ville Nouvelle is thirty kilometres from Paris. Appreciating the beauty of the rural landscape, OMA planned a system of linear void spaces, referred to as bands, away from future architectural 'contamination' (Figure 1.10). The void bands comprised one running parallel to the highway, one along the TGV line, one for the major programmatic requirement of the region, and one that defined the campus site of a new university. These empty bands set limitations on future aggressive projects in the landscape, keeping Melun-Senart as formless, and retaining its existing rural character. Here, indeterminacy is invited by intentionally demarcating spaces without architecture.

FIG. 1.10 Conceptual scheme of bands in Ville Nouvelle.
Responding to existing landscape conditions, the undeveloped spaces were preserved, as interconnected bands, providing spaces for un-planned and undesigned events to guide future urban development. Copyright by OMA.

Bernard Tschumi's proposal for Parc de La Villette, similar to Koolhaas's, also attempts to generate an indeterminacy in the design's spatial composition. Tschumi's design is composed of three layers – points, lines, and surfaces – that lie on top of each other. The points layer consists of 36 points of follies, the lines are designed into paths that introduce movement and encounters, and the surface is characterised by large open spaces that offer the capacity for the gathering of crowds and allow different activities to take place (Figure 1.11). Compared to Koolhaas's scheme, in which the programme is primarily defined and later unsettled by architectural elements, the programme in Tschumi's proposal was less defined; it does not define the activities to be hosted in the composition, but rather incubates the conditions to allow many possible activities to take place. Furthermore, these incidental activities will shape the future of the park (Damiani, 2003).

In Tschumi's and Koolhaas's designs, we find that the focus is to stimulate a variety of unforeseen activities. The interplay of diverse activities and architectonic form would bring to the site more dynamism and indeterminacy. Examples from Peter Eisenman and Daniel Libeskind show a different interest: their attempt was to instigate ambiguities in people's interpretation of the space, to blur the meaning of architecture.

An example of Peter Eisenman's work is the housing project at Checkpoint Charlie, where the architect uses a layering technique to create this "blurring". In the design, the layers were extracted from two previous urban grids: eighteenth-century and twentieth-century urban grids, which were overlaid onto the current urban fabric. Furthermore, these superimposed layers were transformed into a tangible spatial form, becoming corridors, hallways, or galleries. In this way, the architect expressed an idea to excavate subordinate narratives that may be hidden in a city's dominant history and to "describe the peculiarity of the site by making recognizable any specific traces of the past" (Corboz, 2014) (Figure 1.12).
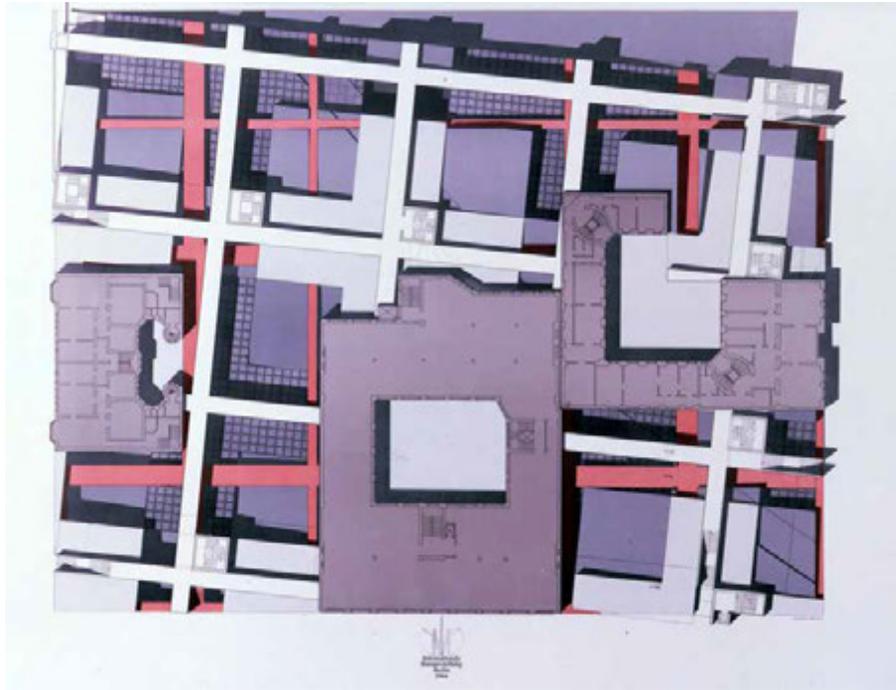
FIG. 1.12 Plan for Checkpoint Charlie, Berlin (1980)
The historical patterns of the site were brought back as a compositional layer of the housing project. The design intends to recall the narratives of the place and creating a blurring effect to the meaning of the new urban development. Copyright 2013 by I. Ansari.

Located in the Kreuzberg area of Berlin, less than a kilometre away from Checkpoint Charlie, is the Jewish Museum designed by Libeskind. The site is an irregular space that lies between the formal Berlin museum of 1735, the modern museum complex development of 1978, and an area that was left vacant after the war. In Libeskind's design, two lines organise the architectural space and represent the fractural history of Jewish people: one is tortuous and continuous, while the other is straight and fragmented. These two lines are intertwined with each other and create in-between spaces. In addition, a void space is placed at the centre of the straight line. The encompassing emptiness triggers an experience that symbolises the traumatic Holocaust (Libeskind, 2001) (Figure 1.13). Through making ambiguous spaces within the architecture, the design allows for an intensity in the experience of the space and engages bodily perception to tell the story of this piece of Jewish history.
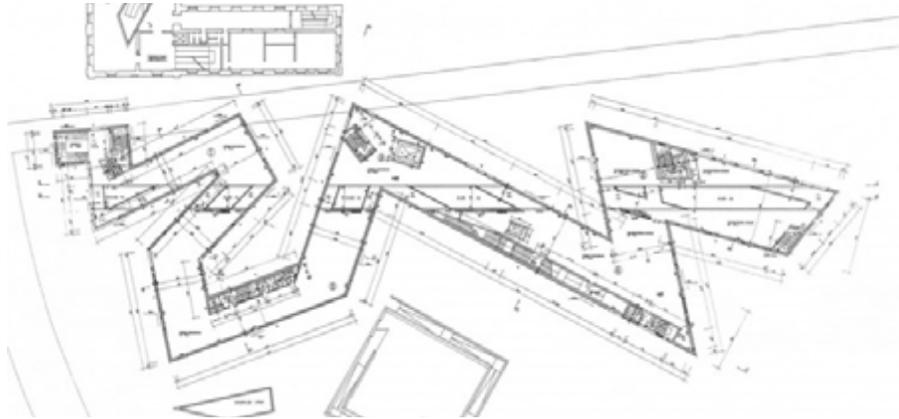
FIG. 1.13 The plan of Jewish Museum, Berlin (1999)
Through the intersecting two lineal architecture components, a series of ambiguous spaces were created, intensifying people's experience of the narrative of the site. Copyright by Studio Libeskind.

The design composition described above introduces an indeterminacy in either the use, or the interpretation, of the architectural space. Nevertheless, the architectural approach of these projects gives much weight to instigating particular changes but loses focus on how these changes may contribute the overall becoming of the architecture. Examining these architectural projects in relation to the strategies of tendency and feedback, we find that these design projects apply only the strategy of tendency, and do not conceive the necessary strategies for the site to adapt to feedback in the process after design implementation.

The feedback strategy is played out in the second aspect of our discussion: design composition participating in changes. Here, the designer continues to participate in the process after the design has been implemented and constantly works with the layout of the site as it goes through ongoing changes.

The first example in this category is French garden designer Gilles Clément. Clément prioritises the role of gardener in his design practices, advocating that the design should derive from the site's existing conditions and restrain the amount of interference it introduces—"to do as much as possible with and as little as possible against" (Clément, n.d. a). Clément conceives the *Le Jardin en Mouvement* [Garden in Motion] as a design-based response, exploring how design can insert itself "in the midst of this (nature's) powerful flow" (Clément, n.d. a), to observe, guide, and enrich natural processes. A well-known example of the Garden in Motion is *Le Jardin en Mouvement* [the Garden of Movement] in Parc André Citroën, Paris. In this garden, Clément depicts his intervention as a constant dialogue with the site, caring

for whatever emerges over the course of transformation. "Flowers which germinate on a path force the gardener to decide between maintaining the flowers or the path. The Garden in Motion recommends maintaining those species that is decided by where they wish to grow…" (Clément, n.d. a) (Figure 1.14). In this garden, the role of the designer is as an observer: the intervention is not taken for granted but requires a judgement based on fully acknowledging the existing conditions of the site.

FIG. 1.14 Park's gardener moving the grass in the first spring of the Garden in Motion, Parc André Citroën
The maintenance of the garden is not fully decided by the designer. The nature's process and the growing condition of the garden are deciding factors of the maintenance. Copyright by G. Clément.

The second example comes from the artist Louis Le Roy, who calls himself an "ecotect" and uses his own practices to explore the role of human engagement with nature flux. The best-known project of Le Roy is *Ecokathedraal* [Eco-Cathedral] in Mildam, the Netherlands, where Le Roy gradually piled abandoned bricks into towers ranging in height from three to ten metres. The construction of the towers integrates special techniques that create conditions for diverse microclimate and habitat patterns, effectively facilitating the growth of spontaneous vegetation on site. In return, the growth of vegetation defines the subsequent construction of the site, becoming a deciding factor in the dismantling or reshaping of the original tower. For example, because the vegetation growth also influenced the entrance route

for the truck that brought the raw material—the abandoned bricks—to the site, it thus influences the location of the new towers (Figure 1.15). Le Roy follows the concept of the complex dynamic system proposed by Belgian chemist Ilya Prigogine. According to Prigogine, the dynamic can only be achieved by the complex system that introduces growth effected by the disruptions and uncertainties throughout the process: "between moments of relative organization and regularity and intervals of chaos and irregularity" (Vollaard, 2002). In Le Roy's concept, mankind's creative capacity is a valuable ingredient that contributes to the complexity of natural world: "If man's creative potential is ignored, if he is viewed as a passive part of a mechanized system, life becomes impossible" (Vollaard, 2002). For this reason, the individual needs to dedicate his creative forces to help the growth of nature and this creative engagement must last long enough for its effects to manifest. Le Roy argues for a new form of design that immerses itself in time, from which the form is made as a condition, like the towers of the Eco-Cathedral; this form of design encourages people to interact with the resultant changes happening afterwards, to invite more dynamic processes to the site.

FIG. 1.15 Louis le Roy at Eco-cathedral [Ecokathedraal] at Mildam
Unused bricks were stacked into towers that diversify the natural condition of the site. Le Roy work with the site day by day, over years his practice has brought a highly complex structure infused with rich nature and culture meanings. Copyright by P. Wouda.

Both Clément and Le Roy explore design as an activity in which the design composition is created at the beginning of the process and constantly reenvisaged as it progresses. Their practices demonstrate how the strategies of tendency and feedback can be engaged by the designer. Their work indicates the potential of landscape architecture to offer valuable discussions in the design paradox of leftover spaces.

1.2.5 The Approach of Landscape Architecture

Further insights towards the paradox of design can be gained from the approach of landscape architecture; Landscape architecture is a multi-disciplinary and broad field, but to allow for an efficient discussion in this research, this study will focus on the definition of landscape architecture that takes the reading and writing of sites

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as the basis, and in which landscape architecture is a design practice that derives from understanding the existing qualities of the site and engages with the site's ongoing transformation. Landscape architectonic design can potentially engage leftover spaces in an open-ended manner, inviting multiple agents and agencies to shape the future trajectory of the site. Here, I would like to highlight two components in the practice of landscape architecture that potentially play a role in this open-endedness: reading site specific conditions and exposing the specific place through architectonic design.

Landscape architecture works with process by including factors of both human practices and natural, ecological processes. The working content, therefore, is a dialogue with a complex system and requires landscape architects to embed their design within a set of relationships while keeping an open-endedness. As Lisa Diedrich explains: "In landscape architecture, natural spatial conditions and nature processes are considered on an equal footing with man-made elements and human practices. This mindset relies on the assumption that things do not exist in isolation from one another, but are moving parts in a complex network of simultaneous, multidirectional exchanges" (2013, pp. 29-30). Working with natural material, it takes time for a landscape composition to develop and reach its mature form. At the same time, a landscape designer can never fully control the results of his intervention; the site is always subject to changing climate, day and night, and various visitors. The contextual and relational working approach allows the landscape design to retain continuity throughout the site's transformation, by embedding the design within the interactions of different factors that define the site's past as well as its future.

In terms of spatial-formal intervention, the landscape architectonic design manifests the specific places of each geographical location. The spatial-formal composition in a designed landscape is derived from the site characteristics that relate to each unique geographical location. The design composition is embedded in the natural, cultural, and urban landscape instead of being invented. In landscape architect Saskia de Wit's study of how the design of the enclosed garden speaks of specific places in the placeless metropolitan landscape, three landscape architectonic design strategies are introduced to give expression to existing landscape qualities: magnifying, enclosing, and centring (de Wit, 2013, pp. 18-19). First, the specific landscape qualities are selected and highlighted through magnifying and these qualities are further separated by providing an enclosure, as the fundamental spatial definition of the place. In the end, the space is arranged by providing a centre, bringing focus and an awareness of specific place (Figure 1.16). Reviewing the architectonic design instruments introduced by de Wit, the spatial-formal design of landscape

architecture expresses the context, characteristics, and narratives of each specific place, gaining an attachment to the site and inviting creative practices.

FIG. 1.16 The Reflection Garden at Bloedel Reserve
With layers of enclosure and through highlighting a centre for the place, the landscape characters are magnified, and the specific place is represented by the architectonic design. Copyright by J. Mabel.

Leftover spaces can be explored and transformed in an open-ended manner with landscape architectural design approaches. The result of the design transformation is not simply defined by external goals and functions, but it is shaped by acknowledging what is already there. Essential to the design of landscape architecture is the reading of the site-specific conditions and the interpretation of what qualities the designer should engage. Therefore, derived from the position of landscape architecture, in this research I developed four reading lenses—the morphological lens, social lens, ecological lens, and material lens—to offer an initial framework that allows designers to develop an understanding of the potential qualities of leftover spaces. These lenses will further serve as the analytical structure for three case studies for an examination into how the design responds to the potential qualities of the leftover space and how these qualities are transformed in the period following the implementation of the design. The detailed description of methodological development will be presented in *1.4 Research Methodology*.

1.3 Research Questions and Outline

1.3.1 Research Question:

In the previous sections I have introduced the paradox of design in the context of leftover spaces, and the potential of landscape architectural design concepts to engage with such paradox. The question remains here is how spatial-physical design intervention can be conducted, to offer a defined, meaningful place while still opening to diverse changes. Driven by this question, this research aims to explore the design approaches of leftover spaces from a landscape architecture perspective, asking the question: "How can design make use of the paradox between the definition projected by the design and the indeterminacy of leftover spaces, to manifest qualities of leftover spaces while retaining an open-endedness?"

The main research question is addressed by means of the following sub-questions:

1 **What are the qualities of leftover spaces?**

The qualities of the leftover space are the prerequisite for subsequent design. Therefore, the research begins with a literature review, searching for the main qualities that have been attributed to leftover spaces. The review serves as a stepping-stone towards specific understandings in the cases of different leftover spaces.

2 **What is the methodology to explore possible design approaches for leftover spaces?**

Since it is difficult to find relevant studies that investigate open-ended design approaches of leftover spaces, especially from the perspective of landscape architecture, the second step of the research is to construct a research methodology. The methodology provides a framework and general guidelines for conducting the research and takes an inductive approach to respond to the explorative character of this research.

3 **What are different modes of design transformation of leftover spaces? Which are potential cases to be studied?**

To ask this question is to have an overview of different transformations of leftover spaces – the designed and non-designed ones. The overview and discussion of different transformations provide a reference to select the most relevant cases for detailed study.

4 **What is the effect and value of design transformation?**

Through detailed analysis of the cases selected in the question (3), this question further asks how design can address and activate the qualities of the cases being studied. Compared to non-designed transformation, what is the added value of each of the design approaches?

5 **What are design approaches of landscape architecture from which we can learn?**

This question, based on answering previous questions, looks for the design approaches and role of landscape architecture that could be learned. In particular, it asks how specific characteristics of a leftover space can be identified and brought to the foreground. How can they contribute to specificity, orientation, identity, and spatial definition? How do these qualities relate to the temporal dimension of the transformation process, to interact with or be redefined by the appropriation of unforeseen social and ecological agencies?

In order to achieve relevant insights, the case studies need to be comparable, which is hard considering the variable characters of interstitial spaces. Therefore, the research needs to narrow down, and use the study of a small selection to inform the whole. To initiate the research, I will focus on small-scale leftover spaces within the city as the starting point. Framing the research subject in this way brings the following benefits: 1) These spaces are close to the citizen's daily life and have more opportunities to be appropriated and, in turn, the design of these spaces carries more significance for urban life and urban environment; 2) As a starting point to investigate leftover spaces, the small-scale cases have fewer 'variables', therefore different cases are more easily comparable with each other; 3) The control of the scale brings focus to the spatial characteristics of the site, making it possible to explicitly examine how the design composition responds to the existing spatial-physical conditions of the site.

1.3.2   Research Outline

The thesis consists of 7 chapters. **Chapter 2 Reading Interstices** provides a literature review on the latent qualities of leftover spaces that complement the overall urban

environment, answering the **sub-question (1)**. Reviewing existing literature lets me summarise the four theoretical lenses to reveal the qualities of leftover spaces. The four lenses are: the morphological lens that explores the character of leftover spaces in terms of spatial form and urban morphology; the social lens that presents various social appropriations in leftover spaces; the ecological lens that highlights spontaneous nature processes taking place in leftover spaces; and material lens that foregrounds the material character of the space and the bodily experience that arises from such material setting. These four lenses are later used as a methodological framework to review the design of leftover spaces, feeding into **sub-question (2)**. **Chapter 3 Transforming Interstices** presents eight cases of leftover spaces that display different modes of transformation. A matrix will be formulated, annotating each case, from which the three seminal cases will be selected for detailed analysis. This chapter, together with chapters 4, 5, and 6 will answer the sub-questions (3) and (4). **Chapter 4 Pavilion Valby Smedestræde 2**, **Chapter 5 Jardins du Tiers-Paysage**, and **Chapter 6 Dalston Curve Garden** present the analysis of each case. The analysis of the design approaches and effects in these three cases prepares for the discussion that answers sub-question 5. **Chapter 7 Design Approaches for Urban Interstices** answers the sub-question (5) by discussing the design approaches that are based on the experiences and insights gained from the three seminal case studies. Further, the discussion reflects upon the mythological application and the theoretical and social relevance of this research and highlights a set of substantial notions of landscape architecture for open-ended design of leftover spaces, as well as general urban open spaces.

1.4 Research Methodology

In this section, the steps taken to answer the research question: "How can design make use of the paradox between the definition projected by the design and the indeterminacy of leftover spaces" will be explained. In general, the methodology consists of four steps that guide the development of the research project. The first steps are briefly described as follows and are illustrated in the methodology diagram: 1) the theoretical framework and research strategy; 2) collecting cases of leftover spaces' transformation and selecting seminal cases; 3) detailed analysis of three seminal cases; 4) cross-case discussion and conclusion (Figure 1.17).
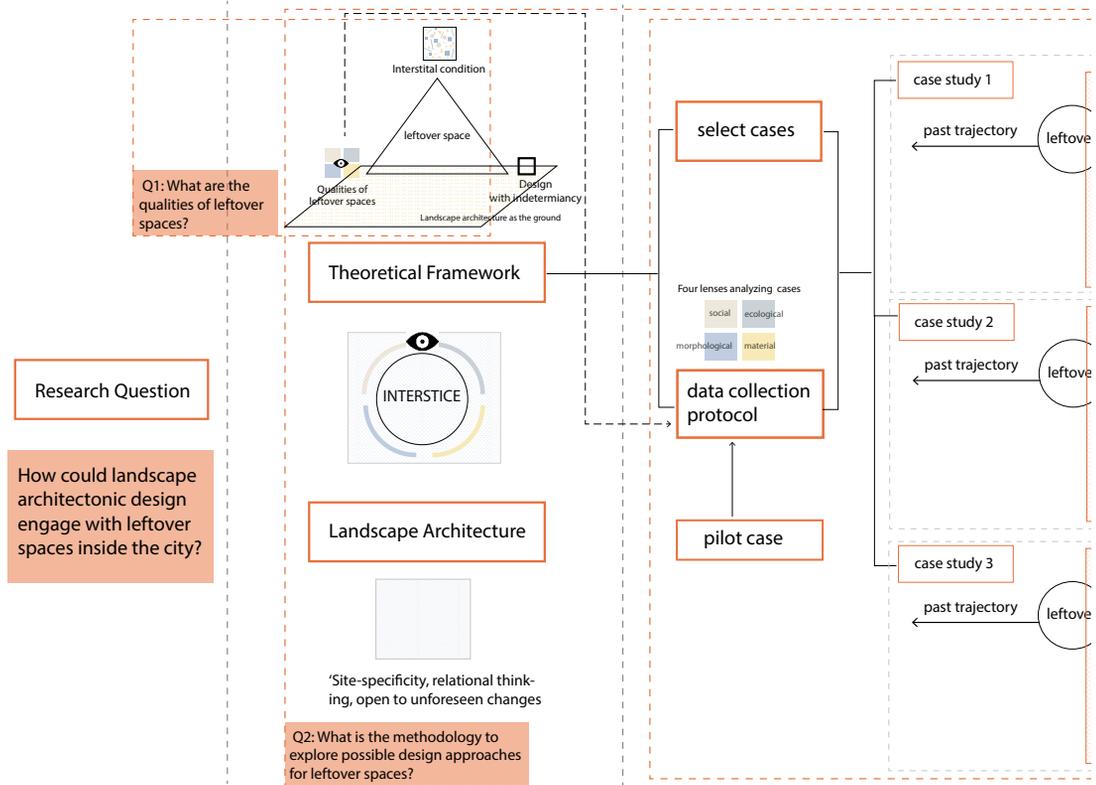
FIG. 1.17 Methodology diagram

Q3: How have the leftover spaces been appropriated, transformed and turned into use for urban communities?

design

transformation   present   future tendency

qualities of being leftover   qualities affected by design transformation

design

transformation   present   future tendency

qualities of being leftover   qualities affected by design transformation

design

transformation   present   future tendency

qualities of being leftover   qualities affected by design transformation

Case1 report: drawing & text

Case2 report: drawing & text

Case3 report: drawing & text

Cross-case discussions

Conclusion & Reflection

Q4: What is the effect and value of design transformation

How design responds to the qualities of leftover spaces?
How is a leftover space perceived differently before and after design transformation?
How the transformation afterwards relating to the spatial configuration of the design?

Q5: What are design appraoches of landscape architecture that we could learn from?

How can landscape qualities be identified and brought to the foreground?
How can they contribute to specificity, orientation, identity and spatial definition?
How do these qualities relate to temporal indeterminacy of the space?

Grounding the Research

Two theoretical discussions provide a foundation for this research. The first part is the working approaches of landscape architecture. As explained in the introductory chapter, landscape architecture develops the design from site's existing characteristics. The design intervention responds to the qualities of the site in a nuanced, dialectical manner. Therefore, an inquiry into designing leftover spaces begins with recognising the qualities of leftover spaces.

This emphasis on the site further allowed me to choose to work with the case study as a research strategy. According to Robert Yin, in *Case Study Research: Design and Methods*: "a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (2014, p. 53). Practically, Elizabeth Meyer puts forward that case study is the only way to do landscape research: "Theoretical work should be contingent, particular, and situated... Landscape theory must rely on the specific, not the general [and should be] based on observation, on what is known through experience, on the immediate and the sensory – what is known by all the senses, not only the eye" (2002, pp. 167-168). The use of a case study strategy allows me to fully investigate the existing site, in terms of both its context and the situations that occur in eal-life processes.

The second part—the theoretical framework—comprises discussions on the concept of urban interstice, the qualities of leftover spaces, and design concepts to engage with indeterminacy. Robert Yin highlights the role of theory in case study research, both on defining "the appropriate research design" and "data to be collected" (2014, p. 149).

The way in which each of the theoretical discussions listed above guide the research process is explained as follows:

1. **The concept of interstice.** The theoretical discussion foregrounds the essential argument of this research: to regard leftover spaces as the urban interstices. These discussions allow the research to look for what are the unique potentials that lie in leftover spaces, which complement the everyday urban environment.

2. **The qualities of leftover spaces.** Reading through the scholarly review on the potential of leftover spaces, I propose four lenses on morphological, social, ecological, and material aspects to understand the qualities of leftover spaces while, more importantly, to serve as the structure through which to analyse seminal cases in this research, as well as to examine the qualities of the leftover space in each case and how design has transformed these identified qualities in each lens.

3 **Design with indeterminacy.** Since indeterminacy is discussed as a defining characteristic of leftover spaces, it is valuable to examine existing design concepts that try to engage with an indeterminacy in different aspects of the design. The strategy of tendency and feedback proposed by Raxworthy brings forward the hypothesis to consider the design as a foundation that initiates the process without fully defining the outcome. However, as I have pointed out, the formal and compositional design tools in these two design strategies are still missing. Therefore, discussing design concepts clarifies the initial research problem and brings a further focus of the research to how the designed landscape, the spatial-physical composition of the design, could facilitate an open-endedness in the site's transformation.

The theoretical framework also guides the data to be collected in empirical cases; research methods are developed, as illustrated in *1.4.4 Analysing Seminal Cases*, to collect data in each lens according to the scholarly discussion that points out what the potential qualities are. From studying the cases, the results of the design transformation allow me to identify valuable design concepts and approaches. Associating with the theoretical framework, the findings from the case study can further feed back to the theoretical discussion.

1.4.2   ## Gathering the Cases of Transformation

To select seminal cases for conducting detailed study, the first step is to review different modes of transformation of leftover spaces. To this end, eight cases were compiled that range from natural, undefined transformation to fixed transformation where a clear architectonic definition is given to the site. Those eight projects are: Park Fiction, transformed from a residual waterfront space in Hamburg; ROEFTuin vegetable garden, temporarily built on an underdeveloped site in Delft; Pavilion Valby Smedestræde 2, a tiny leftover courtyard in Copenhagen transformed into temporary public space; Le Jardin du Tiers-Paysage [The Garden of the Third Landscape], established on the roof of a defunct submarine base in Saint-Nazaire; Dalston Eastern Curve Garden, a community garden developed on the abandoned land of a redundant railway track in London; the Highline Park in New York, transformed from a derelict viaduct; and Paley Park, a pocket park designed in an interstitial courtyard in New York. These cases will be introduced in Chapter 3 Transforming Interstices, where a brief overview of their transformation is delivered, and an initial speculation on the role of design. Additionally, I will present the non-designed site Logar de Aguada, a neglected linear piece land along the river Douro in Portal. The transformation of the site, almost completely governed by natural agencies, will offer a comparison to the designed case studies, thereby providing more insights on the potential value of design interventions.

The overview of these different transformations allows for the development of a matrix that annotates the designed cases. The matrix is constructed by two coordinates: the horizontal coordinate indicates the process of the site, showing either a spontaneous transformation or one that has been regulated by design; the vertical coordinate indicates the architectonic quality of the design, examining the arrangement and ordering of form and space. The two coordinates address two components in the paradox of design this research explores: the definition of design in the form and composition, and the indeterminacy of leftover spaces. Hence, the annotation brings forward interesting cases that feed into answering the research question. The most interesting cases are those which combine both architectonic qualities and open-ended processes.

In the end, three cases are selected as seminal cases for a detailed reading: Pavilion Valby Smedestræde 2, the Garden of the Third Landscape, and Dalston Curve Garden. Located in the lower section of the matrix, these cases present an interesting combination of both the qualities of spatial-physical design composition and spontaneous site transformations[7], but the process also displays the emergence of spontaneity or unexpectedness, triggered by either ecological processes or social appropriation. The design's formal intervention in all three cases can be recognised as an **initiation**, which activates the social, ecological potential of the site, or makes the site's spatial, physical characteristics more explicit, without completely defining the outcome of the process.

1.4.3 Analysing Seminal Cases

In this section, I will elaborate the analytical structure for the case studies with three main components: the focal points for the reading of each case, the framework and methods for analysis, and drawings as the essential tool for analysis.

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[7]   The design of Gardens of the Third Landscape and Dalston Eastern Curve Garden present better architectonic qualities – the unity and integrity of the space, and the interplay between form and meaning, between function and aesthetic effects, while in Pavilion Valby Smedestræde 2 those qualities are not addressed to the same extent. The difference also offers sources for discussing the value of architectonic design.

Focal Points of Each Case

1 The Pavilion Valby Smedestræde 2 in Copenhagen, Denmark (SEEDS Research Team, 2013). This case features a novel transformation process whereby the design triggers social appropriation that goes beyond the initial intention of the design. The narrow focus on social aspects, however, resulted in the design inadequately addressing other qualities of the site, which is also a consequence of the site's temporary situation. Looking at this case allows for the discovery of the role of design in the dynamic social appropriations happening on the site. Additionally, this process represents the recent turning point in design practice, in which urban leftover spaces allow the design to be co-produced by multiple social actors. Revealing what is missing in this design would provide design instruments that improve the participatory design of leftover spaces.

2 The Gardens of the Third Landscape in Saint-Nazaire, France (Gilles Clément & Coloco, 2009). This project intentionally provides the conditions for open-ended ecological transformation on the site. Scrutinising the design practice could uncover design instruments that engage with spontaneous nature. What is also valuable in this design approach is that design not only deals with the functional requirements from ecological aspects, but the design intervention also gives expression to the morphological and material characteristics of the site. An examination of this case study therefore highlights the quality of the architectonic aspects of the design intervention. However, the design lacks strategies to enable the hosting of visitors and social events on site and it is therefore interesting to compare it with the case of the Pavilion Valby Smedestræde 2.

3 Dalston Eastern Curve Garden in London, England (J & L Gibbons, 2010). Reflecting upon the difference in design effects between Pavilion Valby, Smedestræde 2 and Dalston Curve Garden, this analysis highlights the advantages of designing with multiple lenses and foregrounds useful design tools. The design offers the four lenses of the analytical framework. It responds to the morphological characteristics of the site, facilitates vigorous social practices, nurtures new biotic communities, and introduces an intriguing material world. Although the primary focus of the design is on the social lens, the design efforts to devote to the other three lenses enhances the active engagement of local people. Dalston Curve Garden is complementary to the other two case studies, as each of these have both their strengths and weaknesses.

Analytical framework

The reading of case studies starts with reviewing what are the qualities of leftover spaces and follows by examining how the design responds to these qualities. Therefore, the lenses developed from the literature review of the qualities of leftover spaces are transferred into the analytical framework for case studies. The scholarly discussion on the qualities of leftover spaces guides the process of data collection and interpretation during the case study.

This analytical approach follows the trajectory of the formal layers approach that has been developed in the Chair of Landscape Architecture, TU Delft since 1984. The approach regards the site as an integrated ensemble and analyses it through an anatomy of individual components in each topic with layers of drawings "by isolating and articulating the essential features of a spatial composition through the production of new drawings" (van der Velde, 2018, p. 9). In this way, the unique characteristics of each layer could be explored, while the linkage of different layers is traceable. The original formal layers approach emphasises the spatial-physical components of the design project, dissecting the design into layers of basic form, spatial form, programme form, and image form (Steenbergen, Meeks, & Nijhuis, 2008). These four layers have been adapted by recent research in the Chair of Landscape Architecture. The criticism of the original layer approach is that those four layers only include the formal and compositional aspects of the design, inadequately responding to the temporal, experiential, and dynamic features of landscape architecture. For example, Saskia de Wit adds routing as an extra layer to study the experiential qualities of the entering the enclosed garden (de Wit, 2014). Rene van der Velde has expanded the contents in each layer to include dynamic and temporal aspects of the design transformation of the brownfield park project (van der Velde, 2018). In this research, an adaptation of original layers was also made, since the original layers do not respond to the various qualities of leftover space discussed in the academic literature. Therefore, I have modified the basic form and spatial form in the morphological lens, the programme form in the social lens, and the image form in the material lens. As ruderal ecology is also considered to be a quality of leftover spaces, an ecological lens has been added next to the other lenses. Additionally, the discussion of temporalities will be included in each lens, emphasising leftover spaces as interstices in the temporal dimension, and from there the transformation of each lens before and after the design intervention will be examined.

Reading Methods

Developed from the theoretical framework, I further defined focal points in each lens for collecting relevant data (Figure 1.18). The selection is based on a scholarly review of the qualities of leftover spaces in each lens, which are primary sources for developing those reading methods. In addition, in order to understand the relation between design and indeterminacy, I will document the transformation of the site regarding to each lens. The focal points are described below:

The morphological lens

1   **The landscape structure.** It examines the location of the site at a large scale, looking into the geographical properties of the site as the fundamental elements for understanding site's characteristics.

2   **The transformation of urban morphology.** The study of urban spatial composition would point out the relationship between the site and the urban context. Examining the morphological transformation of the site and its surroundings further allows me to trace the reason for the site's leftover situation.

3   **The spatial context of the site.** The mapping of site's surrounding spatial environment illustrates surrounding urban spatial characteristics: the volume of surrounding buildings and the structure of surrounding open spaces. These mapping practices further clarify the way in which the site is embedded in the urban spatial environment.

4   **The geometric and spatial characteristics of the site.** Drawing the site's geometric and spatial features allows me to better understand these characteristics. Furthermore, it informs an examination of the response to those characteristics in the design's composition.

5   **The change of composition after the construction of the design.** Mapping how the design composition has been appropriated allows me to envisage if the design provides a reference for guiding any future appropriation.

Social lens

1   **Urban social context.** Mapping the local demographic structure and the local urban programme presents the characteristics of the neighbourhoods and existing everyday social-cultural activities.

2   **New use and activities introduced by the design.** Mapping the relevant spatial intervention that sets conditions for people's use. It lays a foundation to discuss the relevant design tool that facilitates diverse social activities.

3   **The social interactions.** How does the site/design allow or stimulate social interaction, relating to individual/specific groups/everybody? Does the site present an openness to everyone, or only welcome a specific social group?

4   **The user's appropriation of the site.** If and how the design provides opportunities for people to change the spatial setting projected by the design.

5   **The usage of the site after the design projection.** Examining and drawing new visitors and how they perform in the new setting introduced by design. It further reflects how the design may develop certain new uses while allowing certain flexibilities.

Ecological lens

1   **The site's original ecological conditions.** To understand the ecological habitat of the site, especially the wild vegetation. The reading is not intended in a scientific manner, rather, it aims to understand the spontaneous ecological processes established on the site and allows for a comparison with the situation after design.

2   **New habitat conditions.** Mapping the new habitat conditions established by the design, especially the physical, non-living components that affect living organisms. The chosen factors are light intensity, moisture, humidity, wind barrier, and substance. The comparison between the ecological condition before and after the design examines the effect of the design on the ongoing ecological process: whether the design removes wild ecology, or facilitates it, or establishes other different ecologies.

3   **The ecological processes of the site after the design projection.** Reviewing how nature develops based on the habitat condition laid out by the design. The study can bring forward the discussion on the value of artificial intervention in the context of ruderal ecology.

4   **The maintenance regimes after the design projection.** To examine if, and how, the biotope conditions are maintained or facilitated by following artificial management, and how that management contributes to the development of the ecological conditions on site.

Material lens

1   **Current material entities of the site.** To gather and list the featured physical properties of the site. This gathering and reordering allows an interpretation of the material characteristics of the site: what is the uniqueness of the site's materiality and how it is distinguished from everyday urban spaces?

2   **The material world of the site's surroundings.** To compare the material world inside and outside the site would elaborate to what extent the site is experienced as a specific place.

3   **The experience of the material world.** Drawing the sequence of the experience of moving through the space. The experience of the material world is enhanced through the changes that occur along the sequence; the shifts between light and dark, between soft and hard, and between warm and cold, enhance the sensory experience of the material world. This sequence of experience is also related to the morphological lens, shaped by form, scale, and enclosure.

4   **Meaning and narrative retained in the material world.** To uncover how the design fosters a sense of place I will discuss my personal interpretation of the material world. In this circumstance, the source of discussion is collected from my bodily experience during the site visit.

The detailed reading of each project is established based on an intersubjective epistemology, introduced by Linda Groat in *Architecture Research Methods*. This way of understanding the world adopts the idea that reality could be interpreted differently by each individual, but the interpretation could also be shared: "Ontologically, it assumes that although there are multiple diverse viewpoints regarding sociocultural realities, it is nevertheless possible to achieve shared understandings of those realities" (Groat & Wang, 2013, p. 78) The reading methods in each lens have a different emphasis, being objective or subjective. For example, in the morphological lens, the geometrical and spatial data are more objectively collected and represented; in the ecological lens, the habitat condition and biotic communities are objectively investigated through mapping; and the social and material lenses involve more sources from my own observation and experience.

	Data	Methods	Products of Drawings
Morphological Lens	Landscape composition Transformation of urban morphology Spatial context Geometrical and spatial characteristics Change of composition after design	Document study (including literature, photos and maps)	Map of landscape elements Sequence drawing of urban morphology Axnometric drawing of urban context Axnometric drawing of design composition Sequence drawing of spatial composition
Social Lens	Local democratic structure and social programme New use and activities User's appropriation Maintenance and management	Observation	Map of urban programme Programmatic composition Axnometric drawing of social usage
Ecological Lens	Original ecological conditions New habitat conditions Species of trees, bushes, and distinctive perenials Change of ecological conditions	Semi-structured interview	Map of ecological conditions List of species Map of ecological conditions before and after
Material Lens	Material composition of the site Sensory experience Symbols and narratives Change of material world	Questionnaire	Object and material scheme Color and texture scheme Sequence of spatial experience

FIG. 1.18 Data collection trough lenses
Within the scope of each lens, data are collected with corresponding qualitative research methods.

Role of Drawing

To explore the formal language of the design, I adopt drawing as an essential component in the analytical process. As an analytical tool to disclose various spatial-temporal conditions on site, drawing facilitates the explorative nature of this research. James Corner speaks of this explorative capacity in his discussion on the agency of mapping: "the most formative and creative act of any design process, first disclosing and then staging the conditions for the emergence of new realities" (2014, p. 200). Drawing serves both as the tool for scrutinising various conditions in each lens, and as the representation of study results. One valuable capacity of drawing is that it specifies various data and information to detail location, scale, and form, which is vital in the study of architectonic design. In this way, drawing serves as an effective tool to reveal a design's spatial–physical intervention.

The process of drawing as a tool for analysis contains four steps: inventory, ordering, interpreting, and representing. In the stage of inventory, the drawing mainly serves a description purpose, reconstructing the site or its urban context from plan, section, or axonometric perspective. The process allows various features of the site to be

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revealed, unforeseen from a merely distant look. One needs to be precise about all detailed spatial data, for example, the height, shape, volume, and the ways in which different spaces are connected.

After the inventory, I start with ordering the information: the relevant data revealed by drawings are gathered under the same topic. For example, in the social lens of Pavilion Valby Smedestræde 2, after the inventory of the site's composition during the opening of TH Bar, I started to group the furniture on site into two categories: functional to accommodate people and other cultural activities. A map of categorised spatial components was further produced.

The results from this ordering feeds into the interpretation stage; through recognising the suggested use of different furniture, it sheds a light on why this spatial ensemble facilitates the dynamic social usage of the site. The product of the drawing process is intentionally kept vague, to allow drawing to be a process of asking questions. Through constantly making decisions on what should be drawn and why, it forces me to sharpen my argument and refine the analytical framework.

The last step of drawing is representation. In this step, the findings from analysis are communicated through drawing. Some drawings for representation are descriptive while others are schematic. In both ways, they showcase the qualities of the design intervention and provide a necessary stage on which to distil architectonic design tools from the case study.

Different drawing methods and perspectives have been assigned to different lenses, depending on the characteristic of the lens. In the morphological lens, plan, section, and axonometric drawings enable different perspectives on spatial characteristics. In the social lens, axonometric drawings or narrative drawings are applied to describe people's usage of the site. In the ecological lens, axonometric perspectives, or plan mappings are used to map ecological conditions. In the material lens, a series of diagrams and narrative sketches are used to get a grip upon the bodily experience of the material world.

This way of drawing cannot be defined at the very beginning of the analysis but develops alongside trials. At the same time, the ideas on "what to draw" evolve during the process of reading and drawing, leading to the emergence of new topics of drawing. The drawing process in itself is a way of discovering the site and asking questions about collecting relevant data. In this way, drawing becomes a tool to sharpen the argument of the analysis.

1.4.4 Cross-Case Discussion and Conclusion

After arriving at initial conclusions of each individual case, the next step is to discuss the findings through comparing the three cases. This step is discussed by Yin, as an essential component in multiple case study research strategy (2014, p. 21). In the context of this research, I will review each lens, discussing two aspects: how design enhances or gives expression to the qualities in each lens, and how the initial spatial-physical design facilitates the open-endedness in the process after the design. I will also compare the design approaches of the three case studies. As a result of the cross-case discussion, useful design instruments and approaches can be summarised.

Following the whole research procedure, I come to draw the final conclusion of the research. In the conclusion, I will reflect upon three fields: 1) How did the four-lenses analytical framework perform in the case study process? What is the benefit of using this method? 2) What is the role and effect of design in the context of leftover spaces? And what could we learn from the profession of landscape architecture? 3) What is the social and academic impact of the research? And what are the issues worth further exploring?

2 Reading Interstices

2.1 Multiple Reading Perspectives

"…in these architectural and urban territories, more or less abandoned, accidental and resistant, something that was attractive and stimulating; an intensity that escaped the intentionality of planning; something, paradoxically, from which inspiration could be drawn."

Luc Lévesque (2013). Trajectories of Interstitial Landscapeness: A Conceptual Framework for Territorial Imagination and Action.

In a discussion on the design transformation of leftover spaces, architect Luc Lévesque proposes a concept of "landscapeness" to engage the interstitial condition of leftover spaces in an inclusive and open-ended way. According to Lévesque, landscapeness is a way to approach a given territory that addresses "a process of selection, characterization and valorization of a specific territorial condition" (Lévesque, 2002, p. 23). Therefore, landscapeness indicates that one must be aware of the designer's interpretation of a given site, which is inevitably influenced by the designer's own subjectivity. Patience and scrutiny are required to read those intrinsic qualities of the site, which, in Leveque's words, are "immanent to a given territorial condition" (Lévesque, 2002, p. 50).

In the previous section *1.2.5 The Approach of Landscape Architecture*, I discussed the exploration of landscape architecture approaches that engage the specific qualities of the site as the starting point to designing for leftover spaces. The writings of Luc Lévesque further emphasise the importance of having an awareness of the subjectivity of reading and interpreting these qualities of the site. Emphasising the "selection, characterization and valorisation" of site qualities brings us back to the design paradox introduced in *1.2.4 A Paradox of Design*. Indeed, if a designer labels certain component of the site as valuable, the design may assign new intentions to the leftover space, thereby losing its open-endedness. How can we

assign subjective interpretation to these spaces whose essential values lie in their vagueness and indeterminacy? Addressing this question, I propose to apply multiple perspectives in a designer's reading of leftover spaces. This would prevent the designer from only focusing on a single issue or agenda, and allow them to explore the existing site without predefined judgements. The more site reading perspectives a designer applies, the more characteristics and interrelationships they can discover within the existing site. This helps the designer to understand the site as a relational construct of diverse human and non-human agencies, thereby avoiding arbitrary interventions. To summarise, I propose a multiplicitous approach to reading the site as the starting point for the open-ended design transformation of leftover spaces. This multifactorial examination can be conducted through different lenses, allowing the designer to see the same existing territory in different ways. The lens helps the designer to consciously understand what they are reading and become aware of how it relates to site characteristics in other lenses. These multiple reading lenses are especially important for designs of leftover spaces, since these vacant spaces are commonly considered to be worthless. Shifting between different reading lenses, the designer can develop a more in-depth understanding of the qualities of a leftover space that are entangled with each other and play an equal role in the site transformation.

To demonstrate this approach, I will introduce the four theoretical lenses that address the morphological, social, ecological, and material qualities of the leftover space. I will build up these lenses on the basis of academic literature, mainly from the field of architecture, landscape architecture, and urban design. From the literature review, I found that scholars with different backgrounds may discuss a specific aspect of leftover spaces that offer valuable conditions to the existing urban realm. I summarise these discussions in the context of the four lenses, in order to offer designers a reference from which to understand the qualities of leftover spaces. Later, these four theoretical lenses will be developed into methodological lenses for analysing three seminal case studies of the design of leftover spaces. When elaborating on these four specific lenses, it is not intended that these should be the only ways to consider leftover spaces. Instead, they serve as examples of how we could approach leftover spaces and provide a stepping stone towards a full scope of potential reading lenses for leftover spaces.

My selection of these four specific lenses is derived from three distinct sources. The first source is urban designer Matthew Carmona's proposal for six contemporary urban design dimensions. In his book *Public Places-Urban Spaces*, Carmona (2010) distinguishes six "different but intimately related" topics that offer a comprehensive review of contemporary urban design practices. These six dimensions are: morphological (the physical form and shape of settlements), perceptual (the

perception and experience of the "place"), social (the relationship between space and society), visual (the aesthetic character of the urban environment), functional (how places work and how to explore the potential of the place) and temporal (the relationship between time and the built environment) (Carmona, 2010. Pp. 12-14).

The second source is the research of epistemes in the design of the urban built environment, carried out jointly by architect Tom Avermaete, landscape architect Ellen Braae, and landscape architect Svava Riesto. Their research explores the ways in which designers approach the site conditions through different "frames of value and thought" (Riesto et al., 2018, p. 1), and five epistemes are discussed as examples: morphology (the evolution of forms and structures of urban landscape), phenomenology (the study of being, the subjective understanding of perceptual experience), semiotics (the study of signs and symbols, and how they are translated into meanings), praxeology (how people practice in the landscape), and ecology (the study of non-human organisms and their habitat environment) (Riesto et al., 2018).

The third source is the formal layers approach, studied by landscape architect Clemens Steenburgen in the book *Composing Landscape: Analysis, Typology, and Experiments for Design* (Steenburgen et al., 2008). The approach was developed in the chair of landscape architecture of TU Delft and was based on the "morphological-formal" study of European gardens. The layers approach examines a landscape architectural design composition with four constitutional layers: the basic form (how topographical elements of nature or man-made land are transformed into a design composition), programme form (the organisation of programme and movement in the design composition), the spatial form (examining the three-dimensional landscape space and its dynamics), and the image form (how the iconographic and mythological images are linked to the architectural forms in the design composition) (Steenbergen et al., 2008).

The three theoretical works outlined above discuss the spatial and geometric from, the social usage and site programme, and the image and perception of the material world, topics that are commonly addressed by the design practices of the urban built environment. Combined with the literature review of leftover spaces, I bring forward the morphological lens, social lens, and material lens for the designer's reading. In the introductory chapter, I affirmed that leftover spaces are inclusive spaces, not only for citizens but also for other non-human species living in the city. Therefore, I will add an ecological lens to emphasise the ecological potential of leftover spaces.

In the following sections, each lens will be discussed in two steps. Firstly, I will discuss the theories and concepts that bring out the potentials of having leftover spaces in the urban realm. These theoretical and conceptual discussions, although

unable to define specific qualities of a leftover space as each leftover space has its varied conditions, provide various ways to expand the way we understand leftover spaces, thereby serving as the basis for designers' own interpretation. After presenting these theories, I will introduce a case study or design intervention in each lens to explain the implementation of the theory.

2.2 Four Lenses

2.2.1 Morphological Lens: the Counter-Form as Container

Theories: Urban Voids and Specific Geographical Places

The study of urban morphology considers the physical forms of the urban built environment as the basis through which to understand the system and characteristics of a city. In an evaluation of three schools of urban morphological study, Anne Vernez Moudon, professor in urban design and research methods, proposes that "the city or town can be 'read' and analysed via the medium of its physical form" (Moudon, 1997, p. 7). Moudon highlighted that through reading the urban morphology, the design can understand the relationship between built and open spaces and historical transformation of a place (Moudon, 1997). Moudon's discussion helps us to examine the morphology of leftover spaces. Through viewing the structure of overall leftover spaces—the collection of residual forms of the city—-the designer can, in turn, interpret the characteristics and find underlying problems in the existing urban structure, and through examining the transformation of a leftover space's morphology, the designer can relate the current formal character of the site with its historical transformations. The following study of GUST, Stalker, and de Wit will elaborate these two potentials of the morphology of leftover paces.

According to the interdisciplinary urban research group, GUST, in their study of contemporary metropolitan conditions[8], the urban morphology has transformed, from being unified and compact, into an expanded and diffused pattern, in the latter half of the twentieth century. Leftover spaces, conceptualized by GUST as urban voids, collectively represent an image of residual part of urban composition, thereby showcasing the fragmented urban landscape (De Meyer et al., 1999). The diluted modern urban territory attracts the creative practices of the art and architecture avant-garde group, Stalker. In their artistic exploration of terrain vague with the instruments of walking and being in the site, they also suggest that the urban structure formed by these void spaces, conceived as an "archipelago," challenges the traditional mental image of the city; the urban territory is no longer conceived as a uniform, tightly knit structure, but has been transformed into individual zones penetrated by the passages of void spaces: "a grouping of islands that float in a great empty sea … form the background against which the city defines itself" (Careri, 2002, pp.186-187) (Figure 2.1). The composition of these void spaces demonstrates a temporal dynamic; alongside the existing void spaces filled with new urban functions come new void spaces that are constantly produced. This fluid composition of leftover spaces reflects the never-ceased urban territorial transformation.
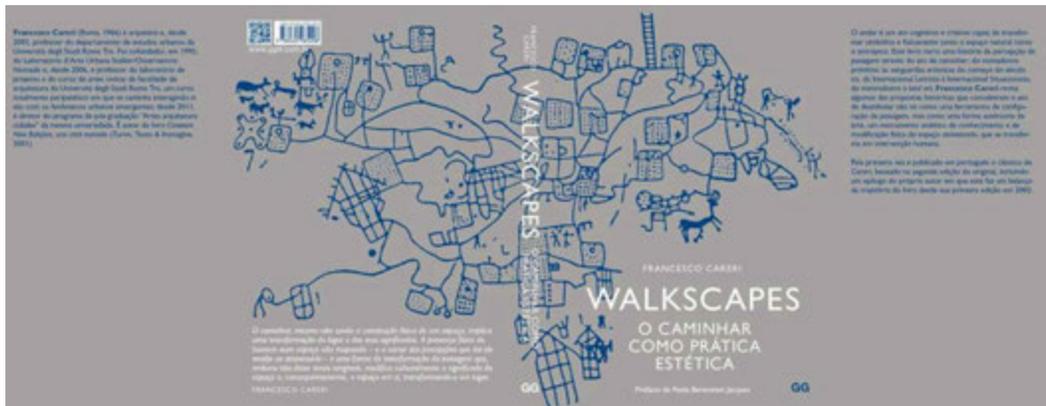
FIG. 2.1 Walkscapes
Through walking, Careri persuades people to explore the existing terrain vague of the city, which further brings forward the image of the city as an 'archipelago'. From: F. Careri (2002), *Walkscapes: Camminare come pratica estetica*, Editorial Gustavo Gili of Barcelona.

As well as discussing the morphological qualities of leftover spaces from a large urban scale, the study of interstitial gardens by landscape architect Saskia de Wit discloses the residual form of a single leftover space (de Wit, 2013). When examining the diffused metropolitan landscape, de Wit regards leftover spaces as "the intermediate form": both as by-products of urban transformation and as residues of the fragmented and heterogeneous metropolitan landscape (de Wit, 2013, p. 3). These intermediate forms, therefore, can reflect upon the characteristics of the metropolitan landscape that produces these spaces. Furthermore, through understanding the existing spatial and geometric form of the site, the designer can relate back to a series of past landscape process and historical events that lead to the current morphology of the space (Figure 2.2). These past processes accumulate and produce the palimpsest of a site. Precisely because the surface of the leftover space presents an ambiguity and emptiness, it in turn provides a clarity to access these past hidden layers of a place.
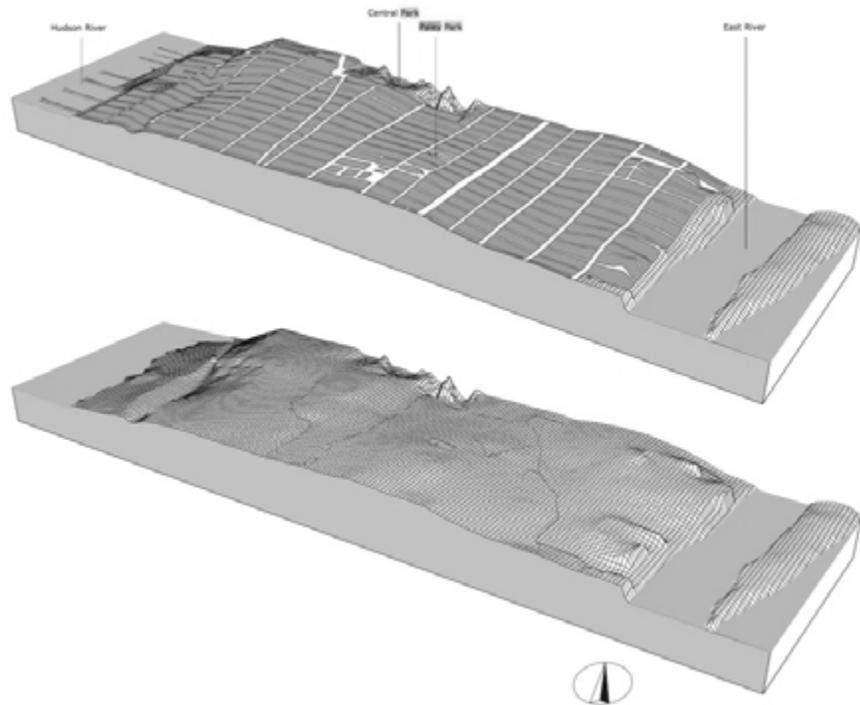
FIG. 2.2 The geometric form of Paley Park
The study displays how the previously empty slot is embedded into the urban composition and connects with the natural geographical condition and Manhattan. From *Hidden landscapes: The Metropolitan Garden and the Genius loci* by De Wit, S., 2014, (Doctoral Thesis). Delft University of Technology (p. 210). Copyright 2014 by S. De Wit.

On Leftover Spaces: Exploring/Articulating Urban Voids

To explain how can designers engage leftover spaces through the morphological lens, I will present two examples that respond to the character of leftover spaces as urban voids and as residual forms of the diffused urban landscape. The first is Stalker's experiment of walking through the terrain vague of Rome (Careri, 2002), while the second is the design of Paley Park that exposes the specific landscape characteristics in a previously-urban residual slot.

For Stalker, as introduced earlier, leftover spaces represent a diffused, fluid urban landscape with which people have not yet consciously engaged. To reveal these uncharted territories, the group of architects and artists walked around these empty, abandoned spaces and wrote, drew, or photographed their experiences along their walk. These pieces of uncharted territory, referred to in de Sola-Morales' manifesto of terrain vague (de Solà-Morales, 1995), are not clearly marked on any map, but constitute a variety of urban spaces: large areas of nature such as open fields, valleys, and estuaries; and small plots within the city, such as fenced-off plots, unused or unfinished industrial structures, quarries, and transportation infrastructures like highways and rail lines. On their walk, the group recorded their experiences with photographs and videos, while simultaneously attempting to interact with these spaces with musical instruments and using flour to mark their passage (Careri, 2002, p. 186). Stalker employ their bodily experience and artistic, creative interventions to interact with the site, to let them be fully exposed to the actual territorial conditions of these neglected urban spaces (Figure 2.3). Although Stalker did not introduce permanent physical interventions, their artistic, performative approaches vividly reveal the epistemological potential that lies in the re-engagement of urban void spaces.

FIG. 2.3 Stalker in the terrain vague of Rome
Flour is spread on twelve large cylinders of cement found on site, as celebrating the "gate" of terrain vague. Copyright 1995 by L. Romito.

The design intervention regarding the morphological characteristics of leftover spaces are explicitly addressed in the design of Paley Park. In De Wit's study of the "interstitial garden" of Paley Park, the analysis reveals how landscape architectonic design translates the morphological characteristics of a leftover space into something well-defined that illuminates the meaning of the place (de Wit, 2003). The site is 15.2 x 30.5 metres, sitting between two skyscrapers in the urban grid near downtown Manhattan. The design transforms the site with a pocket park that specifically responds to the site's morphological character, as a void in the metropolitan landscape of skyscrapers. The design adds to the space a new enclosure made by the canopy of honey locusts and an additional wall covered by ivy. It transforms the original urban void— the narrow and elongated vertical slot defined by the surrounding high-rise buildings—into an enclosed space. Within the designed space, manifold layers of a place can be perceived: the honey locust, the lush ivy, and the shimmering waterfall represent the primitive nature of Manhattan island, while the redefined enclosure reveres the previous status of the site as an empty slot between two skyscrapers. With architectonic design languages, the residual space becomes a specific place in which multiple meanings of the site can be experienced (Figure 2.4).

FIG. 2.4 Paley Park as a well-defined architectonic space
The new enclosure—composed by the English ivy, the canopy of honey locust and the waterfall—reverses the previous urban void into an intimate urban lounge. From *Hidden landscapes: The Metropolitan Garden and the Genius loci* by De Wit, S., 2014, (Doctoral Thesis). Delft University of Technology (p. 205). Copyright 2014 by S. De Wit.

Qualities from the Morphological Lens:

From the morphological lens, leftover spaces are seen as the counterparts of defined and functional urban composition. In this regard, these spaces are open for diverse uses and occupations and let these processes redefine the form of the space. As the by-product of heterogeneous urban transformation, any existing leftover spaces are unplanned. Consequently, the collection of overall leftover spaces showcases the diffused, fragmented metropolitan landscape. Unlike other urban spaces, which are designed with specific roles and functions, these leftover spaces present a set of residual forms, of which the meanings are ambiguous. In this way, the residual form of leftover spaces lets the designer access and further bring up other historical layers of the site, manifesting specific places in metropolitan landscape.

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Social Lens: Informal Uses and Situated Practices

Leftover spaces are open to diverse usages of local people, from ephemeral everyday activities to other more expressive cultural practices. These spaces do not set restrictions on various users of the space, in particular for minority social groups such as homeless people, immigrants, and grass-root artists who are often unwelcome in general public spaces. The appearance of leftover spaces presents to people an absence of authorities and regulations, thereby encouraging people to informally occupy these spaces. The animated scenes of diverse social practices in leftover spaces puts in focus the issues that arise in rigidly defined urban public spaces, reminding us that an openness toward different users and activities is weakly provided in urban public spaces designed with specific functions and programmes. The social practices in leftover spaces manifest the "lived spaces" in the sociological studies of French sociologist Henri Lefebvre (Lefebvre, 1991), which reflects how people use the space according to the actual conditions of a space, in their desired manner, rather than following the programme defined by the designer or other urban authorities.

Social Ordering

In cultural geographer Tim Edensor's research of industrial ruins, he highlights a "spatial disordering" as the fundamental quality of these spaces (Edensor, 2005). He argued that urban spaces in the modern era are produced by a prevailing desire to seek order and rationality, that every social space tends to be assigned with specific location and programme: "work and leisure, domestic and civic life, all have their proper place" (Edensor, 2005, p. 55). With regard to such ordered urban spaces, the openness and inclusivity of public spaces are endangered. In their investigation of secret side of urban social life in the leftover spaces of Berlin, architects Kenny Cupers and Markus Miessen point out that public spaces host "only regular, normal users" (Cupers & Miessen, 2002). A set of codes of behaviour can be found in each public space, granting legitimacy only to specific types of activities and welcoming specific groups of citizens. Consequently, different ways of interacting with and using urban public spaces are reduced to mechanical routines and behaviours.

Indeed, the contemporary city is inhabited by a highly mixed population from different regions and cultural backgrounds. Globalisation and advanced transportation have accelerated the migration of the population in recent decades. In the book *Loose Space: Possibility and Diversity in Urban Life*, Karen Franck and Quentin Stevens examine the phenomena of looseness in urban open spaces that harbour a range of leisure, recreational, and expressive social activities, allowing

people to step out of their daily routine. Franck and Stevens regard these loose spaces as important parts of the city, providing places "apart from the aesthetically and behaviourally controlled and homogeneous 'themed' environments" (Franck, & Stevens, 2007, p. 26). Indeed, the search for loose spaces is inherent in the modern society that encourages "the number of unplanned, unregulated encounters any one person may have" (Franck & Stevens, 2007, p. 5). Architect Kristiaan Borret, in his article *The 'Void' as a Productive Concept for Urban Public Space,* argues that urban void spaces provide a condition of "semantic emptiness" for the co-existence of different social identities (Borret, 1999, p. 241). Borret's discussion points out the complementary value of leftover spaces in hosting social practices within the contemporary city. Whereas "purified" public spaces no longer meet the needs of the hybrid lifestyle of urban dwellers, leftover spaces, being interstitial and marginal, can accommodate heterogeneous identities, and desired social practices in modern urban life.

Lived Space

The social appropriations of leftover spaces reveal a layer of the space that has been shaped by people who "live" within, as argued by Lefebvre in his theory of "space triplicity" that reviews a "dialectic relationship" between social practices from everyday life and the "dominant form of the space" as defined by the urban authorities (Lefebvre, 1991). According to Lefebvre, the production of a social space can be characterised in three layers: representation of space, spatial practice, and representational space. The representation of space refers to the designed and planned space, relating to the knowledge, signs, and codes about the established order or relations of the space; the spatial practice refers to the habitual behaviours of the space, embracing production and reproduction in response to specific locations, situations, and spatial sets; the representational space refers to the complex, intimate and layered space, where imagination is exerted to contest the common definition of the space (Barron & Mariani, 2014, p. 15-34). A leftover space allows people to conduct their own spatial practices: the practices from everyday life that inhabit the conditions of the existing. From this perspective, Lefebvre proposes to consider these spaces as "lived space"—the space that inhabits lived practices and exhibits its own capacities of transformation (Barron & Mariani, 2014, p 56) . In this way, leftover spaces open themselves to the full scope of possibilities in people's day-to-day life, serving as crucial counterparts of the formally created and regulated urban spaces.

On Leftover Spaces: Diverse Forms of Social Practice

As discussed by Franck and Stevens, diverse activities take advantage of the looseness of urban spaces. Some of those activities are daily and recreational, some activities may be "legally defined as crime," while others may be legal activities that other people "find objectionable or offensive, including unselfconscious displays of identity such as homosexuals kissing, cross-dressing or body piercing" (Franck & Stevens, 2007, p. 22). In this section, three types of social activates that may take place in leftover spaces will be under review: activities from everyday life, occupations from social minority groups, and grass-roots cultural practices.

The most ephemeral and temporary social uses in leftover spaces are those of everyday life. These activities are mostly intended for recreational purposes including adventurous play, discovering nature, or simply relaxed walking. The users and potential activities are highly unpredictable. When the leftover space appears to be close to a residential area, the site may be informally incorporated into the local community, as part of everyday public space. In cultural geographer Philip Kivell and Sarah Hatfield's study of local residents' use and perception of the derelict industrial land close to their neighbourhood, they found that the local residents used these informal public spaces for diverse daily activities, including children's play, team games, riding bikes, fishing, and meeting friends. These derelict lands are regarded as favourable outdoor destinations in the neighbourhood (Figure 2.5). Kivell and Hatfield conclude that these daily activities reflect the people's search for freedom and creative engagement with their everyday living environment. Some residents consider this derelict industrial land as "an integral part of the local community" (Kivell & Hatfield, 1998, pp. 121-125).

FIG. 2.5 Leftover Space
Leftover space as an ideal place for children's explorative and playful activities. Copyright 1958 by J.Tati.

The second set of social activities often pertains to urban minority groups, due to the hidden and disordered character of some leftover spaces. One case is offered by sociologist Stéphane Tonnelat's study of an empty river bank at Charenton-le-Pont in Paris, where the leftover bank is appropriated as a shelter for a group of homeless people (Tonnelat, 2008, pp. 291-324). The homeless people have developed their own spatial manoeuvres to inhabit these spaces—plywood and cardboard were used to make a patchwork that camouflages their shelters, preventing their settlement from being easily spotted (Figure 2.6). Tonnelat further points out that these improvised tactics illustrate how homeless people inhabit themselves in this interstitial space, of which the camouflage "becomes a spatial display offering an acceptable façade to their inhabitants" (2008, p. 314). In this way, the leftover river bank presents a "lived" space that manifests the spatial practice of homeless people. Similarly, in the article "The Dead Zone and the Architecture of Transgression," socially and politically engaged artist Gil Doron notes that the city's no-man's land hosts a variety of social minority groups and marginal activities: "the squatters, the prostitutes, the participants in public sex, the ravers, the protesters of 'Reclaim the Streets', the creators of community gardens" (Doron, 2010, pp. 247-263). It is these appropriations that redevelop and revitalise the leftover spaces. Furthermore, with their spatial practices the original designed form of the space will be revised, the image and form of a space can directly represent the social practices within the leftover space.

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FIG. 2.6 Homeless people's shed on the river front
From 'Out of Frame': The (in)visible Life of Urban Interstices - a Case Study in Charenton-Le-Pont, Paris, France by S. Tonnelat, 2008, *Ethnography*, 9(3), p. 312. Copyright 2008 by S. Tonnelat.
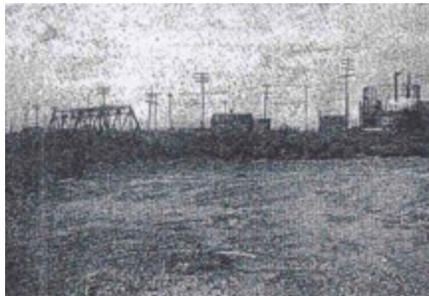
FIG. 2.7 Gangland and gang members
The undefined, leftover urban zones were frequently visited by local teenagers, searching for an expression of their identity. From *The gang. A study of 1313 Gangs in Chicago* by F.M. Thrasher, 1927, Chicago, IL: The University of Chicago Press. p. 125. Copyright 1927 by F.M. Thrasher.

An earlier piece of research that addressed the correlation between social marginality and undefined areas of the city was conducted by sociologist Frederic Thrasher, in his investigation into "gangs" in early 1926 (Thrasher, 1927). A "gang" implied a group of teenagers that hung out in the marginal, undefined territory of Chicago— "the twilight zone of railroads and factories, deteriorating neighbourhoods, and shifting populations…" (Thrasher, 1927, p. 3). In total, at least 1,313 gangs were found in Chicago and 25,000 boys and young men were found to be members (Figure 2.7). These undefined territories particularly satisfied the young people's desire for untamed, spontaneous, and experimental practices beyond their regulated daily routine.

FIG. 2.8 The settlement of homeless residents
The abandoned railway arches near Salford Central Train Station are occupied by homeless people.
From "The Multiple Temporalities of Informal Spaces" by J. Hudson, 2015, *Geography Compass*, *9*(8),
pp. 477, 478. Copyright 2015 by J. Hudson.

Marginal social groups can be considered as the crucial users of leftover spaces, but they are not the occupants of these urban interstices. Indeed, different types of activities can co-exist in leftover space and a consensus for using the site can be formulated. In urban designer Joanne Hudson and Pamela Shaw's study of a derelict site in Salford, England, the space underneath an abandoned railway was temporarily settled by different groups of homeless people (Hudson & Shaw, 2011). Those who stayed more permanently would occupy the larger arches of the viaduct, while the incidental visitors stayed in the smaller arches. As their stay became longer, the settlement of the homeless person—their sheet, duvet, and personal belongings— became more organised (Figure 2.8). Alongside the settlement of homeless people, other types of users, such as graffiti artists and people walking their dogs, were also found on the site (Hudson & Shaw, 2011, p. 10). Whereas certain activities may co-exist in leftover spaces, others may compete with each other, which often happens when more normal and regular uses meet transgressive and offensive uses. Hudson and Shaw conclude that these interactions and contests can test the limit of the "symbolic architecture of knowledge" and bring new opportunities to the design of urban environments.

Qualities from Social Perspective

In the absence of any predefined function, and with varying degrees of spatial disordering, leftover spaces lie in the margins of regular urban public spaces, accommodate alternative social activities, and allow for the expression of individual identities. When leftover spaces appear close to residential communities, they can offer at-hand daily recreational places. In other cases, they provide an ideal site for manifold marginal social groups, allowing their desire and identities to be expressed, and perhaps to be able to communicate with the common public. The informal, improvised practices in leftover spaces often resist the dominant function of a social space, instead constantly communicating and even challenging the power system of the space that is projected by urban authorities. In this way, leftover spaces draw out new perspectives from which to develop more inclusive public spaces.

2.2.3 Ecological Lens: Niches of Urban Wildness

Leftover spaces are not only ideal places for informal social activities, but also provide relief for urban wild species. For the current urban environment, most urban green spaces are maintained to satisfy certain functional or aesthetic requirements and reject the presence of wildness. Wild flora is commonly considered as weeds, and some wild animals are regarded as dangerous and disruptive. In this sense, leftover spaces can offer shelter for urban wildlife; when artificial management systems are temporarily withdrawn from the space, the wild species are left to inhabit and to grow and breed without human interference. This spontaneous nature can incrementally enrich the ecological condition of an urban environment, while further providing valuable resources for the knowledge field of urban ecology, and ultimately encouraging a reconsideration of the relationships between humans and the world of non-humans.

Human-Centred Urban Nature

Landscape ecologist Richard Forman, in his guidebook of urban ecology *Urban Ecology: Science of Cities*, puts forward that the modern urban environment is characterised by its strong dependence on human activities (Forman, 2014). Ecologist Norbert Muller, in his book *Urban Biodiversity and Design* states a similar concern: the urban ecosystem is radically altered, and the ecological condition has been greatly varied from the original condition of the land, including climate, soil, and moisture (Müller et al., 2010, p. 9). Nature has become an exploitable resource for various production purposes such as agriculture, forestry, and industrial manufacture.

Most urban green spaces are managed to allow for only specific types of ecology. For example, in most private gardens, plants are arranged mainly for aesthetic purposes. In urban parks, the grass is constantly mowed, and wild plant species are regarded as weeds and removed. Other green spaces might be less intensively maintained, such as river belts, but still, the natural process is limited by using a lower profile of grassland and shrubs for safety concerns. Under these circumstances, wild animals, considered as "harmful" and "disturbing," are threatened as they lose natural habitats and migration paths. Ecologist Peter Del Tredici, in view of artificially managed urban nature, questions the human-centred approaches towards urban nature: "people encourage the presence of organisms that make the environment a more attractive, liveable, or profitable place to be, and vilify as weeds and pests those that flourish in contradistinction to these goals" (Tredici, 2010, p. 299). Unlike other maintained urban green spaces, leftover spaces provide niches that allow wild species to inhabit and to prosper, showing their adaptabilities and resilience; other wild species, especially animals, use the leftover spaces as part of their migration routes, allowing them to travel from the inner city to the suburbs.

A Reservoir of Biodiversity

The term biodiversity, or biological diversity, has been used to describe "the variety of life forms, the ecological roles they perform, and the genetic diversity they contain" (Wilcox, 1982, p. 640). When the site is no longer required to perform human-desired functions, it offers conditions for nature to thrive. Over a period of time, ecological growth will add more biotope complexity to the site as adaptive species settle there. When overgrown with wild vegetation, leftover spaces are commonly discussed as urban wastelands in the urban ecological study. According to the study of urban wasteland, these spaces, subject to natural process, present a high level of biodiversity (Kowarik, 2011, p. 159). A piece of urban wasteland can further improve the species richness of its neighbouring habitats through colonisation and interchange.

Advancing the Study of Urban Ecology

The newly established biotopes in leftover spaces serve as a valuable resource for the development of the discipline urban ecology. Ever since the establishment of ecology as a scientific discipline in 1890s, the investigation of wild floristic communities has been an important source in the advancement of the field (Gandy, 2013). The earlier studies of urban wild flora, including ecologist Pitton Tournefor's stud in Paris, were considered as valuable resources for later ecological studies.

The most well-known study of urban wildness is that of botanist Paul Jovet, who carried out extensive studies of urban wild flora from the 1930s to the 1990s (Gandy, 2013, pp. 1303-1304).

Additionally, as the urban ecosystem is highly affected by human activities, gaining an understanding of how wild ecology adapts to disrupted habitats allows ecologists to develop new strategies for tackling urban environmental issues. Rare species are found in these ecological niches, most of which demonstrate a high level of adaptivity to the urban environment. These adaptive biophysical processes further provide references for the design of urban nature. These newly established biotopes were especially interesting to ecologists in the period from the 1960s to the 1980s, when the aftermath of the industrial age left a large amount of derelict and contaminated industrial land within the city. In a study that evaluates the effects of industrial activities on urban wildlife, ecologist B.N.K. Davis's pointed out that through examining how wild nature establishes a new equilibrium in disturbed land, scientists can gain an understanding of the adaptive mechanism and apply this knowledge in other urban areas. The knowledge gained in these newly established habitats could further help to predict the future tendency of urban floristic groups and to help reconsider the ecological conservation principles (Davis, 1976, p. 286). Another important figure in the study of abandoned industrial land is ecologist Herbert Sukopp who, along with his research team, studies the pioneering ecological processes of Berlin's abandoned industrial land. Sukopp's study largely promotes the development of Berlin School of Urban Ecology, which serves as a crucial foundation for the establishment of the discipline of urban ecology (Kowarik, 2020, p. 445).

Re-Shaping Human-Nature Relationships

When spontaneous nature transforms the leftover space into a reservoir of wildness, the appearance of "unruly" nature presents a distinct contrast to the homogeneous, sanitised urban green spaces, which encourages new threads of thoughts on human–nature relationships. Landscape architects Anna Jorgensen and Marian Tylecote, when exploring the ambivalent perception and meaning of urban wasteland, conceptualise such sites as interstitial wildness. According to Jorgensen and Tylecote, the space of interstitial wildness reveals the hybridity of urban nature that "does not conform to any traditional or well-known vision of nature" (Jorgensen & Tylecote, 2007, p. 458). This process of nature that transforms and recovers previously human-inhabited land presents the agencies of nature and the entangled relationship between human and non-human beings, in Jorgensen and Tylecote's words: "human and natural agency have become enmeshed over time" (Jorgensen & Tylecote, 2007, p. 458). The observations of wild nature tell an inspiring story of

co-existence, as the writer and journalist Richard Mabey describes: "Discovering that the natural world is indifferent to at least the clutter and ugliness (but not usually the poisons) of our urban environments does not mean that we should be also. We should instead be trying to make our built-up areas more fruitful and life-giving for all their inhabitants" (Mabey, 1973, p. 206).

In relation to the ambiguous meanings of interstitial wildness in urban wastelands, Gandy criticises our seemingly objective approaches to dealing with nature, for example the nature preservation regulations, which are substantially involved with political agendas and cultural implications. For instance, the lists of rare species are commonly made based on administrative boundaries—as political instruments—but rarely consider the total potential loss of the species on the global scale. Gandy argues that "the very idea of biodiversity is as much a mirror of entanglements between different cultural and scientific discourses than any putative representation of external nature" (Gandy, 2013, p. 1305).

On Leftover Spaces: Finding and Engaging Unexpected Nature

In the following sections I will review several examples of leftover spaces that serve as reservoirs of wildness. Commonly, they offer a shelter for a variety of wild species inside the city. In some disturbed areas, pioneer ecological processes, collectively called ruderal ecology, can establish and recover the exploited or contaminated land.

In the review of floristic study of the Colosseum by botanists Caneva, Cutini, Pacini, and Vinci (2002), it was shown that, as early as 1643, botanic studies had been conducted in Rome's Colosseum—a ruin since the 6th century. The site of the ruin possesses similar ecological qualities to leftover spaces, seldom visited by humans, where nature is left to develop in its own way. Caneva, et. al point out that distinctive botanical species could be found at this site because of the "abandonment and lack of maintenance" of the historic monument (2002, p. 299).

A heterogenous group of wild species can not only be nurtured over hundreds of years at the site of a ruin, but a contemporary abandoned site, left alone only for a few decades, can also become a reservoir of wildness. Landscape ecologist Jennifer Foster studied the Petite Ceinture railway line in Paris, which has been derelict since 1993, where the land of the circular railway network now serves as a great home for abundant wild flora and fauna: "over 1000 plant species and over 1000 species of lichens and mushrooms are found in this abandoned area" (Foster, 2014, p. 128) (Figure 2.9). The circular area further allows for a network for ecological exchanges to be established, providing an ecological corridor in the existing ecosystem.

FIG. 2.9 Petite Ceinture Railway Line
The circular industrial railway land around Paris provides shelters for wild species and facilitates connections of other habitats. From Hiding in plain view: Vacancy and prospect in Paris' Petite Ceinture. by J. Foster, 2014, *Cities*, (40), pp.125, 126. Copyright 2014 by J. Foster.

In the above cases, these leftover spaces simply have been simply abandoned or unused by humans. Other leftover spaces in the city that are in a rather disturbed condition, most of which had previous industrial uses. These spaces demonstrate even more clearly the transformative agencies of wild nature. As previously introduced, a seminal example is Sukopp's investigation of Berlin's industrial land, for which the research team examined the soil condition, habitat, and biotic species after spontaneous nature processes had restarted there. Their results show that vegetation existing in these derelict places are at different stages of development, which presents an ingenious mixture of plant communities. With the assimilation of transformational pioneer groups, the soil structure of the site is improved. The research proposes that a certain amount of wilderness should be preserved inside the city as experimental sites for the study of urban ecology: "Here are the field laboratories where possibly new and well-adapted ecotypes of our native or naturalized wild plants will originate in the changed environmental condition" (Sukopp, Blume, & Kunick, 1979, p. 127).

Moving beyond the above investigation, I would like to introduce two designers who attempt to engage with the transformational process of nature. In their attempts, the intention is not to impose human subjectivities to nature, but to take the intervention as the starting point and let surprise emerge. The first is the French landscape architect and garden designer Gilles Clément. In his later study and practice with nature, Clément suggested the metaphor of the garden to persuade a working approach with nature that accepts humans as part of nature, sharing the environment and natural resources equally with other non-human forms of life. Human beings play the role of the gardener in cultivating the diverse forms of life

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on our planet (Clément, 2018a). The starting point of the gardener's practice is to understand the existing natural conditions, species, and their behaviours, and artificial intervention should be minimal, in Clément's words: "to do as much as possible with and as little as possible against" (2018b). The artificial intervention engages with the dynamics inherent in the ecosystem, maintaining and increasing the diversity and complexity of nature.

The second figure is the Dutch artist Louis Le Roy. Unlike Clément, who is in favour of observing more and intervening less, Le Roy eagerly explores the value of human's creativity to the transformation of nature. What is emphasised here by Le Roy is the period of time taken for the intervention to run its course, to allow creative human practices to manifest potential results. The result of this continuous, creative, and situated artificial intervention would bring more complexity to the nature, towards the climax form of nature's own process. Le Roy reminds us that this dynamic can only be achieved by the complex system that gradually evolves over time, allowing temporary disruptions to bring new organisations (Vollaard, 2002). Through bringing human creative practices to natural processes, the artificial intervention may accelerate the movement of nature towards greater complexity and evolve in an open-ended manner.

Quality from Ecological Perspective

In the neglect of artificial management, leftover spaces offer ecological niches in the urban realm, accommodating wild flora and fauna that are often excluded in regulated urban green spaces. Through accommodating wild species and through diversifying the habitat pattern of urban ecosystem, leftover spaces play a crucial role in sustaining the natural environment of the city. The "unruly" nature, its unsettled succession and ambiguous meaning, lets people reconsider the established relationship between man and nature, reflecting upon the social, cultural, and political implications in current design and management of urban nature.

2.2.4   Material Lens: Unfamiliar Encounters

Characterised by ruin, overgrowth, and waste, the material world of leftover spaces can be unfamiliar and may call forth unique sensations. Encountering these bewildering scenes will trigger alternative perspectives on the material world—the objects and things—in people's daily life and allows people to question the meanings and values that they normally take for granted. The key to these material

qualities lies in the ambiguity in the way in which things manifest themselves, forcing people to "un-learn" the meaning given to the objects and things and to gain more consciousness of their body and of their experience of the present physical world. When wild plants emerge and re-occupy leftover spaces, they bring to the material world of leftover spaces a natural quality, which can be recognised as nearby green spaces that offer people a restorative experience in everyday urban life.

Material Decontextualization

I will explain the mechanism behind the sense of bewilderment given by leftover spaces with the process of material decontextualization. Material decontextualization happens when an object is placed in a drastically different context than it might usually be found, thereby blurring the identity and meaning of the object, making it no longer familiar to its perceiver. As discussed by Edensor, common objects and things in our everyday urban environment are understood in terms of their specific categories of uses and meanings (Edensor, 2005, pp. 53-54). People's perception and experience of the material world is restrained, in a predefined way, with a set of fixed meanings, and the discourses and indications behind such perceptions are seldom questioned. However, the objects and things found in leftover spaces are in a state of abandonment, their usual appearances no longer maintained, and the way they present themselves is outside of their customary context. For example, we may find industrial machinery in an empty warehouse, rusted and falling apart, mixed with pieces of glass, steel, and wooden plates. In the absence of order and functions, things start to mix with each other and become transformed by organisms such as bacteria and fungi that cause natural degradation, making their appearance more questionable. The material degradation subsequently introduces a tension between the observer and the objects, making them question the meaning and value of things that are otherwise validated by society and culture.

Bodily Experience

This ambiguous setting, which distances people from their knowledge and their usual way of knowing, now expands the experience of the material world, allowing people to explore it with their body, senses, emotions, and memories. In this context, the meaning of the material world is not readily defined but is formulated during the process of being in the specific material world. These alternative insights are introduced by the study of phenomenology, which considers that the comprehension of the material world is a process of continuous cognitive formation. Artist Tanu Sankalia suggests that in encounters with the urban built environment, one should

not only reply with "granted knowledge," but with "the engagement of the body's gaze" (Edensor, 2005, p. 98), as a perpetual mental construction that varies through time. In this way, people comprehend things not only through knowing what they are and why, but also comprehend them creatively, generating ideas of "what it can be" (Gauthier & Gilliand, 2006, p. 42). The situated bodily experience of the material world of leftover spaces offers new ways to see the city and new opportunities to accommodate body, mind, and imagination in the urban environment.

Restorative Nature

Alongside the deterioration of manmade things lies the simultaneous growth of wild perennials, bushes, and trees, offering an intense experience of nature. In a study of people's cognitive experience of nature, environmental psychologist Stephen Kaplan claimed that nowadays people frequently face pressures from a highly artificial urban environment (Kaplan, 1992). In this case, nature can offer a restorative experience that restores people's mental and physical conditions. Restorative nature has four primary qualities: "being away"—temporarily being away from the everyday urban ambience; to feel "extent"—either physically in the distant wilderness or with symbols and metaphors of nature; to arise "fascination"—as nature is "well-endowed with fascinating objects as well as offering many processes that people find engrossing"; and feeling "compatibility"—people do not need to make extra efforts to prevent mistakes and therefore one is more at ease (Kaplan, 1992, p. 13). This restorative experience can be gained in leftover spaces, provided by their crude appearance, letting people mentally disconnect from the urban environment. Especially because leftover spaces can emerge in every possible corner of the city, these spaces are easily accessible to people, offering nearby possibilities to reconnect to nature.

On Leftover Space: Derelict Objects, Wildness and Everyday Life

In the material world of leftover spaces, things start to mix with each other and refuse to be subscribed into specific categories. However, to elaborate on the material character of leftover spaces, I will discuss three groups of materials—waste materials, objects left by incidental visitors, and wildness—in the following sections and elaborate on the production and effects of their materiality.

One group of materials that we find frequently in leftover spaces is waste. Waste is comprised of redundant objects that have stopped functioning in their determined setting, and over time they start to deteriorate, to rust, and become covered by

moss and dirt. From Edensor's viewpoint, things in ruins are emancipated from the rigid way of representation: "no one now orders them and places them into specific categories, for their fate is placed within an uncertain situation which may be variously influenced by human and non-human animal users" (Edensor, 2005, p. 108). These obsolete objects decompose at varying speeds, due to their different material characters. The way these objects hybridise highlights how such things are always enmeshed with external values that are, on some occasions, worthy of being re-examined. As Edensor notes, "Waste materials offer evidence for a radical critique of the myth of universal progress drive by the supposedly innovative power of capitalism and technology" (Edensor, 2005, p.101). In encountering redundant objects, one realises that things are not produced in a linear process, as commodity, but they are transformed in a circular way through production, usage, abandon, and recycle (Figure 2.10).

FIG. 2.10 Derelict Materiality
Derelict materiality evokes multiple narratives of the place. Landscape Park Duisburg-Nord.

While researching Tokyo's void spaces, architect Heike Rahmann found pieces of domestic objects that are left there as a result of appropriation by local residents, including "drying clothes, drying and storing vegetables, gardening, and washing" (Rahmann & Jonas, 2014, p. 125). The leftover spaces were mostly clean, thanks to the sweeping of the residents. Some tiny empty spaces were fenced off only by a rope, because respect for other people's private property is inherently coded into Japanese culture. These traces of usages and arrangements reflect the everyday life of the neighbourhood. Encounters with these void spaces in the neighbourhood,

with attention given to the sensory aspects of the space, allows the characteristics of the neighbourhood to be captured through the details detected by the visitor's eye: "Bleak, illogical emptiness colonized by patches of spontaneous vegetation, rainwater collecting on an abandoned pavement, reflecting the humming air-conditioning units—a moment on a Tuesday afternoon in Ginza" (Rahmann & Jonas, 2014, p. 119). The material world of leftover spaces, in this way, manifests local cultural identity through those natural phenomena and through deeply embedded social appropriations (Figure 2.11).

FIG. 2.11 Domestic objects found in the leftover space
The narratives of everyday life are reflected by the 'waste' in neighbourhood's leftover spaces.

Wildness is another material feature in leftover spaces. The material quality of this spontaneous nature has been discussed in previous sections, as "restorative nature". Furthermore, the evolving processes of the interstitial wildness foreground the spontaneous agencies of nature (Jorgensen & Tylecote, 2007), discussed in the previous section *Re-Shaping Human-Nature Relationships*. It is not only this interstitial wildness that lets people recognise the agency of nature, but its materiality also projects a sense of the sublime. According to Jorgensen and Tylecote, when explaining the emerging response to interstitial wildness, the sublime experience can be gained through confronting "the vastness, infinity and ineffability of nature (and wilderness)" (2007, p. 448). Urban planner Greet De Block and landscape architect Vera Vicenzotti, in their revisit of the concept of affection that challenges a set of human-nature relationships, argue that the sublime experience

lets people engage with things in a reflexive way: "the senses and imagination are incapable of taking in the overwhelming dimensions or power of the landscape, and the faculty of reason must be engaged" (De Block & Vicenzotti, 2018, p. 51). Unlike managed or exploited nature, the sublime pushes us to relate to nature without prioritising ourselves, without taking human beings as the centre of our environment. The sublime experience frees people to judge those non-humans purely by their particular characteristics. This experience reminds us to keep thinking critically about the way we define and relate to nature, as De Block and Vicenzotti state: "bring up immanent possibility of forms of acting that undermine, transform, or supersede existing relational configurations" (2018, p. 52). (Figure 2.12)

FIG. 2.12 The 'patterns' of wildness
The flux of overgrown and disordered wildness present alternative aesthetics.

Qualities from Material Perspective:

The material world of leftover spaces is often characterised as bizarre and ambiguous. In the case of neglect, objects that no longer serve human agendas start to be transformed by natural agencies or social appropriations, presenting a peculiar setting that consists of a mélange of obsolete objects and wildness. This disordered material world can hardly be encountered in the rest of city and serves as a reservoir of meanings relating to the place's history, nature conditions, and social-cultural discourses. Confronting the material world of leftover spaces lets people reflect upon our conventional ways of approaching things and nature in our everyday life.

The aforementioned four lenses—the morphological lens, the social lens, the ecological lens, and the material lens—provide designers with a spectrum of references. With the help of these discussions, now designers can understand multiple qualities of leftover spaces and explore specific qualities of the site they are designing with. Reviewing the four lenses, the primary quality of leftover spaces is their capacity to be understood as containers for diverse activities, processes, and meanings that are supressed in regular urban spaces. With the presence of spontaneous human and non-human agencies, these spaces can offer valuable complimentary practices and meanings for the rest of our everyday urban environments. The social lens, ecological lens, and material lens reveal the quality of leftover space in each sense and sometimes the views through different lenses may be contradictory. For example, to appropriate the leftover space for social use may ultimately destroy the wildness of the site, which is considered a positive quality in the ecological lens. However, it is this multifaceted character of leftover spaces that makes their design so interesting. Therefore, the starting point of design, the understanding of the qualities of leftover spaces, needs to be entered from multiple lenses. Through the reading of multiple interpretations of a leftover space, the design can be driven by selecting the aspects deemed to be most valuable to design, while preserving or cooperating with aspects of other lenses.

The discussion relating to the four lenses reveals to us that in each lens the qualities of leftover spaces are closely related to the processes that take place in the period in which the site lies vacant. Therefore, it is crucial to read leftover spaces from a temporary dimension, to examine their ephemeral events and gradual transformations. The qualities of leftover spaces lie primarily in what they might become, in their indeterminacy and open-endedness. Therefore, to fully understand leftover spaces, the temporalities in each lens will be revisited in the next section to explore the influence of time in reading leftover spaces.

2.3 Temporalities

The term temporality means "the state of existing within or having some relationship with time." (Lexico, n.d.). Paying attention to the temporalities of a leftover space anchors its interstitial condition as a temporal gap in the process of urban transformation, allowing us to detect the processes taking place within, focussing on the duration of each of these processes, and thereby understanding the dynamics, agencies and transformative capacities of informal social practices or the world of non-human beings.

The temporal vagueness of the function of urban public spaces is discussed by Franck and Stevens through the concept of looseness; they claim that "the looseness of space varies across time" (Franck & Stevens, 2007, p. 15). Some public spaces may only serve certain urban functions or programmes on specific days or at fixed hours, while the rest of time these spaces are disused. For example, the playground is an animated public space during after-school hours, while at other times of day it might be simply an open space. In other cases, looseness can be ephemeral, lasting for only a short time. For example, skateboarding can temporarily change a common urban square into a space of play, but when the skateboarder leaves, no trace of this appropriation is left in the space. From this perspective, leftover spaces have a rather extended period of looseness; most leftover spaces have a previous usage and when the usage ceases, the space gradually becomes more and more unkempt and disintegrated, and thus attracts informal social practices and wild flora and fauna. What is more important is that, as Franck and Stevens remind us, the degree of looseness of urban spaces is not permanent. When a growing number of informal public activities take place in a leftover space, the space will simultaneously become more "regular and anticipated" (Franck & Stevens, 2007, p. 16), and become more fixed to a specific social group and type of programme. For example, a disused trainyard can be appropriated as a cultural camp by a group of grass-roots artists. However, when these vigorous cultural practices gain more public interest, they also attract a growing amount of commercial investment and impose more formality upon this space. This temporal dimension reminds us that, in the same manner, the leftover space is a temporal phenomenon that is deeply connected to that which comes before and after its present leftover state. The current happenings of the site are afforded by the site condition that has accumulated from previous processes, and these happenings might project their influence into the future development of the site.

Next to the above discussion, the temporalities within the leftover period are also worth being given the designer's attention. During this period, various human and non-human "users" will take over the space and transform it with their own capacities. Their practices, which are not performed in any predefined way, are practically based on the spatial-physical conditions of the site. In this regard, reading the temporalities in leftover spaces can inspire designers to think about how design can invite more spontaneous social-ecological processes in a leftover space. In the following paragraph, I will review this reading of temporalities from each of the four lenses separately.

In the morphological lens, the primary reading of temporalities can be drawn on the geographical and urban transformation of the site. Architect and philosopher André Corboz calls for reading the land as a palimpsest, against the dominant utilitarian approach of urban territory as merely a surface for exploitation. The palimpsest approach looks into multiple past processes of the site, "to identify the traces still present of lost territorial processes" (Corboz, 1983, p. 32). According to Corboz, both natural processes and human activities are constitutive factors that shape the current territorial conditions, even those most distant and fugitive courses: "The land is not a given commodity; it results from various processes. … But most movements affecting it— including climate modifications—extend over such a time spread that they escape the notice of individuals" (Corboz, 1983, p. 16). The understanding of the current site morphology, therefore, is an embodiment of endless territorial modifications. Therefore, reading the leftover space should avoid simplifying the existing space as merely a residual form in the urban morphology, but instead explore its past processes from the natural, geographical transformation and from cultural, artificial modification.

The temporalities in the social lens might be the most dynamic. The improvised social activities that take place in leftover spaces are derived from people's perception and experience of the site; their interactions with the site, as well as their creativity and identity all play definite roles. The interaction between "body, image, thought and action" in the creative use of urban public spaces is illustrated in the study of skateboarding by architectural historian Iain Borden, in which he states that this improvised activity is "dismissive of authority and convention" (Borden, 2019, p. 14). It is in leftover spaces, where conventional behaviour is missing, that users are given the conditions to invent new practices. Meanwhile, multiple social practices can co-exist within one leftover space and display their own temporalities – their different moments of happening and their own duration. Over the course of a day, the leftover space might be used for leisure activities by the local citizens, but at night, it might offer a resting place for homeless people. In architect Joanne Hudson's study of the informal uses of vacant urban spaces, groups of homeless people and graffiti artists were found to occupy their own zones of an abandoned railway land, displaying an

"implicit timetable of use that associates with the opportunistic appropriation of the site" (Hudson, 2015, p. 472). In this regard, a consensus among particular users can seem to be developed in a leftover space—each group autonomously defines its own space and stays in harmony with others. The design of leftover spaces should also provide a condition for multiple uses to happen and integrate the temporalities of different types of activities.

Compared this with temporalities in the social lens, the changes in the ecological lens are more subtle and incremental. These natural processes display a transformative process that will gradually enrich the ecological conditions of the site, changing the land once exploited by humans into a natural reservoir. The barren soil will be quickly occupied by pioneer species that adapts to the infertile condition of the site and gradually improve soil fertility. After a period, more plant species can be found on the site and more wildlife can establish their habitats in the leftover space. This process manifests Le Roy's belief that natural processes gradually move towards the "highest possible complexity" (Boukema et al., 2002, p. 24), and human practices should seek to be a part of this natural flux. The natural world of leftover spaces furthermore represents temporalities in a cyclical way. The foliage of wild plants withers during the harsh winter season and become alive again when the spring arrives. These intriguing cycles and successions of nature should be embraced by the design, to tell people that, in nature, nothing is fixed, that everything changes according to the nature's internal tempos.

The temporalities in the social and ecological lenses determine the temporalities in the material lens. The material world of the leftover space cannot change by itself but is triggered by social practices and natural processes in the space. As explained earlier, in the material lens, after the site is abandoned, things are taken through an organic degradation process, causing their appearance to become no longer familiar to people. Besides the natural processes, informal social practices and bringing various objects to the site lead to the material world being more heterogeneous and confusing. When local people appropriate the leftover space as an outdoor venue for their leisure activities, they tend to bring pieces of outdated furniture and DIY objects, which shows the ways in which people accommodate themselves in the space and reveals the "lived space" discussed in the social lens. Other informal social gatherings also leave traces in the space: a beer can, plastic bag, or campfire. The material temporalities, therefore, enhance the understanding of the social appropriation of the space. The temporalities of the material world of leftover spaces further flesh out a "fundamental human need for spontaneous, ephemeral" (Radović, 2014, p. 157). The material temporalities, therefore, enhance the understanding of the social appropriation of the space and provide references for designers to consider how to invite local people to co-produce new forms of social activities in a leftover space.

2.4 Conclusion

In summary, the discussion in Chapter 2 provides a theoretical review on reading the qualities of leftover spaces from multiple lenses and from temporalities. The discussion firstly delineates four lenses—the morphological, social, ecological, and material—to describe multiple qualities of leftover space. Looking from different lenses, the qualities of the space can be interpreted in different ways, and some of these readings might conflict with each other. For example, once we identify a leftover space for animated social activities, the existing ecological condition of this piece of urban wildness will be disrupted. In this way, the discussion highlights the importance of multiple readings as the prerequisite of the design intervention of leftover spaces. In the second part of this chapter, I further discuss temporalities as another important dimension in the designer's reading. This multiple reading not only lets us reconnect the current leftover space to the past and future transformations of this piece of urban territory, but also brings a deeper understanding of the existing spatial-physical conditions of a leftover space.

3 Transforming Interstices

Chapter 2 introduced a series of scholars' observations of leftover spaces with a framework of four lenses, thereby offering a basis for designers to interpret, understand, and analyse the qualities of leftover spaces. Here, I would also like to introduce several case studies of leftover spaces, in order to understand how design may transform leftover spaces and how different design approaches are distinguished from each other in terms of the effects of the design on the site. These projects are collected and arranged according to the degree of openness presented during the process of transforming the site: is the site fixed and regulated with a limited, single type of usage and meaning? Or is it open to appropriation, facilitating its use as an inclusive space for multiple human and non-human visitors?

Eight empirical case studies of leftover spaces are selected in this chapter. These case studies lie on a spectrum of which the two extremes are defined by polar opposite design situations: one is the top-down, superimposed design intervention that can run the risk of fully regulating the site against being appropriated and changed spontaneously; the other extreme is the informal and collective intervention carried out by local citizens, in which the intervention is less permanent, fixed, and controlled, and therefore has greater opportunities to include new practices and processes during the site's transformation, but run the risk of .

The case studies will be discussed in terms of five aspects: 1) the urban and historical background of the site; 2) the leftover situation before the introduction of the design; 3) the reasons behind the design; 4) the design process; and 5) the current situation of the site. After discussing above aspects, I will complete the introduction of each case studies with a summary of the effect of the design: in which terms the design fixes the usage, meaning, and process of the site, and whether the design invites more dynamic processes to take place. In addition to the design projects, to determine the influence of design, a non-designed leftover space, preserved from purposeful human interference, will be presented at the beginning of this chapter.

After reviewing the eight case studies, a matrix is made to annotate the relationship of each to the paradox of design. As addressed in section *1.2.4. The Paradox of Design*, the spatial-physical composition formulated by the designer needs to be explored with regard to the paradox of designing leftover spaces. Therefore, the vertical dimension of the matrix is used to illustrate the architectonic design definition of the spatial-physical composition of the site. The horizontal dimension of the matrix is used for investigating the site's openness during the process of its transformation. The eight case studies are placed in the matrix according to their relevance to these two dimensions. As a result, three cases—Pavilion Valby Smedestræde 2, the Garden of the Third Landscape, and Dalston Eastern Curve Garden—can be regarded as having both architectonic qualities of spatial-physical design composition and an open-endedness in terms of site transformation. Therefore, these three projects are selected as seminal cases for further detailed study.

3.1 The Natural, Collective and Architectonic: Eight Cases of Transformation

3.1.1 Logar de Aguada, Porto (Portugal)

The first project in this chapter, Logar de Aguada, presents a naturally transformed leftover space. The site is located on the middle terrace of Douro's north riverbank, as part of the continuing slope between the river bank and the border of Porto's medieval city centre (Figure 3.1). Hidden from the majority of urban life, the terraced slope is inhabited mostly by wild perennials and incidentally visited by surrounding residents, showing a typical image of the leftover space composed of sprawling wild nature and deteriorated buildings. At the foot of the slope is a major traffic road running along the river, and above the site, on the top of the slope, is a regional railway that once was a historical railway connecting to the harbour of Porto. A small settlement of low-income residents, locally called "Island" (Islands of Porto, n.d.)—a cluster of 10 to 20 houses along a single winding street, can be found next to the rail line, as an interstitial social group between the city centre and the river side.

FIG. 3.1 Aerial Photo of Logar de Aguada
A piece of neglected sloped terrace between the historical city and the river front. Copyright by author, base on map data: 2018 Google, Inst. Geogr. TerraMetrics.

The Terraced River Bank

The name "Logar" (meaning "place" in Portuguese) indicates the mixed usage of farmland and working-class residences. The trade of Port wine and the prosperity of the textile industry brought rapid economic and population growth to the historical Porto. At the end of the 19th century, two rail lines, for transporting goods from the old harbour of Porto, were built over the upper and middle terraces of the site. However, after the relocation of the harbour in early 20th century, the middle train line became defunct (Histórico, n.d.). Following a long period of growth, the city has seen economic decline in more recent decades. The shift in the city's industrial structure has forced the original inhabitants, mostly industrial workers, to relocate elsewhere (da Luz Sampaio, 2017). The relocation of the harbour, as well as other touristic developments in the city, caused the city to turn its back to the river, leaving the site abandoned.

Nature Sprawl

After the site was abandoned, the wild plants reappeared year by year on the slope, knitting through the relics of previous settlements. Spontaneous perennials cover almost the site's entire ground and vertical surfaces. The steepness of the slope makes it hard to access, and therefore curtails frequent human visits. The humid climate, sunny orientation of the slope, and the moisture brought by a small spring coming out of the rocks provide conditions for vegetation growth. Nature has gradually taken over and is slowly transforming the site that was previously used for industrial purposes.

Wildness, Relics, and Waste

The current site presents a mixed material world with wild vegetation, relics of abandoned residences, and the disused track of the previous railway. The wildness and ruin of the site are set in contrast to the functioning railway on top of the slope. Traces of incidental visits of local people can be found here: pieces of food packages, a campfire, an empty box of cigarettes, and abundant graffiti. A fisherman uses the deteriorated set of steps on the site as an informal passageway to the riverside; some teenage gangs visit the site, gathering there to hang about and play their own music. A group of local architects organised tours—the worst tour[9]—to introduce

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[9]   See the webpage of the worst tour: https://theworsttours.weebly.com/.

tourists to this hidden part of Porto (Figure 3.2). In doing so, the organisers express their concerns about the ongoing gentrification of the city. The abandoned slope is not completely unused; the wild perennials flourish here and some local practices, denied in other formal urban spaces, can take place in this space. The abandoned site provides a retreat for marginal social activities and spontaneous growth of wildness, revealing a hidden dimension of the city among everyday urban life and touristic programmes.

FIG. 3.2 Incidental visitors of the site
Teenagers from the neighbourhood school occasionally visit this uncharted part of the city.

TOC

Park Fiction, Hamburg (Germany)

Park Fiction is located on an overgrown slope (called *Geesthang* in German) along the riverfront Hafenstrasse in the St. Pauli district of Hamburg, at the back of St. Pauli Kirche (Figure 3.3). The district of St. Pauli was once the poorest area of Hamburg, famous for its red-light district, interspersed with many gambling houses, different theatres, clubs, pubs, and cafés (Rühse, 2014). Park Fiction is developed with the ideas collected from the surrounding neighbourhood; to address the desires of local residents, the design of the site takes the residents' suggestions as the priority, and as a result, weakly addresses the geometrical, spatial, and historical context of the site. The fragmented spatial organisation prohibits people's full experience of the place, because here one can barely perceive the space as a whole or find the connection between the site and the surrounding urban context.

FIG. 3.3 Aerial photo of Park Fiction
The site itself stands in a hybrid urban context, next to St.Pauli Kirche and the harbour area. Copyright by author, base on map data 2019 Google, TerraMetrics.

Past Informal Uses

For a long time, the site was an empty undeveloped area between the city and the waterfront, blocked from urban public life by the harbour wall, forming a literal interstitial space. Informal uses and activities took place in different parts of the site and further gave names to these unattended spaces; sometimes, the area near the squatter's home was visited by a group of punks with their dogs, giving rise to the name *Hafentreppenhundenpark* [Harbour Staircase Dog Park]. The sloped area was usually used by drunk people, earning the name *Bierdosen-park* [Beer Can Park] (Schäfer, 2004, p. 41).

Local Protest

Since 1990, Hamburg's urban planning has shifted the focus of the city's development to the harbour and riverfront. As a result, the urban spaces behind the old harbour wall have gradually been redeveloped for commercial purposes. In 1995, the city planned to build a massive building block on the site of what is now known as Park Fiction, the volume of which would block the last open view to the harbour. The development was forcefully resisted by several local institutions and groups. The local committee of St. Pauli, the headmaster of the Ganztagsschule primary school, and the St.Pauli Kirche joined together to campaign against the new development plan and instead proposed the use of the site as a public park. The group came up with the idea to use 'art' as a tool to open up local people's imagination to the future of the site, as a collective space for local citizens (Urban Matters, n.d.). Such campaigns and protests were already an intrinsic part of the culture of St. Pauli. Since the 1980s, squatters had occupied unused buildings in the adjacent street, Hafenstraße. To support these squatters, a local community group called GWA (Gemeinwesenarbeit St. Pauli-Süd) was formed and went on to establish a neighbourhood centre near the site of current park.

The planning process of the park contained three parallel actions: the first action was "creating desire," in which exhibitions, shows, and other events are organised in the neighbourhood, raising residents' awareness of the site. In parallel, a design process was launched, using different games to involve local people from different cultural groups and to exchange ideas for the park (Schäfer & Czenki, n.d.). This process not only simply joins people together, but more importantly it motivates people to enthusiastically participate in the creation of the park. The third action was to organise a series of lectures and workshops, establishing the cultural relevance of the park. These three actions address the main principles of the park's creation: to offer equal access to every local citizen and to make the park a product of collective social desires.

The construction of the park took place between 2003 and 2005, with €2.4 million funding provided by the city council (Rühse, 2014). The limited budget meant that the park had to be constructed cost-effectively. The final layout of the park appears as a collage of four individual parts: the Flying Carpet—a raised lawn with a wavy surface; the Isle with Palms—a round grass island with artificial steel palms; the Dog Garden—a space for local dogs; and the volleyball court. Other small areas of the park include: Bamboo Grove of the Humble Politician, Boule Field Abolition du Travail Aliéné, the Tenant Gardens, and the Tulip Patterned Tartan field. These park components are all collectively made by local people, for example, the Isle with Palms is made according to a little girl's painting of a park abundant with palm trees.

A Public Space with Cultural Value:

Since its construction, the park has been used for holding a variety of artistic and democratic events. The first was the international congress in 2003 named "Park Fiction presents: Unlikely Encounters in Urban Space" (Park Fiction, n.d.). Besides these events, the park is also a place for everyday use; the weaving surface of flying carpet invites people to have picnic on a sunny afternoon and dog owners congregate with their dogs in the dog garden. The small size of the park does not hinder its potential to offer varied forms of recreational activities, with its playful, imaginative spatial elements. The atmosphere of the park reflects the vigorous social character of St. Pauli (Figure 3.4).

FIG. 3.4 Park Fiction
Park Fiction offers a nearby public space for the local residents, with an expanded view of harbour.

The effect of the design

The design opens the leftover space up for new social practices and further empowers local people to express their desires and concerns. The park manifests local collective practices and desires, revealing the representational space discussed in Lefebvre's social theory. From this perspective, the design facilitates the potential of the leftover space to be used for democratic, grassroot social practices. However, when opening the leftover space for this specific social agenda, the design overlooks other spatial, morphological qualities of the site, resulting in a spatial collage of individual thematic areas. The park in itself was designed as a local protest against the entering of commercial development to the local area. However, beyond this singular social meaning, other narratives of the site, including its urban context and historical transformations, can hardly be perceived. From this perspective, although the design functionally satisfies the desires of local people, it detaches the site from its urban, historical context and does not adequately facilitate the continuous social engagement of the site.

3.1.3 PROEFtuin, Delft (Netherlands)

PROEFtuin is an interim urban agricultural garden that occupies a temporarily vacant space. The land is belonging to the project Spoorzone of Delft—the redevelopment of the railway and surrounding area for new housing apartments, an urban park and underground railway tunnels (Figure 3.5). The spatial design was produced by an architect and a permaculture practitioner. Workshops with surrounding stakeholders and residents were held during the design process to generate suggestions and contributions to the design. While the design responds to the collective interests of multiple stakeholders, the final design of the garden is nothing more than a mediocre agricultural site, compacted with planting beds and pieces of agricultural amenities here and there.

FIG. 3.5 Aerial image of PROEFtuin
The agricultural garden occupies two temporary un-occupied spaces belonging to the Spoorzone project. Copyright by author, base on map data 2016, Google, Aerodata International Surveys, Aerodata Survey& Gemeente Westland, CNES / Airbus, Landsat / Copemicus, Maxar Technologies..

An Interim Space of Spoorzone:

The site forms part of an industrial zone close to the historical harbour of Delft and adjacent to the railway of Delft. Previously, the industrial zone was occupied mainly by warehouses that store the goods from waterway transportation. Now the area is occupied by mixed urban programmes, including several residential buildings, rows of low-rise offices, and a cluster of logistics and industrial warehouses.

The site was also used for warehouses and the parking of logistics trucks. In 2009, the municipality of Delft launched a project called Spoorzone that aimed to construct two underground railway tunnels, releasing the land above, which had been used for the previous railway, for the development of a new city district with apartments, a park, and a new scenic canal.[10] The site forms part of this development zone, for which new apartment buildings are planned to be built in the future. During the interim period in which it remains vacant, the empty space has partly been used for storing construction materials and has partly been left as open ground.

The Temporary Agricultural Garden

In 2014, the social foundation of Groenkracht in Delft noticed this vacant space – easily accessible, close to several residential areas, and currently unoccupied. Groenkracht proposed to the municipality of Delft that they temporarily appropriate the site as a communal agricultural garden (Groenkract, n.d.). The group had already launched several small urban agricultural projects in and around Delft, all of which are community projects. Through organising activities such as gardening, shared food production, and seasonal festivals, the gardens encourage interactions between local citizens and foster a sense of a community for its participants.

After the proposal of the garden was approved by the municipality of Delft, architect Rutger Spoelstra, who was a member of the Groenkracht, took charge of the garden's design. The environmental experts from the municipality assisted Spoelstra in examining the soil, water, and wind conditions of the site. A permaculture expert joined the design process and arranged that the garden be planted in accordance with permaculture principles. The initial plan was negotiated with the manager of Groenkracht and other interested groups including the representatives from surrounding residences and business owners. The feedback generated from the

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10   See the map of urban development of Spoorzone from: https://media.xkp.nl/PZH/nieuwdelft/.

workshops informed revisions of the initial design of the garden: more spaces for social activities were added to the original design layout, including a gathering space with a large working table, a round semi-enclosed sitting area with benches, and a small lawn that offers a space for outdoor sports and yoga. The construction of the garden started in February 2015 and was accomplished with the help of volunteers. In May 2015, the garden was opened to public. After running for two years, in 2017, the south part of the garden was removed for the planned housing construction, and in 2018 the north part of the garden was demolished (Figure 3.6).

A Social Green Oasis

While a major part of the garden was used for growing vegetables, public activities were regularly organised as well, including educational guided tours, yoga workshops, and gardening workshops. Besides the planned social events, residents from the adjacent buildings were able to visit the garden and use it as a daily meeting place. The planting area was developed according to the principles of permaculture, to support the sustainable production of food by fully utilising the synergies between plant species and the site's own ecological conditions. The whole garden presented a semi-wild image, as a unique green oasis in its hybrid urban context. Some agricultural parcels were owned by individuals who paid for the planting bed, while other parcels were cultivated collectively by the volunteers. The food produced in the volunteer's parcel was given to people who paid a monthly subscription to the garden's production and any extra harvest was taken by volunteers themselves. This subscription system considerably prioritised the functional production of the garden, resulting in the site being less flexible and less open to a wider range of social interactions. The whole garden was managed by permaculture practitioner, Marijtje Mulde, who oversaw the growth of vegetables, designed the seasonal planting scheme, socialised with volunteers, and organised events with the participants of the garden (Groenkracht, 2016). Following the initial period after the opening of the garden, the subscription scheme turned out to be not as successful as expected; there were not enough people willing to purchase a planting bed and Mulde needed to improvise the usage of planting parcels. Over the lifetime of the garden, Mulde had an important role in the garden's management, and because of this management, specific strategies were employed that responded to the changing conditions of the site. In this way, the garden became more and more a unique place with its own identities, developing beyond the general urban agricultural site it had been when it was newly established.

FIG. 3.6 Before and after the implementation of the design
The agricultural garden also provided an intimate green space for the neighbourhood. Copyright 2015 by R. Spoelstra.

The Effect of Design

The design exploits the site's interstitial situation as an interim space, and opens the site for social participation with a specific programme of urban agriculture. The design approach represents a popular practice in today's urban design discipline that promotes the temporary use of vacant urban spaces with bottom-up social, community activities. However, on evaluating the effect of the design, it becomes clear that the design focuses much on supporting new social usages of the site, while the spatial, compositional aspects of the design tend to be overlooked. Because the design process is guided by a motivation to incorporate different social groups, the formal, compositional aspects such as unity and coherence are subordinated. At the same time, the design only opens to a specific social group, in this case the participants of the agricultural garden. Other citizens are allowed to enter the garden but they lack the agency to use the space in their desired way, or with more creative ideas.

Pavilion Valby Smedestræde 2, Copenhagen (Denmark)

Pavilion Valby Smedestræde 2 is a small courtyard located on the corner of two streets, Smedestræde and Valby Langgade, in the neighbourhood of Valby. Smedestræde is a historical street in the old village centre, characterised by its winding path and small yellow houses (Figure 3.7). On the adjacent side, the site is screened off from Valby Langgade, the main street of the old Valby village, by a row of boxwood. The design is a temporary public project that initiates different social events on-site in order to test the social potential of this site. The design was initiated by Valby Local Committee and created by architecture research team SEEDS (Wagner, 2018). The design process did not involve any input from local people, but it effectively engages local people with a pavilion with a symbolic, open structure. After Valby Local Committee stopped hosting social events on site, Nima Alijani, a self-employed person, took over the use of pavilion as an outdoor bar during the summer months. This unexpected social usage can be considered as an outcome afforded by the pavilion designed by the research team. The white, open pavilion, by marking the vacancy of the site, offers a starting point for other social appropriations of this site.

FIG. 3.7 Aerial view of Valby Pavilion
Aerial image of the site when TH Bar took over the pavilion in 2015. Two containers were brought to the site in addition to the original pavilion constructed by the design team. Copyright by author, base on map data 2019, Google, TerraMetrics.

A "Hidden" Courtyard

The site had previously been occupied by the car dealer Autospar, and comprised a front yard and a back yard. The front yard was used as parking space while the car dealer's office building and workshop space stood in the back yard (Wagner, 2016). In 2012, the car dealer ceased leasing the site. The vacant site was set in contrast to its urban context; directly adjacent to the site is the hustling street of Valby Langgade that still serves as an important traffic connection between Valby and the city centre of Copenhagen. A large number of pedestrians passed by the site, but hardly anyone paid attention to the empty space. This may be because the site lies a little lower than street level and is screened by thick bushes, bringing to the site a hidden character. Furthermore, on the fence of the site there were signs prohibiting entry to people, set by the municipality, which further reduced the chances of other potential social appropriation.

Reserving the Site

In 2013, a commercial developer took notice of the advantageous location of the site and made a proposal to the city council that the site be purchased and a supermarket built on it. This proposal was rejected by the Valby Local Committee—a local organisation that works as an intermediary between local people and the central government of Copenhagen, communicating local issues to government decision makers. The local committee proposed to use the site as a cultural centre for local residents. With the efforts of Valby Local Committee, the sale of the site was halted and it awaited decisions as to its future. To test the social-cultural potential of the site, the local committee was granted a temporary lease of the site in 2013, allowing them to initiate temporary public events on site (Valby Lokaludvalg, 2013).

Temporary Social Events

To imagine new forms of public participation, the Valby Local Committee worked with the research group SEEDS (the University of Copenhagen's research project that facilitated temporary uses in city spaces) to search for possible interventions. The research team decided to first open up the front yard and a white pavilion was installed, a structure to symbolise the openness and welcoming of the site. The overgrown bushes were trimmed and a new entrance was made to the side of the urban main street. A blackboard was brought to the site, with the unfinished sentence "In Valby I dream about" to invite the public to write their own ideas about the future of Valby (Wagner, 2016). The site was opened to the public in the summer of 2013, on Valby's

cultural day. Facilitated by the organisation of the committee, different temporary public events took place in and around the pavilion, including urban agriculture, book exchange, and it was also used as a recycling station (Figure 3.8).

FIG. 3.8 Before and after situation of the design of the pavilion
The temporary social events occupy the empty courtyard with a piecemealed spatial setting. Top: from: Wagner, A. M. (2016). *Permitted exceptions. Authorised temporary urban spaces between vision and everyday*. University of Copenhagen. P. 76. Bottom: Copyright 2014 by H. Palsmar.

Summer TH Bar

In 2015, public interest in the social activities organised on-site waned, which left the local committee discouraged and ultimately resulted in their withdrawal from the site. As it so happened, it was at this time that Nima Alijani passed by the once-again vacant site and conceived an idea to open an outdoor bar there. The bar was opened in summer of 2015 and quickly attracted a large number of visitors. Local people enjoyed meeting in this garden-like space on sunny summer afternoons and enjoyed the refreshment of an affordable beer. While the site plays host to TH Bar in the summer, for the rest of year the site returns to being a leftover space. The space is stacked by the piecemeal furniture and containers from TH Bar and crowded with wild vegetation. From this perspective, although the site is occupied by a specific programme—the TH Bar—throughout the summer, it does not completely preclude the site from hosting other social-ecological processes.

The Effect of Design

The design of the intervention opens the site up for diverse, undefined social activities, avoiding any fixed definition of the site. Because of this, the site could be later occupied by TH Bar in the summer. However, along with the annual operation of TH Bar, with the bar's amenities gradually increasing over time and occupying the courtyard space, the morphological, material, and ecological aspects of the site were somehow influenced; it became hard to perceive the relationship between the site and the Smedestræde, and wild perennials were left with little space to grow. People recognise this site as a special place in Valby only because of the popularity of TH Bar, but they barely engage with the site's other historical and spatial identities.

The Garden of the Third Landscape, Saint-Nazaire, France

The Garden of the Third Landscape is an art installation comprising three separate gardens on the roof of a disused submarine base in Saint-Nazaire—a French town in the estuary region of Loire River (Figure 3.9). The design intends to initiate spontaneous ecological process within the harsh conditions of the site. Although the layout of the garden is designed with an expressive architectonic language, the subsequent process of the site's transformation is left to be guided by nature. The design intervention was minimal, treating only the aspects most necessary to provide the ecological conditions for the growth of species that could adapt to the harsh living conditions. Besides functionally satisfying the requirement of ecology, the garden's composition punctuates the existing defence structure of the roof. Similar to the case of Valby Pavilion, albeit in a more explicit manner, the initial design prepares a foundation for open-ended site transformation; the design does not intend to fully define the becoming of the site.

FIG. 3.9 Aerial image of the site
The design established three gardens in three zones of the submarine base's roof, exposing different layers of the defence structure. Copyright by author, base on map data: 2018, Google, TerraMetrics.

The Harbour and the Submarine Base

The harbour of Saint-Nazaire was once one of the largest harbours along the Atlantic coast of France. During the Second World War, in 1940, the German Army arrived at Saint-Nazaire and a submarine base was built at the harbour for military operations (Saint Nazaire Tourisme, 2019). When the war ended, use of the military structure stopped but its heavy concrete construction made demolition impossible. In the urban restructuring plan of 1946, urban development was guided in an east-west direction, resulting in the harbour area and the submarine base gradually becoming the back side of the city. On the roof of the submarine base lies a distinctive defence structure composed of a four-metre-thick concrete plate plus an array of concrete walls and beams on top, which reach a height of seven metres in total. The structure creates a hollow space, designed to relieve the force of a bomb dropped upon it (U-Boat Bases, 2019).

Estuaire

In 2007, the cultural institution, Le Voyage à Nantes, of the city of Nantes – an adjacent provincial city of Saint-Nazaire – launched a biannual art exhibition programme called *Estuaire*. Art installations were placed in the two cities and along the river corridor in-between, to invite visitors take the linear tour and to explore the estuary landscape. In this way, the programme would activate the connection between Nantes and Saint-Nazaire. The project of the Garden of the Third Landscape is part of the collection of Estuaire, belonging to the second edition of Estuaire in 2009 (Saint-Nazaire Roof of the submarine base. LE JARDIN DU TIERS-PAYSAGE Gilles Clément, 2018). Landscape architect Gilles Clément was invited to make a public garden on the roof of the submarine base. Responding to the spatial character of the defence structure, Clément designed three gardens on the roof, exposing layers of the defence structure to the visitors of the project.

The Gardens

For the first garden, the *Le Bois des Trembles* [Garden of Aspen Woods], 107 Aspen trees were installed in the area of the hollow chamber, where the third layer of the defence structure was completed. When the wind blew, the sound of Aspen leaves would represent the trembling moment of the airstrike on the submarine base. In the second garden, *Le Jardin des Orpins et des Graminées* [Garden of Stonecrops and Horsetails], the spaces between the thick concrete walls were filled lengthwise with shallow planting beds. The third garden, *Le Jardin des Étiquettes*

[the Garden of Labels] is founded in a sunken pit within the area of the open concrete surface. The design added a thin layer of substrate in the sunken space and let the wind, birds, and the visitors deposit seeds. Every six months, the new plants would be labelled by the students from local agricultural high school[11] (Figure 3.10).

FIG. 3.10 The Garden of Stonecrops and Grasses (top) and the Garden of Labels (bottom), 2018.
Following 6 years of establishment, and with little maintenance, the two gardens have gained a wilder profile,

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11 Please find the project description from the office COLOCO: *Jardins du Tiers-Paysage*. Available at: http://www.coloco.org/projets/jardins-du-tiers-paysage/.

A Touristic Destination

The gardens were open to the public between 2009 and 2012, and were mainly known to visitors of the Estuaire programme. The basement of the submarine base was redeveloped by the Saint-Nazaire municipality with cultural programmes including a museum, an art gallery, and a concert room (Oliveres, n.d.). However, there is little information in the basement about the gardens on the roof. A giant ramp was made to allow people to access the roof directly from the square in front of the submarine base, and as a result, it separates the basement and the roof from the entrance point. For these reasons, the roof mainly serves as a touristic destination for more distant visitors but local people do not actively engage with it on a daily basis.

The Effect of Design

The design creates a basis for spontaneous ecological transformation in a leftover space, and further uses its architectonic language to manifest the aesthetics and narratives of both the military relic and the newly established biotope. Before the design intervention, only scarce rock plants, with the ability to adapt to the harsh living conditions of the roof, could be found in the shaded areas or in the cervices of the concrete. In this regard, the design responds to and brings more dynamics to the ecological conditions of the roof. Nevertheless, the focus of the design is on ecological aspects. While creating the opportunity for the site to be transformed by nature, social engagement with the roof is not fully addressed in the design of the garden.

Dalston Eastern Curve Garden, London (United Kingdom)

Dalston Eastern Curve Garden is a communal garden located at Dalston Centre, Hackney borough, in the east region of London. The garden was established by transforming a linear piece of vacant land that was previously occupied by the track of the North London Railway line (Figure 3.11). The design intervention was a pilot project in an urban design study named *Making Space in Dalston* (muf architecture/ art & J&L Gibbons, 2009). Because of this, the design was established on the basis of a deep understanding of the local spatial, social, and cultural context. The design process invited local people to express their opinions, while the designer had the final say on the eventual layout of the garden. The resulting garden has a coherent, integrated spatial layout and emphasises the spatial and geometrical characteristics of the site (jlg-london, n.d.). Although the departure point for the design is the transformation of the leftover space into a communal social space, the design does not neglect other qualities of the site; it simultaneously integrates the site's existing wild species, its material world of lush vegetation, and its linear morphology. Furthermore, the work of the two managers of the garden sustains the garden's openness to include different social groups and diverse cultural activities.

FIG. 3.11 Aerial photo of the site
The garden took over the leftover linear space previously occupied by North London Railway line. Copyright by author, base on map data: 2018, Google, Bluesky, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group.

North London Railway Line

Since the 1860s, the site had been used by North London Railway line, as part of the railway network transporting goods from the Thames dockland to the inner city of London and the north region. In the early 1920s, the North London Railway line was closed due to the relocation of dock area and competition from road traffic (Connor, 2000, pp. VIII-IX). In 1965, the railway track was removed from the site and the disused site became like a back yard, hidden from the public realm ("Dalston Junction Railway Station," 2020).

Making Space in Dalston

In 2010, with the support of Hackney Council and Design for London foundation, design studios muf architecture/art and J&L Gibbons conducted a public space study of the Dalston area called *Making Space in Dalston*. The project explored Dalston's cultural identity and the potentials lying in the public realm. Ten themed projects were proposed as the result of the study, of which the Dalston Eastern Curve Garden was one. The initial design proposal for the site was an eco-garden, inspired by the raw nature that grew in the abandoned context of the site. However, the first open-up event held on the site—a Barbican art exhibition—manifested the potential of the site for other social uses. As a result, the site was finally developed as a collective public space for the neighbourhoods (muf architecture/art & J&L Gibbons, 2009). J&L Gibbons designed the final layout of the garden, and in 2010 the garden was opened to the public (Figure 3.12).

A New Gathering Space

In 2019, following nine years of growth and establishment, the garden has gradually tightly integrated into the surrounding neighbourhood. The garden is a community space but opens to the wider public. Local residents use the garden on a daily basis while other visitors come from more distant districts of London. The garden's success cannot be separated from the management of its two managers, Marie Murray and Brian Cumming, who manage the day-to-day running of the garden and organise diverse cultural events with local artists. In 2012, after the garden's initial funding had ceased, a café was opened to support the operation of the garden. The café helped the garden to serve as a better gathering space for the general public. The atmosphere of inclusivity and dynamic cultural and social events make the garden a unique social space in Dalston.

FIG. 3.12 Before and after the design of Dalston Eastern Curve Garden
Transforming the previous hidden backyard into a communal garden, the design preserves the green identity of the site, a secret world in Dalston's centre, with a lush image of nature. Copyright 2010 by J&L Gibbons (top), Copyright 2018 by author (bottom).

The Effect of Design

The design transformed the leftover space into a community garden that celebrates the cultural identity of Dalston. Now the garden is officially acknowledged by Hackney Council as a valuable outdoor gathering place for local people (Hackney Design, 2016). Different from the Gardens of the Third Landscape, the design of Dalston Eastern Curve Garden does not intentionally prepare the site to be transformed by unexpected social practices. The design simply introduced a communal garden to the leftover space. However, different social practices took place inside the garden, which made the garden an increasingly unique place because of the everyday engagement of the two managers. One of the crucial values of the design is that it invites and encourages the two managers to continuously be involved in the garden's transformation process. At the same time, the design emphasises multiple qualities of the leftover space; it responses to the social, ecological, morphological, and material qualities of the site. As a result, the design offers a strong sense of place and encourages more social participation within the site.

The High Line Park, New York (United States)

The High Line park was once a 2.33-kilometre abandoned railway viaduct, located in the neighbourhood of Chelsea on the west side of Manhattan (Figure 3.13). A local group, Friends of the High Line, recognised the valuable memory of the viaduct and proposed to preserve this industrial structure by transforming it into a public park. Following a campaign by the group, the project finally gained the political support of the New York government (David, 2002). The design of the park was undertaken by a cooperation of professional architects, landscape architects and garden designers. The park has an elaborate design scheme, with a continuous pathway through the middle and strips of planting spaces on the two sides. The railway track from its previous use was preserved. In this way, the park represents the spatial and historical characters of this linear viaduct. However, because of the top-down, formal design approach, and because of its entanglement with local political agenda, the park became a landmark design project for the renovation of industrial heritage. As a bustling touristic destination, the park is drastically detached from its surrounding neighbourhood.

FIG. 3.13 Map of the High Line park's first and second sections
Linear pathway and planting beds with ruderal perennials were brought to the roof of the industrial viaduct, offering an elevated green pathway meandering through the neighbourhood of Chelsea. Copyright 2009 by Friends of the High Line.

Past Industrial Viaduct:

The High Line viaduct – previously the southern component of New York Central Railroad's west side line – was a transportation route used for the delivery of milk, meat, produce, and raw manufacture goods to the workshops in Chelsea. After the 1960s, because of advancements in national trucking, the viaduct line gradually became less necessary and stopped running altogether in 1980 (David, 2002, p. 11). From then on, the viaduct was abandoned, left as an obsolete structure inserted in the surrounding urban tissue. With the rail track no longer being occupied, and because of the high elevation of the viaduct and its infrequent use by local people, wild perennials started to flourish on this industrial heritage.

Friends of the High Line

In 1999, the non-profit organisation Friends of the High Line was established by Joshua David and Robert Hammond who are the residents of the High Line neighbourhood. David and Hammond were inspired by the charm of this industrial relic, which exhibits a combination of wild nature and deteriorated artifice. Appreciating the value of this derelict industrial asset, they advocated to the government and the local public for its preservation and regeneration as a public park. In their proposal, the railway viaduct would become an elevated park or greenway, similar to the Promenade Plantée in Paris (David, 2002, p. 20).

The Political Support

Friends of the High Line started their campaign with an investigation of the viaduct's social value, historical narratives, and architectural characteristics. From 2001 to 2004, Friends of the High Line lobbied politicians and social celebrities to run a campaign to keep the High Line as a residential park. Their activities gradually raised social awareness and gained support from New York government. In 2004, the government of New York invested $50 million in the High Line project. In 2006, Mayor Bloomberg announced the beginning of the park's construction. The park was designed by landscape firm James Corner Field Operations, with the cooperation of architects Diller Scofidio + Renfro and Piet Oudolf. Dutch planting designer Piet Oudolf took charge of the park's planting design. After a design and construction period of three years, the first section of the High Line opened in 2009. The second phase opened in 2011. In 2014, the third section of the park was completed. In this last section, the design preserves the wild plants on-site, in response to the growing criticism of the refined and stylish design of the first two sections.

A pathway was added alongside the wild plants, to let people enjoy the authentic beauty of this rustic nature on the industrial relic (Figure 3.14).

FIG. 3.14 Before and after the design
While transforming the viaduct into a public park and replanting a large number of perennials on site, the previous ruderal ecology was completely removed, and the rusty image of the derelict site can no longer be traced. Reprinted from Reclaiming the High Line, Design Trust for Public Space, Inc. (p. 10). Copyright 2002 by C. Jones & J. David (top); Copyright 2009 by Sebaso (bottom).

Gentrifying the Neighbourhood

Nowadays, the High Line park is not only a linear urban green space but also a must-see landmark for tourists visiting New York. Five million visitors were reported in 2014 (Moss, n.d). The success of the High Line park quickly drove up the value of the surrounding land in the neighbourhood. Between 2003 and 2011, the property values near the park were twice as much as they had been previously. The transformation of the High Line consequently gentrified the surrounding neighbourhood; with the increase in rental prices, the owners of small manufacturers and the tenants of cheap apartments were forced to move out. Together with the neighbourhood rezoning, the plots alongside the High Line attracted a large number of real estate developers. The area is now clustered with new galleries, salons, hotels, restaurants, and high-end apartment buildings.

The Effect of Design

The design renovated the previously inaccessible, abandoned industrial viaduct and transformed it into a public space, and in doing so created a new landmark of New York. The design intervention on the site further triggered the drastic gentrification of the neighbourhood surrounding the High Line. From the perspective of social usage, the design is valuable in the way in which it re-opens the site for the use of a larger public group, and allows people to appreciate the unique identity of this industrial relic. However, with a set of refurbished and stylish outdoor furniture, pavements, and planting, the charm of the previous rusty industrial relic and the spontaneous wildness is hardly traceable. Local people no longer feel an attachment to the site. From this perspective, the design eliminates many material and ecological qualities of the site, and the indeterminacy of the leftover space no longer exists.

Paley Park, New York

Similar to the High Line park, Paley Park is also a formally designed urban public space. The design has a coherent architectonic composition; it transforms an interstitial slot between skyscrapers into a well-defined enclosed space with honey locust trees, ivy climbing walls, and a waterfall at the back of the space. The design, with its formal language, articulates the site's multiple contexts and characteristics: it preserves the site's previous condition as a slot opening to the sky as an intimate enclosed space, and with the lush ivy wall and water fall it provides an image of the primitive nature of Manhattan island. As an urban pocket park, the park offers a freely accessible resting place that is a rarity in the downtown area.

FIG. 3.15 Aerial photo of the Paley Park site
The site is an interstitial slot, its form and its dimensions are directly defined by the orthogonal urban grid of Manhattan. Copyright by author, base on map data: 2019, Google, TerraMetrics.

A Slot in Manhattan's Urban Grid

The location of the site is at 5 East 53rd Street in Manhattan, New York, a part of the systematic orthogonal grid of the urban district (Figure 3.15). The site was once an upper-class night club—the Stork Club—in the past but it had stopped running by the 1960s (The Cultural Landscape Foundation, n.d.). The small plot constitutes a network of many interstitial spaces in the Manhattan urban grid. These interstitial spaces embody various forms: urban courtyard, entrance court, public garden, plaza, parking lot, or private garden or terrace (de Wit, 2014, pp. 215-222). The shape of these interstitial spaces is not self-defined, but takes a negative form that is shaped by the surrounding building blocks.

A Memorial for William Paley

The construction of the park was sponsored by William Paley, the chairman of CBS broadcasting group at that time. William Paley was searching for an opportunity to build a memorial for his deceased father. In 1963, he came by an exhibition of the pocket park designed by Zion & Breen Associates. The exhibition presented case studies of Zion & Breen's design experiments for small-scale urban parks, which was a new perspective to the park design which at that time that only favoured parks larger than 12,000 m^2 (de Wit, 2014, p. 68). Inspired by their proposals, Paley decided to build a pocket park as the memorial. The park is privately owned but remains open to the public during the day.

A Prototype of Urban Pocket Park

Paley purchased the site of the Stork Club in 1965 and demolished the original building on the site for the construction of the park. The landscape architect Robert L. Zion was responsible for the design of the park. Zion adapted one of his proposals made for the pocket park exhibition for the design of Paley Park (De Wit, 2014). The most significant change he made was to elevate the ground level of the site above street level by a few steps, thereby slightly separating the central space from the street and enhancing the space of the park. The park was constructed and maintained with funding from the William S. Paley Foundation and was opened to the public in 1967.

Neatly Maintained Rest Place

Today, having been first opened to the public over 50 years ago, Paley Park still serves as a public pocket park in downtown Manhattan. The design components— the waterfall, the honey locust tree, the wall with climbing ivy, and the table and chairs—are all maintained as per the original design. Visitors to the park are both local people and tourists. For tourists in particular the park provides a freely-accessible, tranquil place in the downtown district, where they can have a rest or a lunch break (Figure 3.16).

The Effect of Design

The design changed a disused urban slot into a public space with a coherent architectonic composition. The site is regulated with a specific range of users and activities; hence, it does not provide an open-endedness to the site. However, the design, with its articulated spatial form and images, opens up visitors' interpretation of the site. The well-defined space, and the references in the space, reflect upon the geographical and urban context of the site, allowing people to identify this site as a specific place. In this way, the design provides the previously unengaged, unattended leftover space with a strong sense of place that allows visitors to form attachments with the site.

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View of Paley Park
With the enclosure of the ivy wall, waterfall, and the canopy of honey locust trees, the design transforms the interstitial slot into a defined place of intimacy and nature. Copyright 2015 by S. Siklo.

3.2 Natural / Fixed & Non-designed / Architectonic: A Matrix

Reviewing the above case studies, a matrix is formulated to illustrate each project's relationship to the paradox of design. The matrix contains two dimensions. The horizonal dimension describes the transformation process of the site after the design implementation and the vertical dimension analyses the spatial-physical design composition that the design proposed for the site.

The horizonal dimension is divided into four categories: 1) the natural process; 2) the prepared open-ended process; 3) the incidental open-ended process; and 4) the fixed/regulated process. The natural process means that the site is fully transformed by natural agencies, without artificial interference. The prepared open-ended process means that the site is designed, but the design intervention intentionally sets a foundation for dynamic processes to take place afterwards; the outcome is loosely defined. The spontaneous open-ended process means that the design intervention of the site does not intentionally work with an open-endedness. However, certain spontaneous processes may still take place during the site's transformation because of certain informalities in the design or the influence of unexpected human or non-human actors. The fixed / regulated process means that the design thoroughly defines the intended outcome of its intervention, deliberately fixing or regulating the function, meaning, and use of the site.

The vertical dimension, annotating the spatial-physical composition of the design, is divided into three categories: 1) the non-designed; 2) the scattered, function-driven design; and 3) integrated spatial-physical composition responding to existing spatial, geometrical characteristics of the site. The first category, the non-designed, means that the spatial-physical properties of the site are not organised by the design but change as a result of spontaneous processes taking place on the site. The second category, the scattered, function-driven design, means that the design proposes a new set of spatial-physical changes to the site, but the formal-compositional aspects of the design do not fully acknowledge the existing geometrical and spatial conditions of the site. This type of design is usually produced collectively, with local stakeholders and residents, as the result of participatory design, and lacks architectonic qualities in its composition. While in the third category, the spatial-physical composition of the design is formulated based on fully understanding the existing site's spatial, geometrical characteristics: the scale, the geometry, the enclosure, the pattern, the proportion, etc. Additionally, deriving from those existing

characteristics, the design generates a new composition for the site as an extra layer to the existing. The designed form is not superimposed, but gives expression to the existing site.

Explanatory Matrix of Eight Cases
The matrix explaining how each case study relates to the question of the paradox of the design. The horizontal dimension addresses the process of each site after the design implementation, and the vertical dimension describes the spatial-physical composition of the site.

The matrix that results from organising the eight case studies is illustrated in Figure 3.17. Logar de Aguada, as a naturally transformed case study, is located in the top-left corner of the matrix. Paley Park and the High Line park's designs respond to the existing site's geometrical and spatial characteristics; Paley inverts a slot between two skyscrapers that opens to the sky into an enclosed space, and the High Line park uses the linear morphology of the viaduct as a compositional principle for the whole park. However, both designed spaces provide little opportunity for their appropriation by different human and non-human agencies. Therefore, these two case studies stand at the bottom-right corner of the matrix. PROEFtuin and Park Fiction are collectively designed with local residents and stakeholders, and the designed layouts of the two spaces present a collage of different functional / user-required programmes that lack spatial integrity, narratives, and expression of specific places. Both cases allow spontaneous social practices to take place with

Park Fiction being open to more diverse users and social activities than PROEFtuin. The programme in PROEFtuin focuses on agriculture and social gathering events are organised often within the group of volunteers. Other social-cultural activities are organised but the frequency and the variety of these activities are limited. The design of Valby Pavilion does not produce a new composition for the whole site but focuses on the establishing the pavilion. However, the design of the pavilion itself addresses the diagonal line in the site's geometry, and the shape of the pavilion represents the profile of historical houses in the neighbourhood. The design of the pavilion shows a sign of welcoming and provides a stage for different social activities to take place. For Dalston Curve Garden and the Garden of the Third Landscape, both designs deliberately respond to the geometrical and spatial characteristics of the site and the designed spaces resultingly express to people the specificities of each physical place. For Dalston Curve Garden, the design does not intentionally facilitate open-ended transformations—unlike the Garden of the Third Landscape—though the practice of the two managers allows for dynamic social, ecological, and material changes in the garden. The three cases standing in the lower middle of the matrix can be recognised as holding both the qualities of spatial-physical design composition and spontaneous site transformations. From the analysis of these three cases, valuable design approaches and instruments could be explored for engaging the indeterminacy of urban leftover spaces. In the following chapters, Chapter 4 Pavilion Valby Smedestræde 2, Chapter 5 The Garden of the Third Landscape, and Chapter 6 Dalston Eastern Curve Garden, detailed studies of these three seminal cases are presented.

4 Pavilion Valby Smedestræde 2

4.1 Introduction

As a leftover space alongside the sidewalk of the bustling historical urban main street of Valby—Valby Langgade—the courtyard at Smedestræde2 is simultaneously evident and hidden. The site's location is in the public realm, but at the same time, its ground level is two steps lower than the sidewalk and it is screened off by a row of thick bushes with a sign claiming that the site is privately owned.

As one of the closest districts to the city centre of Copenhagen, Valby has witnessed remarkable growth in recent years. There are increasing commercial and economic activities in Valby, and therefore Smedestræde2, as an empty, unused courtyard, is contested by different businesses ranging from retails, bars, cafes, and resultants. To safeguard the site from being occupied by commercial purposes, Valby Local Committee (Valby Lokaludvalg) strived to propose alternative cultural usage of the site. The first step was to initiate temporary public events on-site and test its social potential. To do so, Valby Local Committee established a collaboration with the UCPH SEEDS research team[12]. The UCPH SEEDS team took the site as a pilot case to bring forward concepts, methods, and potential working approaches for temporary uses of the vacant urban site. Therefore, the project is a research-based intervention, using the method of research-by-design that tests the social potential of this vacant site

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[12]   SEEDS (Stimulating Enterprising Environments for Development and Sustainability) is a transnational project funded by the EU Interreg IVB North Sea Region Programme. University of Copenhagen (UCPH) is part of the research team among five partner countries. The research interest of SEEDS concentrates on supporting temporary use of vacant land and buildings, described by Anne Wagner: "to test the integration of temporary use and re-utilization of vacant space into official policy making and to find innovative ways to bridge short-term and long-term development perspectives in urban planning."

(Lamm & Wagner, 2016). The research team conceived the design intervention —a white pavilion in the front yard as a marker that brings the hidden courtyard back into the public view. The establishment of the white pavilion played an important role in setting a new direction for the transformation of the site. After the ceasing of temporary usage for public events, local citizen Nima Alijani passed by the courtyard and came up with an idea to use the empty courtyard and the white pavilion as an outdoor pop-up bar. The bar was unexpectedly successful, and became an adored social space in the neighbourhood (Figure 4.1).

FIG. 4.1 TH Bar opening in 2018
Opening during the summer, the temporary outdoor bar was an animated social place in the neighbourhood. Copyright 2018 by N. Alijani.

Valby pavilion reveals the design potential emphasised in the social lens. The white pavilion serves as a platform for various public activities, as a claim of the site's vacancy, and as a symbol of invitation. Without those expressions, the public wouldn't consider themselves as eligible to use the site.

Apart from designing with the site qualities in the social lens, the analysis of this case study demonstrates that the design could engage with the morphological, social, and ecological qualities of the site in a more deliberate manner. Because a new housing project is planned for the site in the future, it means the design intervention can only be temporary and provisional. For this reason, the intervention dominantly focuses on activating the social value of the site whereas it was not supported to fully address the existing spatial, material characteristics pertaining to this leftover space – what makes this site a unique spot in the neighbourhood. The division between the white pavilion and the rest of the site can be considered as the reason for the missing aspects of TH Bar: social gatherings became a dominant programme of the site, prohibiting other diverse forms of social activities that might have introduced new energy that would allow the courtyard to become a lively social place in the long term.

The social discourse of this case has been discussed in depth in Anne Wagner's doctoral thesis *Permitted exceptions. Authorised temporary urban spaces between vision and everyday* (Wagner, 2016). Wagner was a researcher in SEEDS project and was involved in the design of the pavilion. Her study of the project gives detailed information on the site transformation, from a leftover space to a temporary public space, and to the takeover of TH Bar. Wagner's thesis serves as first-hand information for my analysis. In April 2017, I visited the site for four days and reviewed detailed aspects of design with Wagner. I also interviewed Henrik Palsmar who is a member of Valby Local Committee, and a participant in this project. At the time of the project, the committee was still negotiating with the city council about the site's future. From the interview, I gained a deeper knowledge of the political issues behind this case study. Unexpectedly, I met Nima Alijani, the owner of TH Bar during the time I spent at the site. From the interview with Alijani, I found that, surprisingly, he did not consider his idea of opening a bar as having been influenced by the presence of the white pavilion. From Alijani's perspective, he recognised the site simply as a leftover space. However, taking a closer look we can find Alijani's view rightly explains the value of the design – it is because the design made the site's vacancy visible that Alijani could develop his own idea of appropriation. My visit was in April so the bar was not open and I experienced the place as a quiet overgrown site, and a bit unkempt due to the randomly stacked amenities of TH Bar. I recorded my experience with notes and sketches and I photographed the material and vegetation on site. These interviews and observations, together with the online literature search of local histories, were used as the data for the analysis of the case study.

4.2 The Site Transformation

4.2.1 The site's biography before design

The location of the site is right in the historical centre of Valby. The earliest inhabitation of Valby could be traced back to ancient times, when it comprised two ancient villages: Valby and Vigerslev. In the 16th and 17th centuries, because of the civil war, Valby suffered deeply from poverty, leading it to remain as a small settlement for a long time, without even its church. For a long time, Valby Langgade was the only road in Valby (Frandsen & Milthers, 2013).

In 1776, the road to Roskilde—the west region of Copenhagen—changed its direction towards Valby Hill and expanded the northside of Valby town (Fleischer, 2016). The traffic connection facilitated inns and other businesses to be founded here. During this period, the royal family constructed the summer resort, Frederiksberg, on Valby Hill and their presence attracted more middle-class citizens to establish summer houses in the surroundings. These social events served as the crucial impetus that drove the development of the town (Frandsen & Milthers, 2013).

In 1847, the city of Copenhagen constructed the first railway connection to the region of Roskilde and Valby was a stop on this line. However, the station was closed in 1864 due to the shrinking number of travellers who shifted to a new line that passed directly through Frederiksberg. At the same time, the construction work on the new railway revealed a natural spring in Valby Hill. Carlsberg Brewery took advantage of the spring and opened in 1847 at the foot of the east mountain of Valby Hill, not far from the town of Valby (Carlsberg Group, n.d.). The brewery gained huge success in the following years and significantly boosted the development of Valby town in the 1890s, during which period it witnessed the construction of Smedestræde2.

In 1901, Valby officially became a district of Copenhagen and was rapidly built up (Frandsen & Milthers, 2013). This momentum fully activated the area north to Valby Langgade. New roads such as Skelmosevej, Cæciliavej, and Blankavej were planned on the northeast side of the courtyard of Smedestræde2, and a large cluster of six storey residential blocks was constructed at the same time. As a result, the previous rural landscape entirely disappeared. The Nordisk Film studio, now famous in the Danish film industry, was established in the north neighbourhood in 1906 (Nordisk

Fil, n.d.). Another well-known regional industry is Valby Spinning Mill, located to the south of the site and recently transformed into a shopping centre called Spinderiet (Sabroe, 2008). The buildings around the site, including a residential house, a small store, a large store, and a workshop building were also built in this period.

In the 1960s, the old farmhouses on Smedestræde were mostly demolished due to deterioration and were replaced by a new three-storey building that mimicked the architectural style of previous buildings. During this period, the building in the front yard of the site was also removed. Later, to the east side of the site, a large five-storey building was built at Valby Langgade 48, which was initially used as a furniture store. In the same period, the site was let to a car dealer called Autospar, and the front yard was used for parking the cars for sale (Wagner, 2016, p. 9).

In 2012, the car dealer stopped leasing the site, leaving the site abandoned. Wildness quickly reoccupied the site—buxus bushes began to grow against the fences adjacent to Valby Langgade, and clematis climbed on the vast façade of the empty buildings as well as the wall on the east side (Figure 4.2).

Site transformation

1880s
Smedestræde and
houses along were built

Urban transformation

400-900
Valby origin from two
villages: Valby and
Vigerslev

1186
First record
mention of Valby

1650
The city was almost
completely destoried
leading to deep poverty

1700
Construction of
Frederiksberg Palace

1750
The roa
went th

Landscape transformation

65-60 million
Deposit of limestone, which is
now the underlayer of ground

9700BC
Melting water joint into
large channels, forming the
rivers in east Zealand

Weichsel glaciation bring
deposits of moraine

Earthquake shifts, forming
Carlsberg rejection, which
is current valby hill

8500BC
Øresund was formed
because of rising sea levels

FIG. 4.2 Timeline of Valby urban and landscape transformation
The timeline drawing highlights influential events in landscape and urban transformation.

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The period of design intervention

2012
Car dealer leave, the site became empty

Site put on sale, proposal of supermarket comes

Local committe propose to put sale on-hold

2013
Local committee invited the discussion of the site future

Seeds team built pavilion, re-opened the site

received an official permit to use the plot temporarily

2014
Receive funding on temporary events.

Different temporary events organized

2015
temporary use lose momentum

TH Bar opened by Nima Alijani

2016
The plan for the llibary aborted

TH Bar open in the summer

2017
New housing construction delayed

TH Bar open in the summer

2018
TH Bar open in the summer

...d to Roskilde ...rough Valby

1800
Valby became a summer residence of bourgeoisie

The railway from Copenhagen centre stopped at Valby

1850
The brewery Carlsberg established

Houses along Smedestræde were built

1900
Valby became a suburb of Copenhagen

Large enterpris enter central Valby

1950
urban densification and higher buildings

Old houses are demolished

2000
Series urban redevelopmant in and around Valby

2018
New light rail passing Valby Langgade

Redevelopment Grøntorvet into new dense neighbourhood

1000
A dam was built on Harrestrup River (Harrestrup Å) created Damhus lake

Ecological restoration of Harrestrup Å

4.2.2 **Design History**

After the car dealer left in 2012, the site was put up for sale by the city council of Copenhagen and a supermarket developer soon bid on it. However, since the site is in downtown Valby, there were already three supermarkets close by. From the local committee's perspective, developing the site as another supermarket was not an ideal plan. Meanwhile, the sale launched by the city council made the local committee aware that the site was not owned by a private owner but by the city. The local committee had not initially known this because there were signs around the site stating that it was private-owned. Because of these circumstances, the local committee proposed to use the site for public cultural programmes. The initial idea was to establish a multifunctional cultural centre containing a public library and a theatre, because the existing library was relatively small and old, and was not centrally located like this site.

In 2012, the local committee proposed their plan to the city council. Through discussing with the public and culture department of the city council, a decision was made in the autumn of 2012 to suspend the sale of the site. To raise the attention of local public and to further broaden the possible options of future cultural usage, the local committee received a temporary permission to use the site for temporary public events, which allowed them to test social potential of the site (Palsmar, personal communication, April, 2017).

It was at this point that the collaboration between the local committee and SEEDS research group was established. The site became one of the pilot cases in the SEEDS project. However, the budget for this temporary project was very limited. The idea to host indoor activities in the workshop building on site was not feasible for this temporary usage. The deteriorated condition of the building required too much work to be renovated. At the same time, the hidden character of the backyard was considered by the local committee to be a disadvantage in attracting the public. As a result, the front yard was decided upon as the site for design intervention (Wagner, 2016).

The first step was to introduce a new entrance at the side of Valby Langgade. The overgrown bushes were trimmed lower, making the site visible to the pedestrians. A pavilion was designed and placed in the centre of the front yard. The pavilion was intended to be a container for various public events and social activities. The unique profile—only a skeleton with a façade and roof – together with its rather distinctive volume, makes the pavilion stand out to the people passing by, telling them that there are activities going on in this site. The construction of the pavilion was funded by the local committee, and was conducted by UCPH SEEDS team,

with the assistance of students from Copenhagen Technical School. Besides the pavilion, a blackboard was placed on the eastern boundary of the site, with an unfinished sentence "In Valby I dream about...," that invites people to express their ideas about the site (Wagner, 2016, p. 288). A new sign with the symbol of the pavilion was placed at the new entrance to the courtyard, on the sidewalk of Valby Langgade, replacing the previous sign of the car dealer. The renovated courtyard opened to the public on Valby Cultural Days during the summer of 2013. From then on, the previously hidden and fenced courtyard was be reengaged by the public[13] (Figures 4.3, 4.4).

FIG. 4.3 The first year of the pavilion on site
The white pavilion, with an open frame, offering a symbol that welcomes new visitors. Copyright 2013 by H. Palsmar.

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13   The background information of this case study is primarily gained from Anne Wagner's study of this project in her thesis, *Permitted Exceptions: Authorised Temporary Urban Spaces between Vision and Everyday*. In her thesis, the project, as a pilot case of the research project SEEDS, was studied within the framework of three themes: "between vision and everyday", "between public and private", and " between sign and action". The research reveals how temporary urban spaces can be supported by the urban planning and enrich the social practices in the urban realm.

FIG. 4.4 In Valby I dream…
A blackboard was installed on the east fence of the site, inviting people to write their opinions of the future of Valby.

4.2.3 ## The Process After Design

After the opening, the local committee, together with local cultural organisations, organised different public events on site (Wagner, 2016, p. 85). These public events included urban agriculture, book exchange, theatre and performance, used products recycling, and mural painting. The public were only interested in these events at the beginning, and local social groups generally lacked the motivation to initiate events, so the local committee had to manage the events each time. In 2015, the city council had still not made a final approval of the cultural centre while the local committee's budget for the site had run out. Without organising more public events, the site became "empty" again, waiting for a decision on its future. At this moment, Alijani passed by the site and decided to open a temporary outdoor bar here. Alijani's proposal was accepted by the city council, which allowed him to use the site for his business until the plan for the cultural centre was settled. However, the final decision of the city council turned out to be different: instead of a cultural centre, the council wanted to build a house for mentally-disabled young people on the site. In 2016, when it came to the demolition of the existing buildings on site, the local committee found that one of the existing buildings—the residential house on Smedestræde2— was valuable from a heritage perspective and needed to be preserved. For this reason, the new plan for the site was again placed on hold and TH Bar was given the go-ahead to operate for a few more years (Palsmar, personal communication, April, 2017) (Figure 4.5).

2013 – The leftover situation.
Copyright 2016 by A.M. Wagner

2014 – The temporary social events place.
Copyright 2014 by H. Palsmar

2015 – TH Bar during the summer.
Copyright 2016 by A.M. Wagner

2017 – The site's empty status during the rest of the seasons.

FIG. 4.5 The transformation stages of the courtyard

4.3 Morphological Lens: a Small Courtyard in Valby

4.3.1 The Topography of Valby

The landscape of Valby is a relatively flat terrain broken by *Valby Bakke* [Valby Hill] standing 37 metres high (Riesto, 2018, p. 79). Sitting next to the east border of Valby, the hill is conventionally perceived as the boundary between Valby and central region of Copenhagen. The phrase "west of Valby Hill" is an expression in Danish meaning "outside Copenhagen" ("Valby", 2020). Together with a large green area including the Vesterbro cemetery and Frederiksberg Garden, these landscape elements provide Valby with a certain independence from the central Copenhagen. The west border of Valby district is formed by the stream Harrestrup Å. The stream rises from the far north, at Mønterne/Herstedhøje, and runs to the south, joining another water course, Kalveboderne, at Valby Park and runs into Øresund. Along the river is a linear green belt, connecting several parks in the surrounding area such as Damhussoen, Vigerslevparken, and Valby Park. The stream, together with the green belt to both sides, is considered as an ecological corridor in the region (Kuhlman, 2013). Although surrounded by large urban parks and natural reserves, inside Valby the urban environment lacks large green open spaces. Most of the green spaces are green courtyards within residential blocks, or private gardens. The only large green space within the administrative boundary of Valby is the sports park Valby Idrætspark in the southeast (Figure 4.6).

FIG. 4.6 The location of the courtyard Smedestræde 2 in the landscape
Surrounding Valby there are several large urban green areas, one of which is Frederiksberg Palace which sits on Valby Hill. Facilitated by the transportation connection to central Copenhagen, the town has witnessed a growing number of residents in recent years.

Valby is one of the ten official districts of Copenhagen. The journey from the centre of Valby, through Valby Langgade, to downtown Copenhagen is just two kilometres. Smedestræde 2 is a historical street that stretches from Valby Langgade and winds in a north-westerly direction. The courtyard at Smedestræde2 is located at the east end of street, where it joins Valby Langgade. Railway transportation is another optimal transport connection between Valby and the rest of the urban districts of Copenhagen. The train station is located in the town centre, connecting Valby Langgade with the shopping centre Spinderiet. The rail line from central Copenhagen splits at Valby; one branch goes to the western region and the other branch goes to the north. This transportation system establishes Valby as a transport node for travellers from the western region entering the city centre of Copenhagen, which further determines the development potential of this historic town. The topography of Valby, its location in relation to central Copenhagen, and the landscape components of Valby Hill and Frederiksberg Garden, substantially determine the geometric character of the courtyard in Smedestræde 2.

The Geometry of the Courtyard

The courtyard sits at the east end of Smedestræde. The orientation of the street represents the relationship between Valby Langgade and Frederiksberg's garden. Valby Langgade is the primary road running in an east-west direction, largely defining the geometry of the courtyard. On the other hand, the orientation of Smedestræde, which is aligned to the diagonal of the courtyard, is defined by the border of Frederiksberg's garden. Triggered by the presence of royal family, Valby started to expand and several streets were built in the angle formed between Valby Langgade and the southwest border of Frederiksberg's garden. Smedestræde is one of those streets, cutting at an angle between Valby Langgade and Frederiksberg's garden. The two adjacent streets—Bag Søndermarken and Brøndkærvej—are formed by the same logic. A line extending from Smedestræde transforms into the division line between the front yard and the back yard of the site. From this perspective, the orientation of Smedestræde, and therefore the geometry of the courtyard, represents the role of Valby Langgade and Frederiksberg's garden in the historical development of the area (Figures 4.7, 4.8).
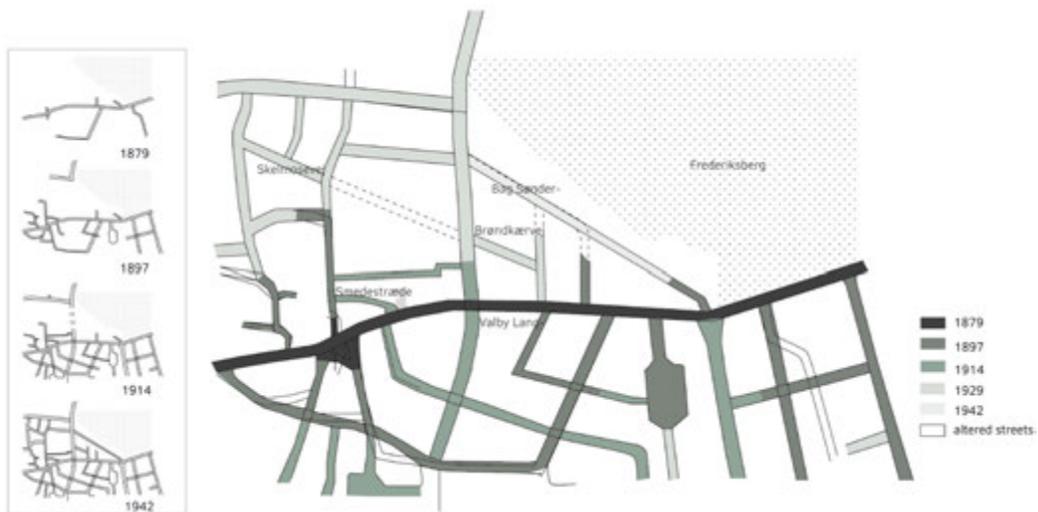
FIG. 4.7 The evolution of urban pattern
While the south side of Valby Langgade was developed before 1900s, the area to the north was developed after the construction of Frederiksberg Palace. Smedestræde dates back to 1897, having borne witness to the development of the village from the very beginning.

Smedestræde represents the angle between Valby Langgade and Frederiksberg. This logic is also repeated in the other two adjacent streets: Bag Søndermarken and Brøndkærvej.

The south and east boundaries of the site are defined by adjacent urban streets. The east boundary follows the north-south oriented streets in the neighbourhood, most of which connect to Valby Langgade. The north boundary of the site follows the direction of the Asta Nielsen Stræde and is enclosed by the abandoned workshop building. The west border of the site is fragmented, cut by the scattered buildings between Smedestræde and Asta Nielsen Stræde. The uneven layout of these buildings is somehow influenced by the winding course of Smedestræde that is not parallel to either Valby Langgade or Asta Nielsen Stræde, contradicting the more orthogonal urban pattern developed at the later stage. Hence, the fragmentation of the west border can be considered as a unique characteristic of the site, reflecting different stages of its urban development.

4.3.3 The Spatial Characteristics of the Courtyard

There is a remarkable contrast in the urban morphology on the west and east sides of the site. The urban morphology in the west is constituted by a group of two-to three-storey-high small traditional houses in the historical Valby style. In contrast, at the east side of the site, the historical houses that used to be there were demolished and replaced by a 12-storey commercial building block with a 2000m^2 footprint. The disjointedness of the urban fabric leaves the site as an undefined in-between fragment. Looking over the border of the courtyard, one could clearly see the two different urban contexts. This specific situation also means the site can be understood as a space that joins two disunited urban contexts, negotiating their features and representing the site as a defined place (Figures 4.9, 4.10).

FIG. 4.9 The alternation of the surrounding urban layout
The historical buildings surrounding the site were demolished in the 1960s. On the west side of the site new buildings were designed to be congruous with previous houses, while on the east side, a new building of massive volume was constructed. This dissonance gave the site its identity as a residual form in-between.

FIG. 4.10 Smedestræde in 2017

The houses on Smedestræde kept a similar profile to the previous historical image. The courtyard and the pavilion can be seen at the end of the street.

One remarkable feature on the west border is the outstretched historical building that substantially divides the courtyard into the front yard and the back yard. The building's façade, with the triangular roof shape, becomes part of the site's enclosure and lends a traditional identity to the site. The front yard connects directly to Valby Langgade, divided by a row of low bushes. Due to this semi-enclosure, the front yard has an open character. The back yard, on the contrary, is enclosed by the workshop building of approximately 7 metres high on the north side and wooden panels on the east side. Additionally, the backyard is far from Valby Langgade, and partially blocked by the building in the middle. Because of this, the backyard has a more hidden, intimate character (Figures 4.11, 4.12).

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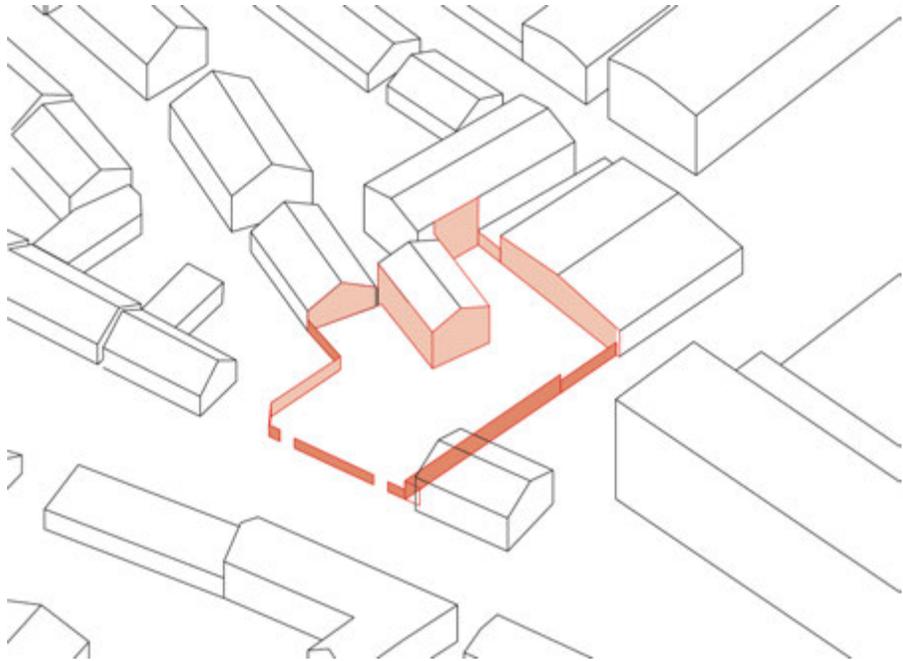
FIG. 4.11 The fragmented enclosure of the courtyard
The boundary of the site is defined by the external spatial conditions rather than self-defined.
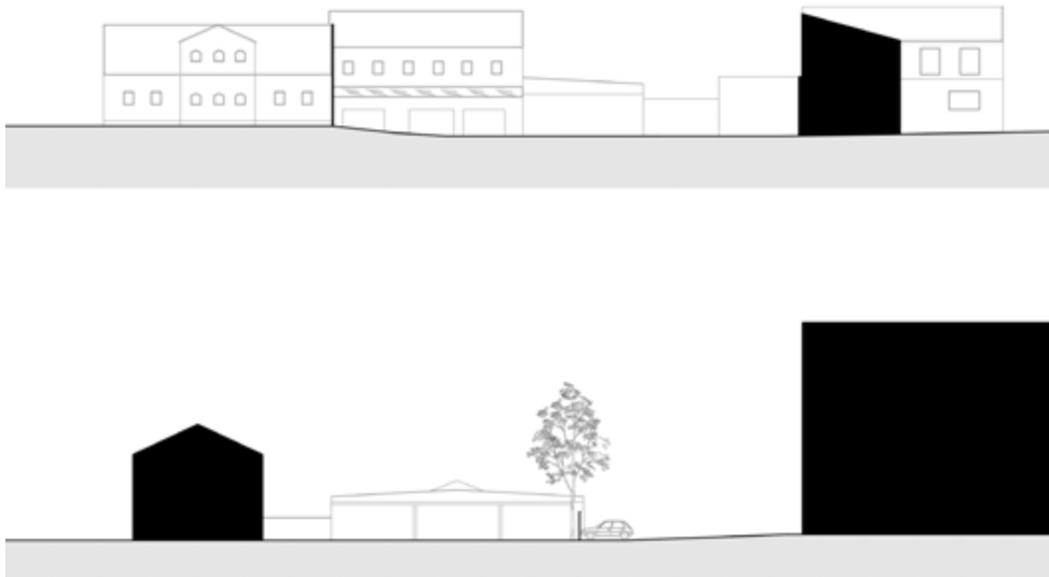
FIG. 4.12 The enclosure of the front yard and the back yard
The front yard provides more openness, while the back yard is more enclosed. Partly because of this spatial characteristic, the research team SEEDS decided to place the pavilion in the front yard.

4.3.4 The Design Configuration of the Pavilion

The pavilion was designed in the centre of the front yard, following a decision made by the research team and the local committee, leaving the backyard as a backdrop. The design concept of the pavilion was to symbolise the openness and welcoming of entering, thereby attracting more social activities, and inviting people to discover and experience the site. As the result, the pavilion is made simply as a skeleton, with only wooden beams instead of any façades or roof. In this way, the structure conveys a neutral, incomplete, and undefined message to the visitors. The skeleton is designed to mimic the triangular roof of the historical buildings along Smedestræde. The height of the pavilion is about 3 metres, offering a familiar spatial dimension in its interior space that emulates the sense of a dwelling (Figure 4.13).
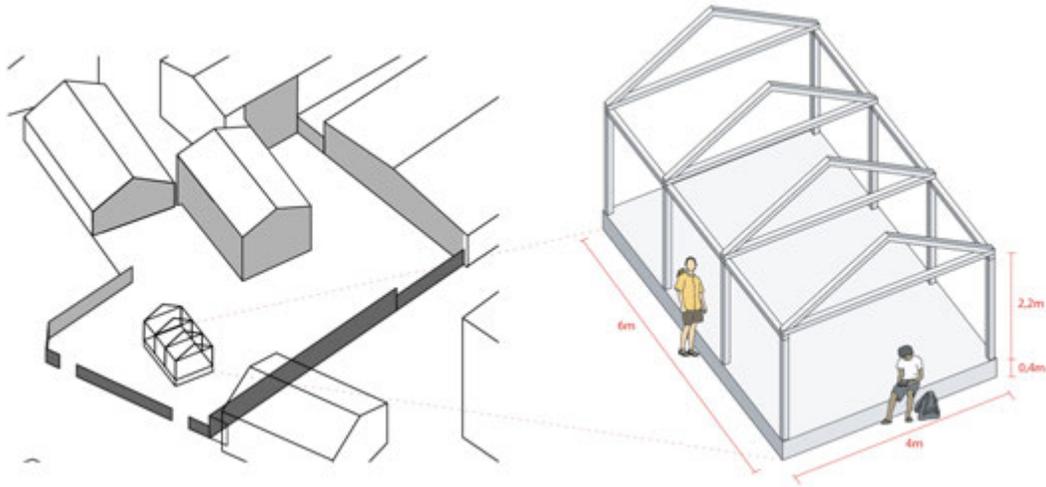
FIG. 4.13 The formal design of the pavilion
The skeleton of the pavilion mimics the façade profile of surrounding historical buildings, while its floor sits 40cm above ground, offering an informal sitting edge.

The pavilion is positioned to follow the direction of Smedestræde and the skeleton of the pavilion's roof imitates the profile of the houses on Smedestræde. In this way, looking through the pavilion, people could directly trace a connection between the site and the Smedestræde. The orientation of the pavilion also represents the invisible division line between the front yard and the back yard, punctuating the geometric characteristic of the site in a subtle way. The floor of the pavilion is 4m wide by 6m long and has a 40 centimetre high plinth. The elevated floor enhances the perception of the pavilion as a stage for social activities. The height difference forms an informal sitting edge, thus diversifying the potential usage of the pavilion. (Figure 4.14)
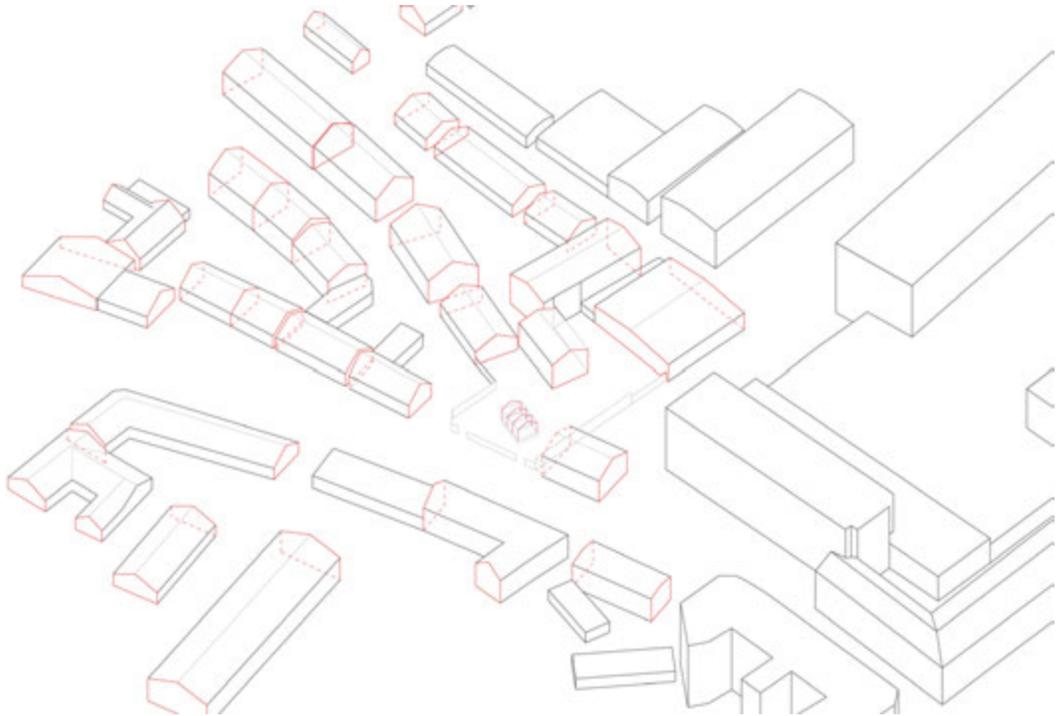
FIG. 4.14 The form and the orientation of the pavilion is aligned with the surrounding urban spatial profile
The pavilion follows the direction of Smedestræde and its roof corresponds to the houses on the street. Looking through the pavilion, people could directly trace a connection between the site and Smedestræde.

The Transformation of the Spatial Layout

The pavilion serves as a foundation for social appropriation. The following programmes, hosted by the local committee and by TH Bar, introduced its own amenity in and around the pavilion, gradually forming new configurations on the site. The amenities from the local committee and local cultural organisation, designed and built by young Copenhagen-based businesses including Creative Roots, OAN, and TagTomat, were mainly placed in and around the pavilion (Wagner, 2016, p. 85). For example, the book exchange cabinet was nailed to the column of the pavilion. Toys and chairs were spread around the outside of the pavilion during Valby cultural day. The urban agricultural boxes were placed at the border between the front yard and the back yard and an exchange station was placed in the back yard. These new objects were often arranged in line with the orientation of the pavilion, thereby marking it as the centre. However, this relationship was broken by the later operation of TH Bar. When the visitors of TH Bar increased, more outdoor furniture was added and it started to fill up the rest of the front yard. The new layout only partially incorporated the geometry introduced by the design. The logistic containers were placed at convenient spots for services but blocked the sight line to Smedestræde. From this perspective, although the site became more and more popular for social gatherings, the morphological characteristics of the site, which encompassed its relationship with the surrounding urban environment and the history of the place, was weakened (Figures 4.15, 4.16).

FIG. 4.15 New spatial logic introduced by the pavilion
The pavilion reinforced a diagonal line in the front yard, introducing a new centre, and marking a division between the front yard and the back yard.

FIG. 4.16 The transformation of geometrical pattern
The geometry of the pavilion provides certain guidance to the following social appropriation of the site. However, it is a weak spatial definition and the later operation of TH Bar presented a rather random pattern.

Evaluate Design Through Morphological Lens

The design of the pavilion is simple but rightly responds to the site characteristics; it is orientated towards the Smedestræde, and mimics the façade profile of buildings on the street. These design elements allow people to perceive the courtyard as part of the urban tissue, as a site that is connected with the surrounding urban environment rather than isolated from it, as it had been in the previous leftover situation.

At the same time, the design provides an open structure that not only hosts different social appropriations but also indicates the upcoming potential use of the site as a public cultural centre. The pavilion is thoughtfully arranged and fit smartly into the front yard, its scale and dimension allowing it to be a distinctive structure but one which does not congest the space. However, apart from the designed pavilion, other spaces of the site, for example, the site's fragmented border and the backyard are not included in the design intervention because of local committee's concerns on the safety and security issues. The informal use occasionally happened in the backyard, whereas the design, since it is limited to the front yard, does not facilitate visitors' perception of the site as a whole and even further, as a defined place with multiple cultural, historical meanings. This also prevented the design from offering further guidance for later transformations, meaning that different social appropriations that later took place on the site changed it at random and left its composition fragmented.

4.4 Social Lens: Temporary Uses in the Interim Period

4.4.1 The Social Structure of Valby

The neighbourhood of Valby has been undergoing major changes in recent decades. The most visible development can be found in the southern part of Valby. Several previously industrial sites here have been transformed into new urban districts. For example, the F.L. Smidth area around Ny Ellebjerg Station is now being redeveloped as a new residential area. Grønttorvet, the old trading centre for fruit, vegetables, and florists has now been developed into a green urban district. In the upcoming year, 2700 new homes will be built in Valby, with a population increase of 4500 (Valby Lokaludvalg, 2017). Besides the large-scale housing development in the south part of Valby, the centre historical area has also witnessed diverse commercial development, for example the Spinderiet shopping centre and many new supermarkets and shops along Valby Langgade. A metro station will also be opened in Valby in the coming years, connecting Valby to the metropolitan region of Copenhagen. The influx of new residents brings challenges to its existing urban functions, especially for the education and cultural institutes. The integration between existing and new residents is considered as a potential issue by Valby Local Committee (Figures 4.17, 4.18).

The population of Valby is characterised by young working people without children. Until 2017, 54,561 people lived in Valby, with the largest age group being 20-29 years olds who account for nearly 25% of the whole population (Københavns Kommune, n.d.). The municipality of Copenhagen expects that the residential population will rise to 67,412 by 2032. The most significant increases are expected in the 60-89 years old age group and in the youngest group, 0-19 years olds (Valby Lokaludvalg, 2017). The population growth is expected most in the south neighbourhood of Valby. With a growing number of older people and children, the area's small-size and nearby open spaces would be valuable urban components that will satisfy the social needs of the residents.

TOC

Commercial	School & Day care	Bussiness	
Mixed use	Cinema, Theater & Sports centre		
Residential	Institution		
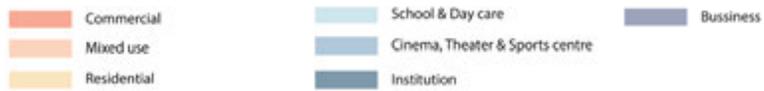
FIG. 4.17 Surrounding urban programme of the site

Sitting next to Valby Langgade, the surrounding urban programme consists of a variety of commercial and leisure activities, mainly located along Valby Langgade. Behind Valby Langgade lie patches of residential blocks. To the north is the area of Nordic Film Company. The site is surrounded by hybrid urban programmes.

	Square		Park
	Playground		Private green space
	Courtyard		Leftover space

FIG. 4.18 Surrounding urban green spaces

There are abundant green spaces in the surrounding neighbourhood of the site but most of them are private or collective green spaces, accessible only for specific urban groups. The courtyard is not the only leftover space in the area, but it is the one most identifiable.

Three Vital Social Actors

Important roles in this case study have not been played only by the designer—the research team SEEDS – but also by other social actors including the local committee and Alijani, the owner of TH Bar. The local committee negotiated persistently with the city council to allow the site to be used for cultural purposes, thus saving the site from being sold to the supermarket developer; SEEDS conceived spatial and physical interventions of the site, making its vacancy visible to the public; and Alijani rented the site after the local committee stopped organising social events and transformed the space into a popular social gathering place (Figure 4.19).

FIG. 4.19 Social life taking place in TH Bar
The pavilion was not only used an outdoor bar, but TH Bar also organised frequent festivals, making the site a dynamic cultural place in the neighbourhood. Copyright 2016 by A.M. Wagner.

Valby Local Committee: Reserve the Site

In Copenhagen's administration system, the city has 12 local committees, distributed in 12 urban districts. The local committee works as intermediary between local people and the city council of Copenhagen, which consists of 23 volunteer politicians (Valby Lokaludvalgets, n.d.). The committee advise the municipality about their local ideas and desires, work on improving the local environment, and communicate the central government's policy to local social groups. The committee established two "local funds" to support local social initiatives, which could be accessed by all citizens, associations, and institutions.

The action of the local committee determined an important condition for the later social transformations in the site. Without the local committee, the site would have been sold and no social appropriation would have happened. The "in-between" position of the local committee is crucial in their practice; the committee members live in Valby, and have a deep knowledge of how to successfully develop the local social scene as well as the projects underway in the urban planning process. At the same time, the local committee are tightly connected to the city council—the ultimate maker of urban decisions—and they negotiate with the city using their knowledge of policy and urban planning. This special capacity allowed them to successfully negotiate an alternative, more interesting use for the site, to the benefit of the local public.

Research Group SEEDS: Opening the Site

SEEDS is an EU research project with five partner countries. UCPH SEEDS team facilitated and followed in total 20 SEEDS pilot cases (Lamm & Wagner, 2016). The objective of SEEDS is to test, develop, and promote the temporary use of urban vacant sites, "to test the integration of temporary use and re-utilization of vacant space into official policy making and to find innovative ways to bridge short-term and long-term development perspectives in urban planning." (Wagner, 2016, p. 9) This objective met the local committee's vision of the courtyard and through the initial investigation of the site, together with the communication with the local committee, UCPH SEEDS team conceived a physical intervention on the site as a way to explore and to testify the potential social benefits of the site. (Figure 13). The researchers from SEEDS have a design background, therefore they have the expertise to diagnose the spatial conditions of the site and to conceive a physical intervention that both satisfies the usage requirements, as well as providing a symbol to publicly display the meaning of this project. The design of this project highlights the expertise of designer in synthesising the social function, spatial quality, and narratives of the project.

TH Bar: Occupying the Site in the Waiting Period

The owner Nima Alijani came to take over the site during its extended period of vacancy, when the city council was still making decisions about the site's future. The city council was evaluating the budget for the cultural centre and the process took longer than expected. Because of the limited budget and lack of public engagement, the local committee gradually stopped hosting public events on site and the site was once again neglected. In 2014, Alijani, who is self-employed, and previously offered laundry and festival services, passed by the site and came up with an idea to use this small plot as an outdoor bar. Alijani made a proposal to the city council and was granted a temporary lease. A red logistics container was first installed on site to act as the service area of the bar. Benches, tables, and sun shades were placed around the pavilion. A string of colourful led lights hung on the frame of the bar, bringing a cosy atmosphere for the night-time. Occasionally, informal performances were organized, using the pavilion as the stage. The bar started in the summer of 2015, and continued to open every summer until 2020 (Rich, 2019)[14].

Wagner observed in her analysis of the TH Bar, after its opening TH Bar introduced a clear figure of 'host' to the site. Alijani became the spokesperson for the site, and was frequently asked by the visitors about the future of the site. This clear image of ownership made visiting the site more attractive for local people because the site in this sense has a stronger identity. The lessons learned from TH Bar were later practiced in other local public projects, using "hosting as a driver" to promote public participation in the programme (Wagner, 2016, p. 186). Wagner's observation points out that simply introducing a design intervention or external organisation (in this case the local committee) is not enough to maintain long-term vigour for the social programme. There also needs to be a more representative and responsive figure who has the capacity to bring a clear identity the site, which in turn encourages social participation.

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14   In 2020, the building permission—to build a housing for 24 young people with disabilities—was granted. The housing development means the old car workshop buildings at Smedestræde 2 needs to be demolished and TH Bar needs to be relocated elsewhere.

Temporary Social Activities

After the pavilion was built, the local committee, together with local cultural organisations including Kultur Valby and Sharing Copenhagen, organised several public events on site. Activities took place inside or around the pavilion and a couple of event amenities were brought to the site; the planting boxes and pallet benches were installed behind the pavilion, and book exchange boxes and a swing made from an old tyre were attached to the frame of the pavilion. A self-service recycling and barter station was "adopted" from another of the local committee's projects and was placed to the rear of the front yard (Wagner, 2016, p. 85).

All of the temporary public events were set up by the local committee. The local people seemed less interested in making something for themselves. Taking the mini urban farming garden as an example, the local committee established the garden and promoted it through various media platforms, calling for local people's participation. However, the agricultural garden was only attractive at the very beginning stage, and later only a few people from the local committee maintained its involvement in the garden. In the end, it was the local committee and later, the bar owner Alijani, who ultimately came to maintain the planting beds (Wagner, 2016). As Wagner pointed, a "caring model" was missing in the management of these temporary public activities: "what was thought to be a small but broader inclusive citizen volunteer community garden project has turned into a sub-municipal maintenance task." (Wagner, 2016, p. 81) It is not clear who is responsible for what; the focus of such informal social events is on their temporary nature with the objective to bring more people to visit the site, but is not intended as a development in the long run. The consideration of management and maintenance is missing in these temporary projects (Wagner, 2016, p. 182).

The majority of social events hosted on site are topics widely used in bottom-up urban practices: growing food, exchange of used products, public art, etc. These activities vigorously engaged the local people at the beginning. However, local people never took the initiative to develop any of those events or to experiment with their own ideas. The reason behind that might be that these temporary social events were not fully embedded in the local culture and didn't completely respond to the social desires of local people. Considering this, feedback sessions can be designed and included in the operation of such projects, to examine how people think about the events and to conceive together what other activities could be developed.

TH Bar: Gaining Unexpected Popularities

The TH Bar offered people a place to gather outside, to enjoy the bright summer afternoon or the cool air in the evening. Compared to the interventions conducted by SEEDS, Alijani introduced to the site a clearer and more defined programme. Surprisingly, the pop-up bar was popular among local public. If the weather was fine, the yard was crowded with people who used to meet there, chat with each other, and enjoy their affordable drinks or play table games.

TH Bar is privately-owned, and although it ran for business purposes, people were allowed to bring their own food or to simply sit there without purchasing anything. The only rule was that patrons could not bring their own drinks. His management kept an informality to the site; when Alijani named the pavilion "TH Stage" visitors asked if they could dance there to which he replied that that was always welcome. As a result, the pavilion became an occasional dancing stage (Wagner, 2016, p. 185). The seating could be easily moved by users, providing a level of flexibility that allowed people to appropriate the space. These informalities and flexibilities provided people with a sense of attachment, although Alijani was the real owner.

The temporary nature of the site significantly restricted Alijani from developing a long-term plan for the bar. Therefore, the setting up of the bar each year is provisional, and the industrial containers and outdoor tables basically satisfy the function of accommodating people. At the same time, the popularity of the bar brought local attention to the site, which was beyond any attention gained from previous temporary social activities. When people heard that the bar might be replaced by a housing project, they started to pose on public media to stress that the site should be kept as a public open space. By hosting social programmes that meet local people's desires, TH Bar instigates local people's ideas of potential public projects that they might be interested in developing in the future (Figure 4.20).
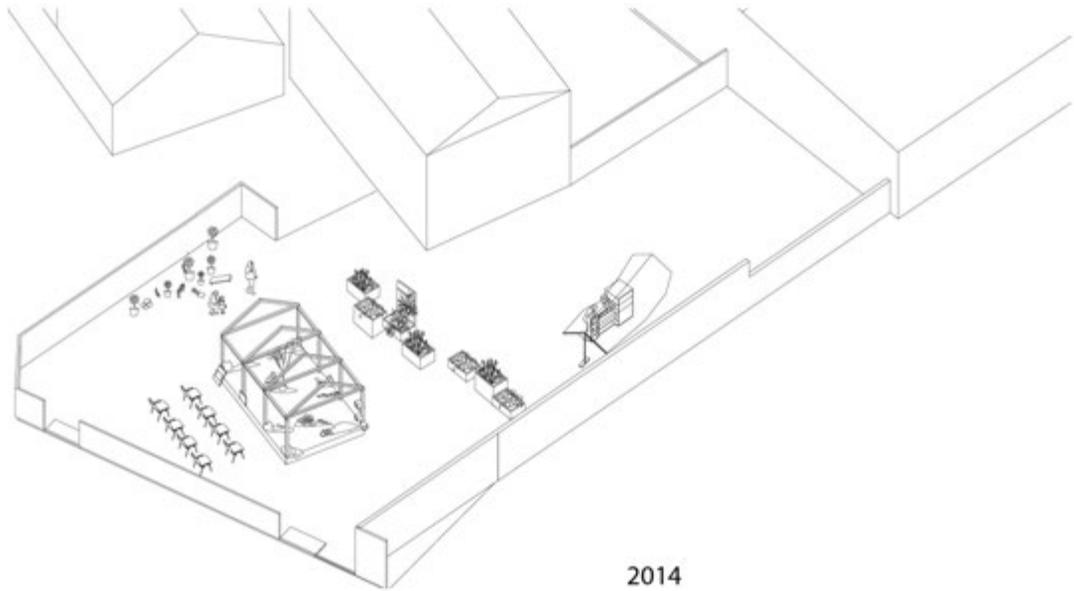
2014
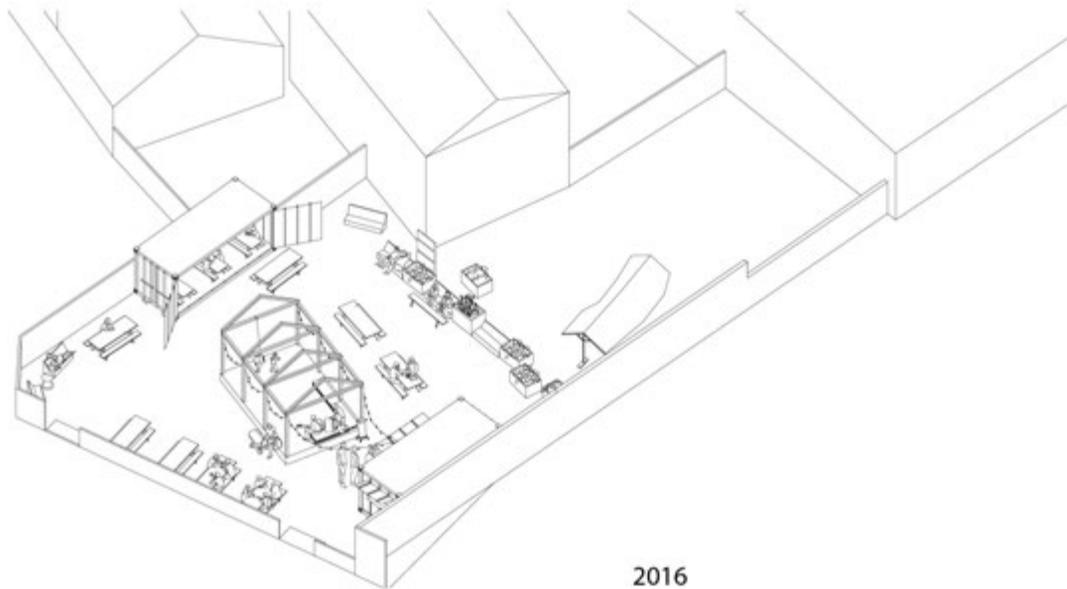
2016

FIG. 4.20 The four stages of social transformation on-site
At the beginning it was the local committee organising temporary social events on site. In 2015, the TH Bar initially opened and in the following years its programme expanded gradually.

2015

2017

193   Pavilion Valby Smedestræde 2

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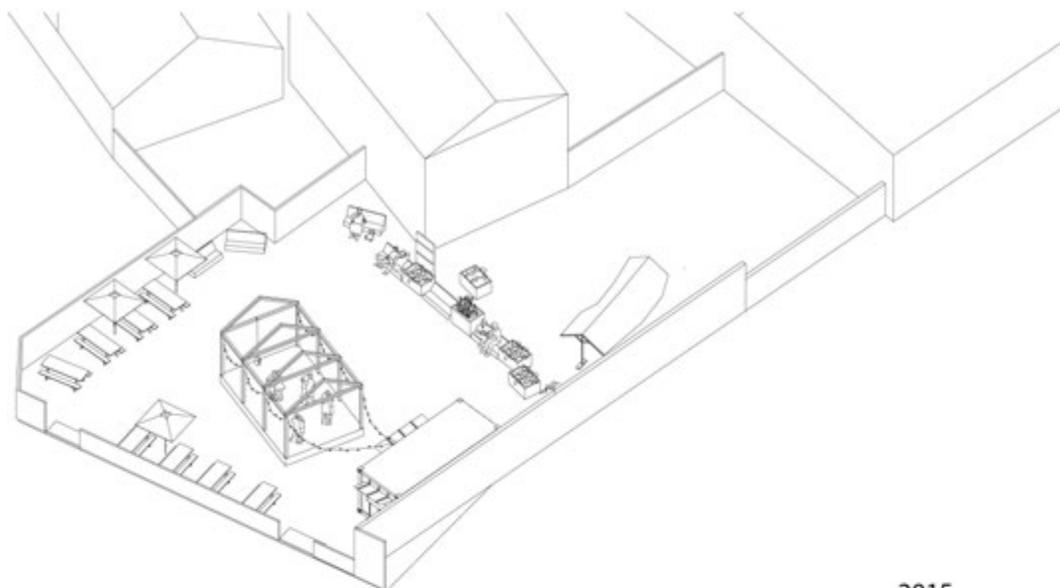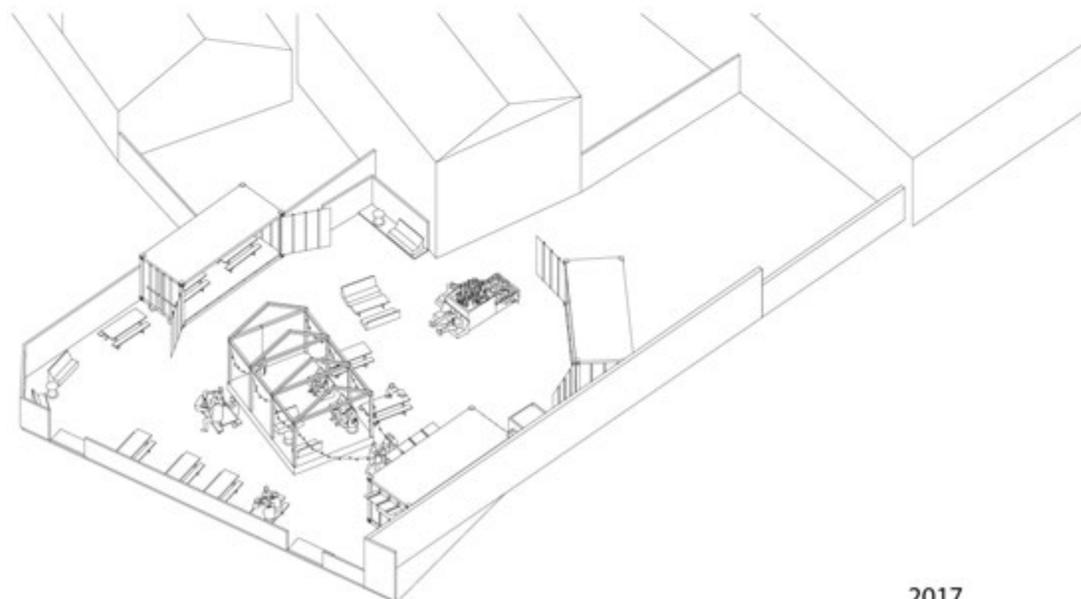
Evaluate Design Through the Social Lens

The transformation in the social lens is driven by two social practices: the temporary public activities organised by the local committee and the pop-up outdoor bar organised by Alijani. Both programmes took advantage of the pavilion; the temporary public activities of the local committee directly used the pavilion as an attraction for the public and hosted different activities, while the presence of the pavilion helped Alijani to notice the vacant site. All of these dynamic social practices on site are fundamentally based on the local committee's efforts to save the site from being sold to a business developer. Therefore, the design intervention has value in activating the leftover space but the running of such projects needs to work with policy makers and urban administration, which involves the cooperation of multiple social actors.

The design made by the research team SEEDS addresses the value of designing new spatial-physical realities on the site. From a functional perspective, the design prepares a foundation for public participation. There are two essential interventions made by the design: firstly, it makes the site's vacancy more visible to the public; secondly it states the site's eligibility for flexible use. In this way, the design facilitates both the intended public uses as well as unexpected practices like TH Bar.

In the whole process of developing different temporary public events, it was always the local committee that made the effort. The scarce social engagement was partly because the local committee considered this project as a way to test the cultural potential of the site, instead of empowering local people to use the site and develop something for themselves. At the same time, the form of the pavilion is rather neutral and simple, and lacks something that stimulates and expresses the cultural, historical meaning of the site—if the design can spark people's imaginations and augment a sense of place, people will be more likely take the initiative to appropriate the site.

From a temporal perspective, the design proposal did not consider the social activities on site as something to grow. Because of the temporary nature of the project, the design only intended to provide an improvised structure, a container for public activities, but did not prepare for social practices that are more permanent like TH Bar. As a result, the TH Bar gradually occupied the site with its functional arrangements of containers, benches, and tables, which lack of a level of integration with the initial design. (Figure 4.21)
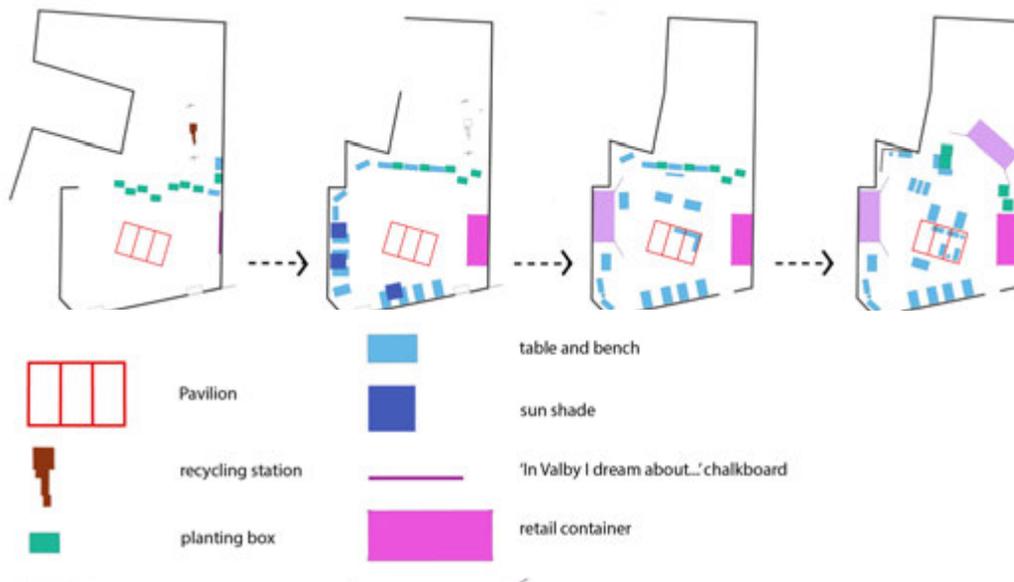
FIG. 4.21 The programme transformation of the courtyard
With four stages of social transformation, the amount of outdoor furniture has been increased and the open ground is filled up. The occupation of TH Bar simultaneously deprives the opportunities of other forms of social activities.

4.5 Ecological Lens: Overlooked Wildness

4.5.1 Regulating the Overgrown

Before the establishment of the pavilion, the site was a courtyard with overgrown vegetation. Especially in the front yard where the ground is covered by gravel, after the cars were no longer parked there, grasses started to grow through the seams of the gravel layer. During the summer, the growth of grass covered the front yard like a verdant green carpet. The lush *Sambucus nigra* (elderberry) bush grew at the border, forming a dense screen that blocks the view of pedestrians on Valby Langgade. A *Betula pendula* (silver birch) could be found in the backyard, projecting shade and allowing birds to nest. Some climbing species, for example, the *Clematis vitalba* (Old man's beard), covered the metal fences and the wall of the abandoned residential building. Wildness incrementally took over the site soon after humans left (Figure 4.22).
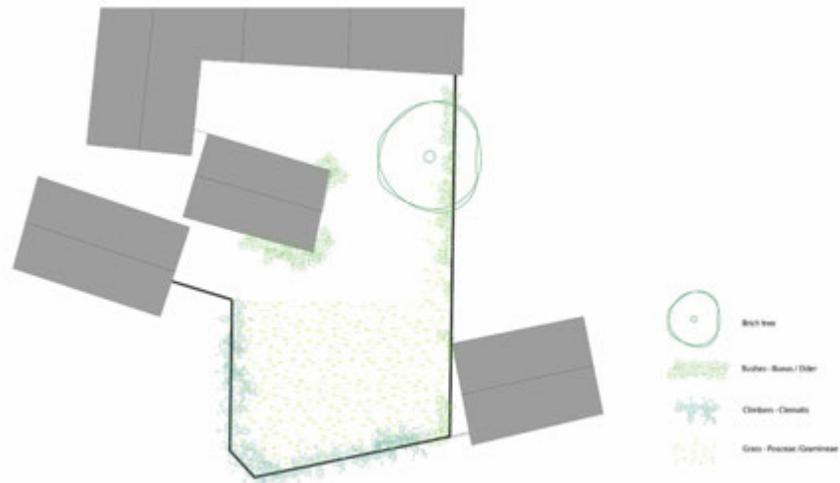
FIG. 4.22 The major plant groups on site before design
After the car dealer stopped using the site, existing vegetation and site plants started growing wildly. It was the borders of the site—the walls, fences, and building façades in particular that witnessed most growth.

Looking through the ecological lens, the intervention of the design is minimal: the overgrowth was only slightly cleaned up, but not completely removed. The bushes at the border were trimmed to keep a regular profile, making sure that they didn't grow so high or so thick as to block the view of the pedestrians on Valby Langgade. This intervention is simple and practical—it cleans the wildness to a degree that allows the upcoming public activities to have a proper setting, but does not remove the existing wildness in a radical way.

4.5.2 **Unattended Ecology**

Although the design intervention did not threaten the ecological quality of the site, neither did it intentionally incorporate the wildness on site into the new spatial reality and social programme of the design proposal. Consequently, the visitors and new "owners" of the site failed to deeply realise and appreciate the value of such wildness formulated by spontaneous ecological processes. This neglect can be considered as a reason as to how TH Bar gradually took over the open space of the front yard and left few areas for nature to develop. Between 2015 and 2017, in each year's opening session, TH Bar kept increasing its outdoor amenities: the number of logistics containers grew from one to three and more tables and chairs were added. The aerial photo of the site in 2014 showed that the front yard was fully covered by grass while in 2018 only gravel was left; the frequency of human occupation prohibited the natural process, diminishing the ecological qualities of the site (Figure 4.23).

| 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2018 | 2019 |

FIG. 4.23 The contest between the social usage and the ecological condition
The lush vegetation gradually diminished by the growing popularity of TH Bar. Copyright 2011, 2012, 2013, 2014, 2015, 2016, 2018, 2019 by Google Earth.

TOC

4.5.3   Evaluate Design Through the Ecological Lens

The ecological quality of the site is not the design focus. The starting point of the design was to test the potential of the site in social use and this was the guiding theme in the designer's consideration. The temporary nature of this project limits the designer's vision to look at multiple qualities of the site and as a consequence the existing ecological condition were not taken as an interesting design ingredient. Instead, the wildness was moderately tidied and served a backdrop for the white pavilion.

The design simply kept the site's existing wild vegetation—it neither completely removed it nor integrated it into the new configuration of the site. As a result, the existing wildness is not attractive to, nor looked after by, new human visitors. The project's transformation tells us that if the design does not actively involve the ecological quality of a leftover space, the natural processes will inevitably be hindered by re-opening the site to the public. On the contrary, if the design could speak, the characteristics and processes of the existing nature conditions of a leftover space and the new spatial setting would have more capacity to give human visitors an appreciation of nature and further persuade them to take care this ecosystem, as well as to participate with its transformation.

4.6   Material Lens: the Pavilion as a Detached Object

4.6.1   Ochre Stucco Wall, Wildness, and Wastes

Before the design intervention, the site presented an image of being abandoned and overgrown, constituted by materials including grass, climbing plants, bushes, a fully-grown birch tree, gravel, concrete, wood and metal fences, stuccoed walls, brick walls, graffiti, and domestic waste. Because the front yard and back yard have different locations, enclosures, and functions, their distinct material worlds are different from each other (Figure 4.24).

The front yard represents a tranquil image of ochre stuccoed façade, grass and bushes, climbing plants on the wooden panel, and metal fences. Most of the materials are either from historical buildings on site, or from the previous use of the car dealer; for example, the gravel surface to the front yard was put in to make it easier to move cars. However, after the car dealer left, nature started to transform this material world. The clematis climbed up the building's façade, and the grass grew through the gravel and formed a new surface on the ground.

The backyard, in contrast, presents a deteriorated and ruined character. The buildings in the backyard were used by the car dealer as the office and workshop space. Perhaps because of this, the backyard is paved in concrete. The workshop building had been left unused for a long time and looks decrepit. A big silver birch could be found in the backyard, the volume of the tree indicating that it had been growing in this space for over 20 years. After the car dealer left, the backyard started to be used as a dump for different domestic waste and street artists graffitied the walls of the abandoned buildings (Figures 4.25, 4.26).

FIG. 4.24 / A The material world of the site during site visit in April 2017

The front yard has a more open character, the objects introduced by SEEDS and by TH Bar clearly visible to people from outside.

FIG. 4.24 / B The material world of the site during site visit in April 2017
The backyard is rather dilapidated, filled with deteriorated objects, materials, and graffiti.

FIG. 4.25 Collection of materials on the site

The materials found on the site can be categorised into four groups: materials original to the site, materials introduced by the design, materials introduced by the temporary events, and materials introduced by TH Bar. Materials from first three categories are simple and exist in harmony with each other, while the material from TH Bar is more diverse and exotic.

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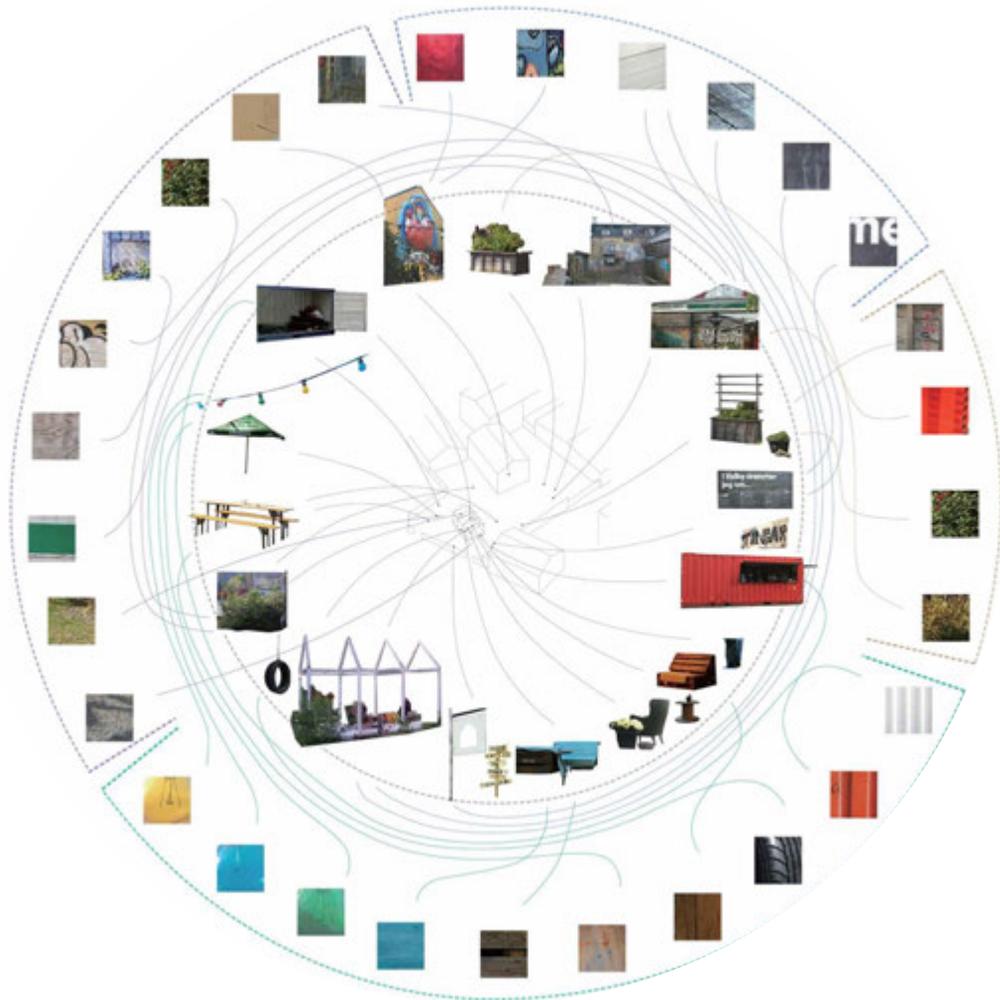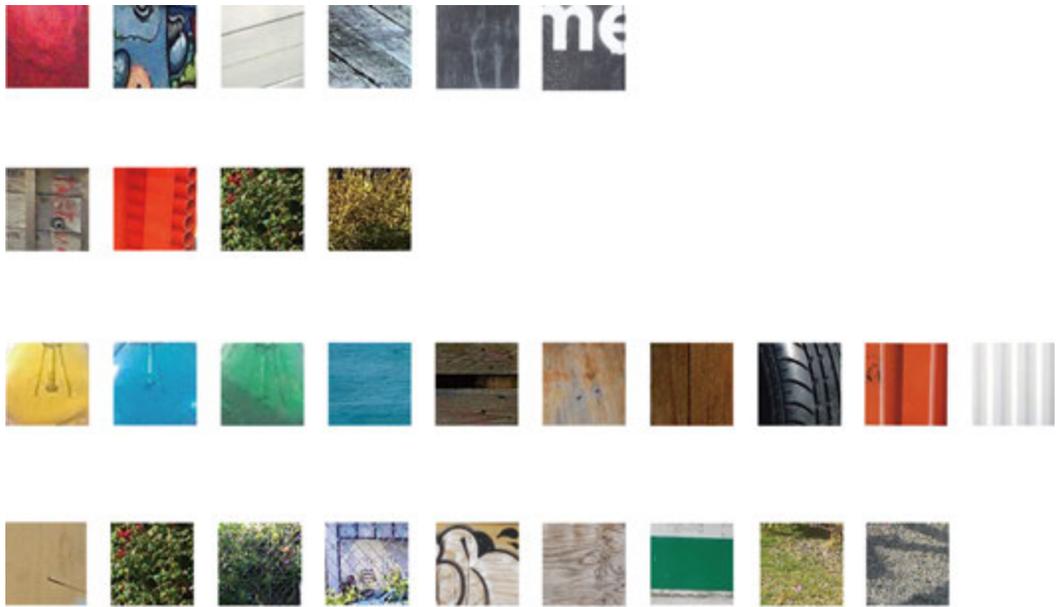
color_site original

color_ design introduced

color_ legacy from temporary events

material_ TH Bar

FIG. 4.26 The texture and colour panel
TH Bar diversified the colours of the site, setting a contrast to the other more soft and natural colours of the courtyard itself.

The White Pavilion

The white pavilion is the main physical construction that was introduced by the design, creating a symbol for inviting diverse social activities. The pavilion's white colour and open structure convey an image of neutrality, lightness, and openness. Besides the white pavilion, the blackboard with the open sentence "In Valby I Dream about…" was installed on the wooden wall to the site's east border, stimulating visitors' ideas on the future of Valby (Wagner, 2018, P. 288). A white board with the carved shape of the pavilion was placed at the entrance, replacing the previous sign of the car dealer. The design used white or black only as colours, and imbued the material world with a sense of openness and inclusiveness.

The design intervention to the material world of the site is brief and easily recognised. In this way, it allows the new setting to attract local residents, especially the pedestrians walking along Valby Langgade. The white pavilion can be perceived as both an object to be "seen" and as a space to be occupied. In this manner, the pavilion entices people to enter the site and to examine the space from within. However, once people enter the site, there is little more to discover. The material world does not unfold as a sequence—from outside to the front yard, and to the backyard. This is largely because the design intervention brought pieces of objects to the site but missed integrating them as a united, designed composition. As a consequence, people's attention is largely focused on the pavilion but not on the site as a whole. (Figure 4.27)
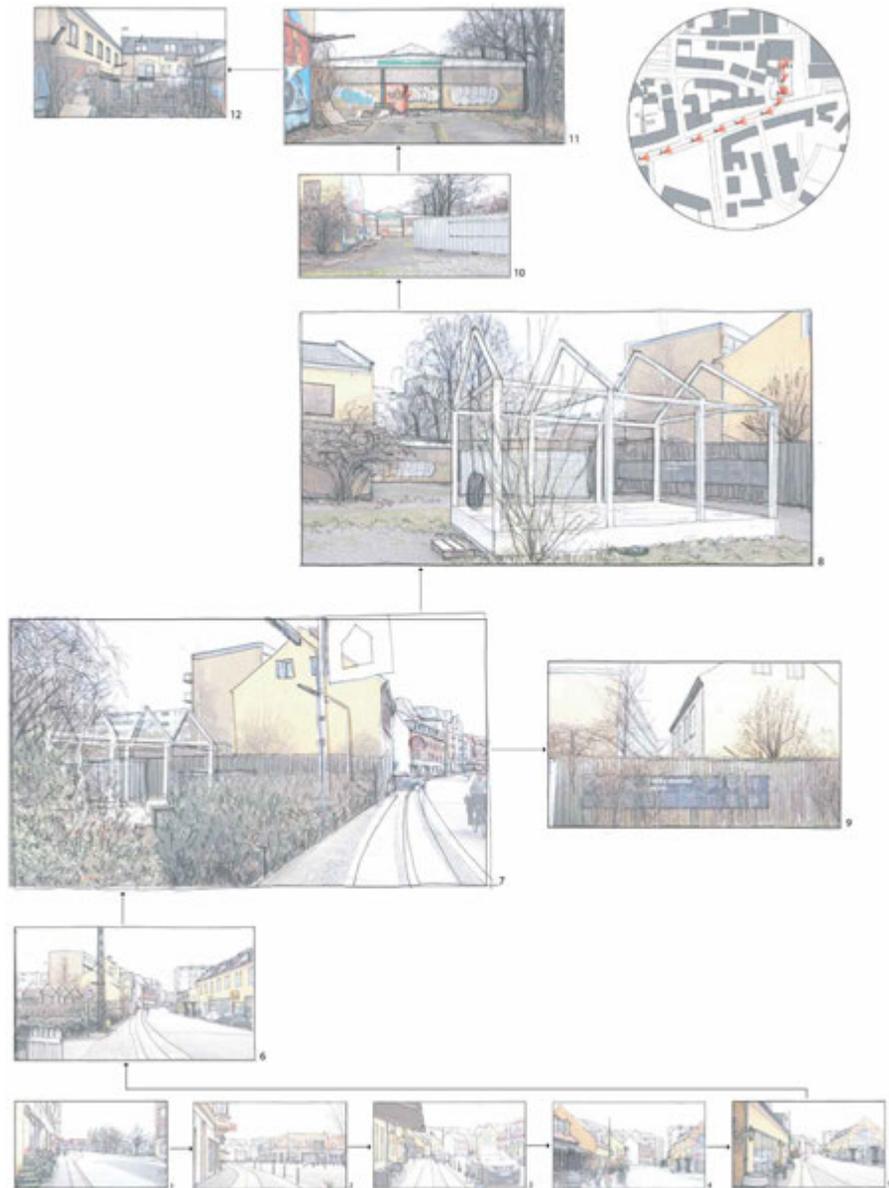
FIG. 4.27 The sequence of experiences when entering the site from Valby Langgade
Coming from Valby Langgade, one would be first attracted by the white pavilion, the signage board of the pavilion indicating the special programme of the site. The backyard is not directly perceived; when visitors arrive in the back yard feelings of the unfamiliar may arise, or a longing for something in the past.

4.6.3   Filling in and Around the White Pavilion

After the site was opened up, various objects were brought to the site for the temporary social events. Most of those objects, such as the orange cushions, the toys, were taken away after an event was finished. However, some objects stayed on site, kept for regular uses over a longer period. For example, the chalk box attached to the frame of the pavilion, the planting boxes for mini urban agricultural garden, and an exchange station for recycling used domestic items. The large mural painting was done by a local artist on the stucco wall of the building in the middle of the courtyard. Because of the temporary and informal nature of their use, these objects were often presented piecemeal on the site. TH Bar brought to the site three logistics containers in vivid colours of red and blue, as well as wooden tables and benches. A string of colourful light bulbs was hung from the frame of the pavilion, adding more vivid colours in the evening. The material world was enriched by TH Bar throughout its consecutive years of opening, facilitated by the initial structure of the pavilion. However, most objects that were introduced were lacking a designed quality, and mainly served the functional needs of the bar. In this way, the perception of the site was limited to that of an outdoor bar, less intriguing and imaginative.

4.6.4   Evaluating Design Through the Material Lens

The design of the white pavilion makes the site once again visible in the public realm. Previously, the site had been hidden behind fences and overgrown bushes, rarely sparking any public interest. The material character of the white pavilion, which both contradicted the rest of the site and was a symbol of openness and invitation, allowed passers-by to become curious about what was happening within the site. However, the design in the material lens does not fully integrating, transforming, and expressing the site's existing material characteristics. The ochre stucco façade of the existing building, the wildness, and the ruined nature of the backyard are part of the site's identity and the design was not able to knit them into the new material world of the site.

4.7 Summary: A Reserved Response

The design mainly focused on the social potential of the site, driven by the requirement of the local committee. However, because of this leading theme, it restricted the designer in their interpretation and incorporation of other qualities of the site; the design did not pay enough attention to the ecological condition of the site, nor its responses to the existing obsolete and overgrow material world. Many existing conditions were kept if they did not disturb the operation of temporary public events. From this perspective, the design intervention satisfies the interim public use, but it misses other qualities of the leftover space that would facilitate the transformation of the site in a more diverse and open-ended way.

The flaws in the design could be amended by consciously reading the site through multiple lenses. Different perspectives of reading the site won't challenge the original social agenda of the design, but they can make the designer more aware of other valuable site conditions. In doing so, the designed space can have greater capacity to trigger people's appreciation, attachment, and the desire to participate in the site transformation.

Furthermore, a concern of the design is its lack of a long-term vision. The design introduces an "opener" to initiate public engagement in temporary social events, but it does not arrange an organisational scheme for further management, largely due to the temporary nature of this project—initially this design-based research project was intended only for a very short period of time. Therefore, it is unclear during the course of the temporary uses who is responsible for organising and maintaining the social programme and who is the person that binds together the participants, etc. As a consequence, the public events constantly required the investment of the local committee, and the operation of TH Bar, to a certain degree, reduced the possibilities of other forms of cultural usage on the site. From this perspective, the design did lay a basis for social usage of the site but did not fully open up the site's potential as an interim urban open space.

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5 The Garden of the Third Landscape

5.1 Introduction

Jardin du Tiers Paysage [the Garden of the Third Landscape] is an art installation of three individual gardens: *Le Bois des Trembles* [the Garden of Aspen Woods], *Le Jardin des Orpins et des Graminées* [the Garden of Stonecrops and Grasses], and *Le Jardin des Etiquettes* [the Garden of Labels]. The three gardens sit on the roof of an abandoned submarine base in Saint-Nazaire, France. In this project, the landscape architect and garden designer Gilles Clément facilitates this neglected territory as a reservoir of diverse wild flora, an experiment on his concept *le Tiers Paysage* [the Third Landscape] (Figure 5.1).

The three gardens survive on the dry concrete roof with minimal artificial interference. The outcome of the gardens is loosely defined. The design provided only the initial ecological conditions to benefit the growth of drought-resistant vegetation. Beyond functionally satisfying the habitat condition for the new biotopes, the design plays with spatial sequence, enclosure, motif, and material, thereby enhancing the aesthetic experience of the garden and making the idea of the third landscape more expressive. The contrast between the deteriorated artifice of the submarine base and the newly established plant communities in the garden raises an awareness of humans' entangled relationship with the world of non-human beings.

For the Garden of Aspen Woods, 107 aspen trees are planted in a cubic container and placed in the defence chamber of the roof. The installation is fixed and unchangeable, to ensure specific artistic effects. In comparison, the Garden of Stonecrops and Grasses and the Garden of Labels, invite more natural processes to come into play in the transformation of the garden, and therefore present an open-ended transformation. For this reason, the focus of this case study is given to these two gardens rather than to the Garden of Aspen Woods.

Garden of Aspen Woods

Garden of Stonecrops and Grasses

Garden of Labels

FIG. 5.1 Three Gardens of the Garden of the Third Landscape
Copyright 2012 by Le Voyage à Nantes.

The study of the project started with literature research about Gilles Clément and his concept relating to the Third Landscape. In July 2018, fieldwork was conducted during my visit to Saint-Nazaire, the submarine base, the garden, the local Saint-Nazaire Carene archive, the museum Escal'Atlantic and Ecomusée, and the harbour area. During my visit, I interviewed Clément Tessier, who works in the local archive, and talked with the employees in the tourist office of the submarine base. My landlord in Saint-Nazaire provided me with information about local life in Saint-Nazaire. During my visit to the submarine base, I talked with a few people that I met on the roof, most of whom were tourists from Nantes or other French cities. I wrote down my experiences while I was walking through the bewildering concrete structure, and I did some quick sketches of the interesting details of the garden and of the roof. These intuitive and detailed site notes helped me to fundamentally analyse the garden and allowed me to gain new insights into the garden; the garden is not purely designed for ecological concern, but the design deliberately plays with architectonic details and emphasises the aesthetic experience of the garden. After returning from the fieldwork, I contacted the gardener of the project, Mathias Petitjean. He confirmed several further details of the garden, including the details of construction and principles of the garden's maintenance. This information and understanding served as the main source for the analysis of the project.

The Site Transformation

A Brief Biography of the Site

"Saint-Nazaire makes boats." These were the first words I heard from my landlord in Saint-Nazaire during my visit in the summer of 2018. Sitting at the estuary of the Loire where the river joins the Atlantic Ocean, the story of Saint-Nazaire is knitted tightly with its harbour. The early settlement of what is now the city of Saint-Nazaire was a small fishing village with about 600 inhabitants (Encyclopaedia Britannica, 2017). In the middle of the 19th century, the Loire's river corridor at Nantes was chocked up with mud, and a new harbour at the estuary area was required to let cargo ships unload their goods. Because of this, Saint-Nazaire became the first possible location in which to unload large cargos. Two harbours– Saint-Nazaire and Penhoët–were dug at the seafront in 1856 and 1881, allowing Saint-Nazaire to become an important node in maritime transportation. In 1862, the first transatlantic telegraph lines between France and South America were established at Saint-Nazaire (Saint-Nazaire, a transatlantic harbour, 2019). Saint-Nazaire became a transatlantic departure point with regular shipping lines to Central America. The famous French Line Compagnie Générale Transatlantique ran its regular lines to Mexico and Panama, West Indies and the Caribbean (French Line, The Last Ocean Lines, n.d.). At this time, the harbour area also witnessed the rapid development of major shipbuilding facilities and the first French metal-hulled ship (Saint-Nazaire, a transatlantic harbour, 2019) was built there. Even today, the shipbuilding industry still constitutes the major economic income of the city.

Its advantageous location at the estuary of the Loire played a crucial role in the urban development of Saint-Nazaire. However, this unique characteristic also led to the city's fatal crisis. During the First and the Second World War, Saint-Nazaire was recognised as a strategic node for the military service on the Atlantic seafront. In 1940, German troops conquered the city and constructed the submarine base at the harbour of Saint-Nazaire. The submarine base was used for harbouring and repairing the Germans' U-boats during naval warfare. At the end of the Second World War, the submarine base was identified as a target by the United Kingdom and France's allies. On 28 March 1942, the allies conducted the Saint-Nazaire raid, which resulted in 85% of the town being destroyed (Trueman, 2015).

The city was reconstructed in the 1950s, in a modern, functional style. In the following years, the advancement of railway transportation caused the remarkable shrinkage of marine transportation. The harbour gradually became detached from the city and was left on the periphery of the urban centre. This transition is evident in the urban plan of 1956, which shows how the previous urban axis was weakened and a new axis departing from the train station was added. The shifting of the urban axis indicates the moment that the harbour was no longer considered the crucial component of the city. Meanwhile, the post-war period witnessed large-scale urban expansion in the north and west; the previous urban periphery was developed into new residences, creating a hybrid urban landscape with a grid pattern in the centre and an irregular pattern in the outskirts. The old harbour area gradually became regarded as the back of the city, divided from daily urban life.

It was only in 1994 that the city commenced the redevelopment plan Ville Port to reactivate the harbour area. The vision was to transform the submarine base as a cultural centre and to rejuvenate the external environment of the submarine base (Guixer, 2018). A maritime museum *Escal'Atlantic*, an exhibition gallery *Le LiFE*, a concert hall *Le VIP*, and a café were to be introduced into the chamber of the submarine base. New urban programmes including a shopping centre, a theatre, and a cinema were developed on the west side of the submarine base, enhancing connections between the submarine base and the existing urban centre (Figure 5.2).

Site transformation

1940 — The submarine base was constructed by German

1945 — German retreated

1948 — Incontigently used by French Navy and several chemical industrials

Urban transformation

12000BC — Record of the first inhabitation

1380 — Saint-Nazaire became part of the Viscountcy of Saint-Nazaire

1785 — A fort was built on the order of the governor of Brittany to protect the town

1800 — The city only had one simple breakwater and light house, for navigation purpose

1835 — Saint-Nazaire became the alternate port for ships which could not access Nantes

1 — The firs 'Saint was

Landscape transformation

Pisces Era (541 to 252.2 million BC) — Formation of estuary's north border – Sillon de Bretagne

Tertiary Era (from 66 million BC) — Formation of the Estuary's south border – Pays de Retz

14 millions BC — The sea regression filled the lowest-lying area of the estuary was filled with sand and limestone

FIG. 5.2 The timeline of site transformation
The leftover situation of the site is closely related to its location at the estuary of the Loire river.

The period of design intervention

1970s
The submarine base was completely abandoned

1994
Regeneration of the submarines base with Ville-Port program

2007
Gill Clement was committed to design three gardesn on the roof

2009
The Garden of Aspen Woods opened to the public

2012
The Garden of Stonecropes and The Garden of Labels opened to the public

The British army launched the St Nazaire Raid

The entire city was razed to the ground

Establishment of the ship industry Chantiers de l'Atlantique

1942 1943 1955

1856 1857 1862 1881 1917 1940 1945 late 1940s 1960-197 1980s 1994 2012

rst wet dock t-Nazaire' as dug

1857
Railway connection between Saint-Nazaire and Nantes

1862

1881
A second dock basin was created at Penhoët

1917
United States Army came to the city, developed the town and port infrastructure

1940
The U-boat submarine base was built by German army

1945
German army surended

The city was re-built and the railway station were to be moved towards the West

1960-197
The ship building industry began to decline

1980s
Urban regeneration started, give impetus to cultural and touristic politics

1994
Ville-Port was launched

2012
The first edition of "Estuary"was launched

115000 BC-11700 BC
The course of Loire river entered into the Atlantic Ocean at a lower level, because of the sea resession

1800
Industrialization in Nantes

1837
The river corridor was chocked up with mud, making the sail dfficult to access to Nante

1857
Maritime activity moved from Paimboeuf to the north shore

1939
The estuary became one of the strategic places monitored by the German army

1974
Construction of Saint-Nazaire bridge, spaning over the Loire estuary

2013
The Loire Grandeur Nature Plan released to preserve the estuary biodiversity

The Design History

The renewed attention on the harbour germinated the project of the Garden of the Third Landscape. In 2009, Nantes' cultural institution, Le Voyage à Nantes, launched the biannual exhibition Estuaire to substantiate the link between Saint-Nazaire and Nantes, preparing to further develop a metropolitan region (Le Voyage à Nantes, n.d.). The exhibition comprised a series of open-air art collections in Nantes, Saint-Nazaire, and along the bank of the Loire between the two cities. The first edition of Estuaire took place in 2007, the second was launched in 2009, and the third edition was in 2012. Gilles Clément was invited to design a public garden in Saint-Nazaire as part of Estuaire's collection in 2009. The designer decided to establish a garden on the vast concrete roof, exposing the abandoned roof as a place of wild ecology that could survive in such hostile living conditions. A "triptych" of three separate gardens was established on the roof (Saint-Nazaire Roof of the submarine base, n.d.), demonstrating how nature could transform this silent legacy of World War II.

Gilles Clément's concept of the Third Landscape is the guiding theme for three gardens. According to Clément, the Third Landscape evolves from the existing site, and would "escape monoculture and [be] forgotten by human industry" (Clément, 2004). Consequently, these places offer a refuge for diverse wild life, enhancing the biodiversity of the city, and which Clément describes as "a source of imagination and the guarantee for the future" (Gilles Clément *Le Jardin Planétaire,* n.d.). The presence of the Third Landscape suggests that human beings have a shared responsibility to nature, accepting that everyone is a gardener of our planet and should learn to work with nature's own process, to do "as much as possible with and as little as possible against" (Gilles Clément *Le Jardin en Mouvement,* n.d.), and to facilitate diverse forms of life in our existing living environment.

The three gardens each have its own theme. The Garden of Aspen Woods was installed in the reinforcement chamber of the roof, where 109 aspen trees were randomly placed. The sound of the wind blowing through the aspen leaves represents the trembling of the submarine base during an air raid (Bouliou, 2015). The Garden of Stonecrops and Grasses was made in the middle of the roof, in the cavity of a parallel concrete reinforcement wall. The drought-resistant species were planted with only a shallow layer of substrates in the planting bed. The Garden of Labels was established in a sunken pit in the southern flat open area of the roof. In this garden, only new substrates were added, leaving the garden to be inhabited by the seeds brought from wind, birds, or human visitors. The garden was realised through the cooperation between Gilles Clément and the French-based landscape design office, Coloco (Coloco, 2009).

5.2.3 The Process After the Design

The Garden of Aspen Woods first opened to the public in 2009, and the Garden of Stonecrops and Grasses and the Garden of Labels were inaugurated in 2012 (Bouliou, 2015). All three gardens are maintained in a minimal manner. The maintenance work is carried out by Le Voyage à Nantes and Saint-Nazaire's metropolitan green spaces department. The gardener Mathias Petitjean was hired to check the gardens from 2010 to 2013. Detailed aspects of the garden's maintenance will be discussed in *5.6.4 Loose Maintenance*. Water was given to the Garden of Aspen Woods only during the drought season, while the Garden of Stonecrops and Grasses was regularly checked and maintained with moderate weeding and watering during the garden's earlier years (Petitjean, 2010). The Garden of Labels was deliberately kept from artificial maintenance, letting those adaptive species stay in the garden. Twice a year, from 2010 to 2015, newly emerged species were identified and labelled by students from Lycee Jules Rieffel (High school of General, Technological and Professional Agriculture). The white labels show the evolution of the garden's spontaneous succession. During my visit in 2018, the Garden of Stonecrops and Grasses was weeded only twice a year, and the irrigation canal running through the planting bed was dry. The appearance of the garden was less elegant than when it was first established, as adaptive species such as *Centranthus ruber* (red valerian), *Euphorbia characias* (mediterranean spurge), and several types of grasses became dominant in the garden.

5.3 The Morphological Lens: Anchoring the Fortified Roof

5.3.1 The Estuary and the Alluvial Plain

The landscape of the Loire estuary, where Saint-Nazaire is located, consists of an alluvial plain with an undulating terrain of marsh area and low hills. The river Loire is the longest river in France, extending to 1,012 kilometres in length. The river originates at Mont Gerbier de Jonc in the southern France and flows northwards and then westwards, irrigating a large territory of France until it finally discharges to the Atlantic Ocean at the Bay of Biscay ("Loire River | Location, Cities, & Facts," 2008). The geology of the estuary area is part of Armorican Massif, which is a geographical structure that covers a large part of France including Brittany, west Normandy and the Loire estuary ("Saint-Nazaire," 2018). The formation of Armorican Massif could be traced back to around 300 million years ago (Encyclopaedia Britannica, 2008). In the tertiary age, the marine incursions filled up the low-lying areas of the riverbank with sand and limestone. The following sea recession in the last two million years added a layer of fine sediment on the top. The landscape of Saint-Nazaire is part of this alluvial plain and is attached to a piece of low hill at the south-west. The northside of the city is a low-lying marsh area, below sea level. The south and east sides of the city are embraced by the sea, with a continuous shoreline connecting the ocean and the north bank of the Loire. This structure of flat plain within a wider undulating terrain can be observed in the garden; in the Garden of Labels, the ground is shaped into an undulating surface, with a passage in the middle and minor mounds at two sides, thereby representing the landscape topography of the region (Figure 5.3).

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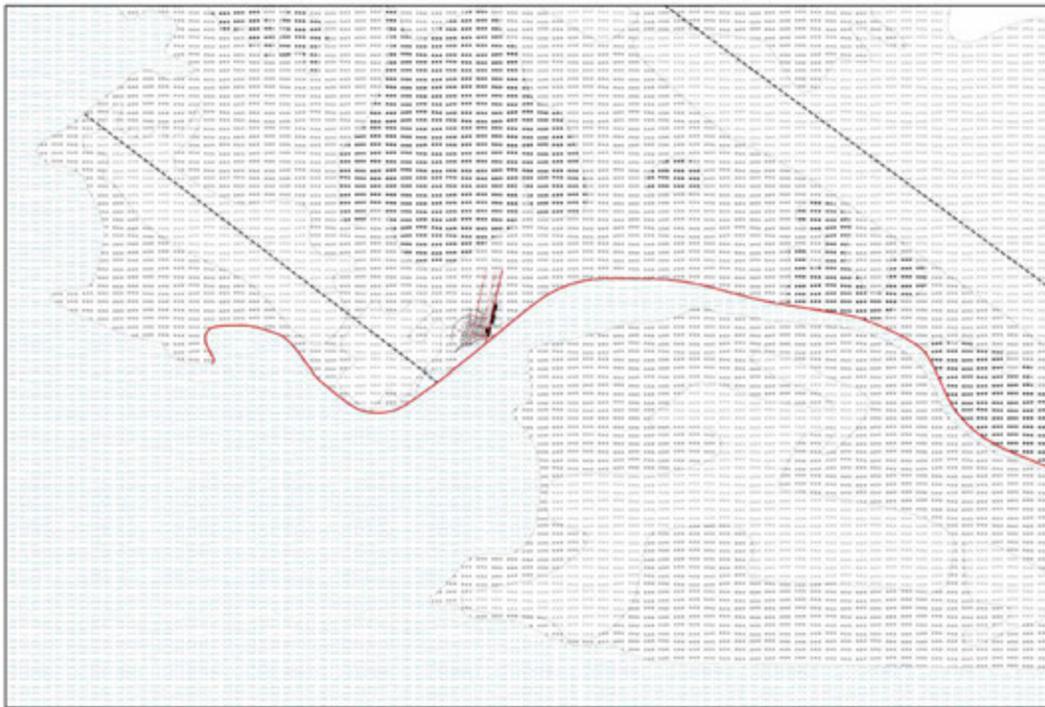
	The Bay of Biscay, Atlantic Ocean: 0m
	Hercynien mountain chain: 30 – 80m
	The flood plain: 0 – 30m
	marsh: -2 — 0m

FIG. 5.3 The structure of the landscape topography
The landscape of Saint-Nazaire is a rather flat alluvial plain, with the remaining mountain range of Hercynian in the south and the meandering shoreline in the east. The construction of the harbour, and the subsequent urban layout, respond to the curve of the shoreline.

The Transformation of the Urban Pattern

The historical town of Saint-Nazaire was tightly connected to the harbour. For a long period, Saint-Nazaire remained a small village on the estuary of the Loire. The evident growth of the town was triggered by the construction of the harbour of Saint-Nazaire and Penhoët. In the town expansion plan of 1852, an urban axis was drawn from the central line of the harbour basin of Saint-Nazaire, as the organising principle for the whole city (Ville de Saint-Nazaire, 1952). After World War II, the gateway to the city was no longer the harbour but instead the train station, and the original urban axis was replaced by two new axes in the urban reconstruction plan of 1952. One the new axes departed from the new train station, and the other axis, perpendicular to the first one, was parallel to the original axis from the harbour but shifted 200 metre to the north. This new axis was made into an urban main road, directly connecting to the newly developed residential area in the north. Over the last two decades, rapid urban expansion has made the urban pattern even more irregular, detaching from, and in contrast to, the grid geometry of city centre. The previously close relationship between the city and the harbour can hardly be traced.

We can find in the current urban pattern different responses to the landscape; the layout of the city centre follows the logic of the harbour, forming an angle approximately 45 degrees to the shoreline. The south part of the urban zone, which comprises the later urban development that is independent of the logic of harbour, is laid out in parallel to the shoreline. In this part, a meandering boulevard along the beach allows for a direct visual corridor to the sea (Figure 5.4).

Urban Context

The submarine base lies to the west side of harbour of Saint-Nazaire, occupying a small square-shaped basin, affiliated to the bigger basin, for the purpose of mooring ships. The east side of the submarine base is the harbour's industrial area and to the south side is an empty square with an abandoned warehouse from the previous transatlantic carrier Compagnie Générale Transatlantique (Riko St.Naz, 2011). The space was left empty because of the construction of the submarine base. As the size of the submarine base was twice as wide as the original basin, the office buildings of the Compagnie Générale Transatlantique to its north and south sides were demolished, leaving this piece of in-between space. On the west side of the submarine base is an urban regeneration area, where a new urban square and a shopping street were made to re-introduce the city to the harbour area. The layout of the new square and shopping centre reintroduce the previous urban axis from the central line of the harbour.

The urban context of the submarine has distinctive components: the vast sea, the flat, horizontal industrial warehouse, and the large volume of the newly constructed shopping mall. In this hybrid composition, the submarine base offers a connection between the historical area and the new urban area, mediating and joining separate urban components (Figure 5.5).

Time line_transformation of urban pattern

Bronze Age   1700s   1835   1856

Transformation of urban pattern

The major shift_ altering main axis and train line

Three morphological pattern: natural landscape, urban landscape and metropolitan landscape ——— pattern derived from
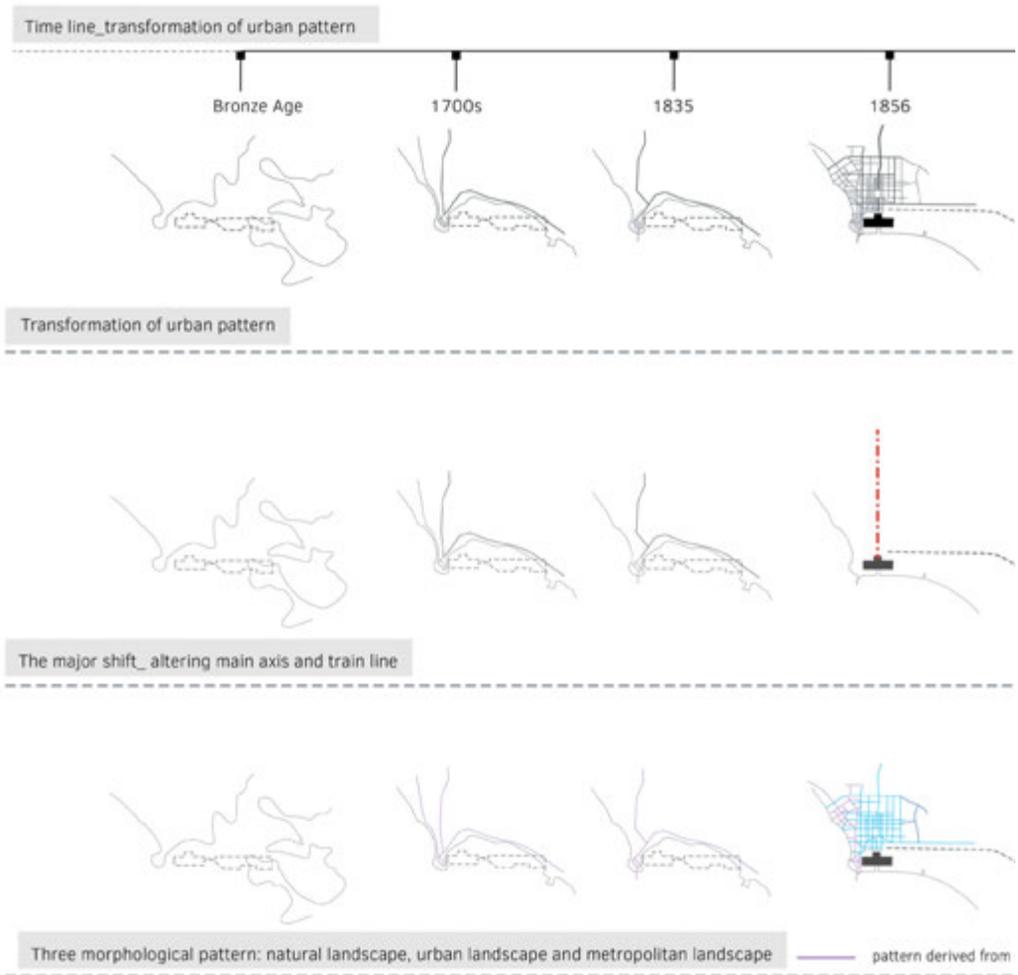
FIG. 5.4 The transformation of urban morphology
The downturn in maritime industry changed the relationship between the harbour and the city. After the railway became the dominant transport connection, the urban centre was gradually detached from the harbour.

Air raid from the ally, the whoe city was bombed

1881   1928   1952   2018

derived from shore line ——— pattern derived from urban grid ———|— pattern derived from urban expansion
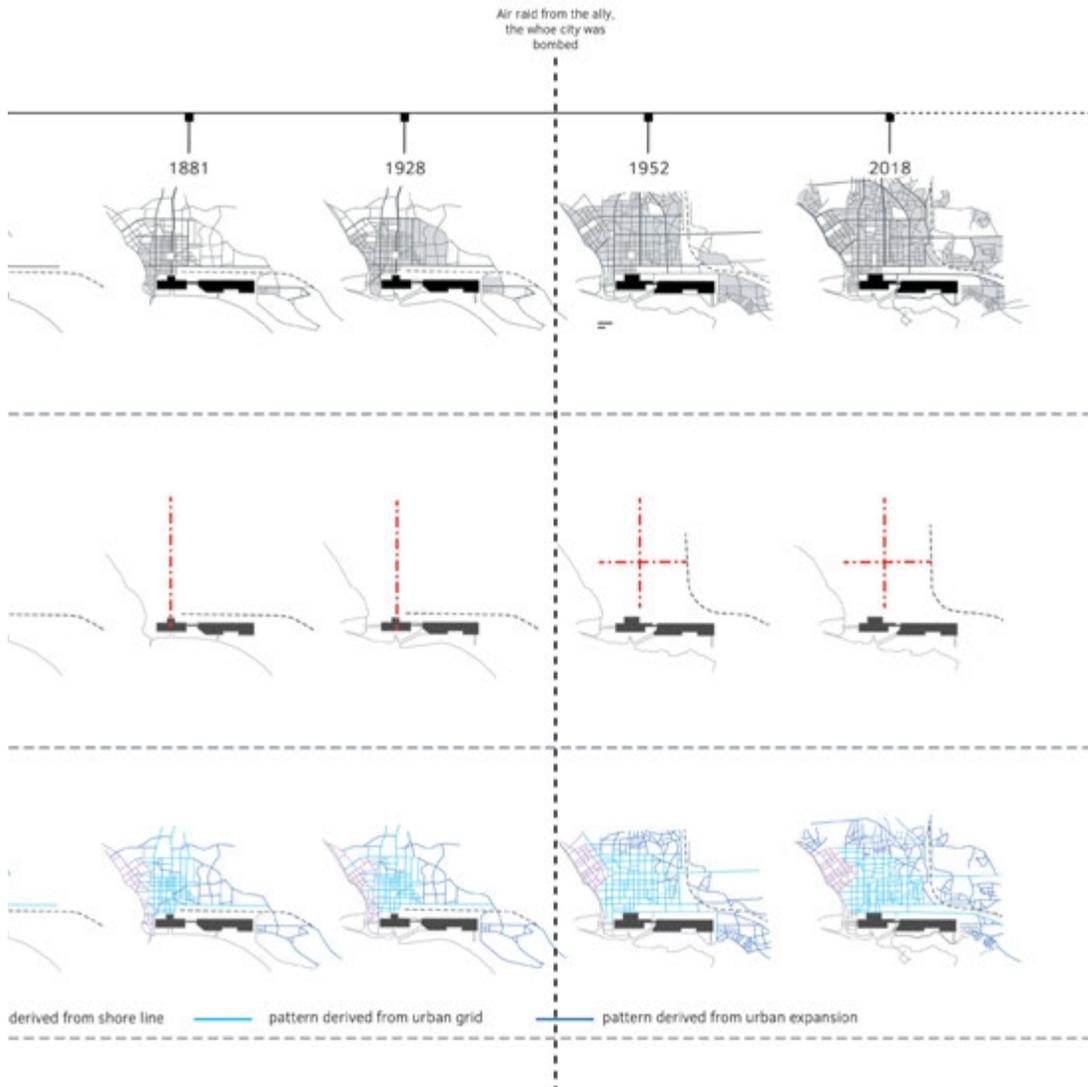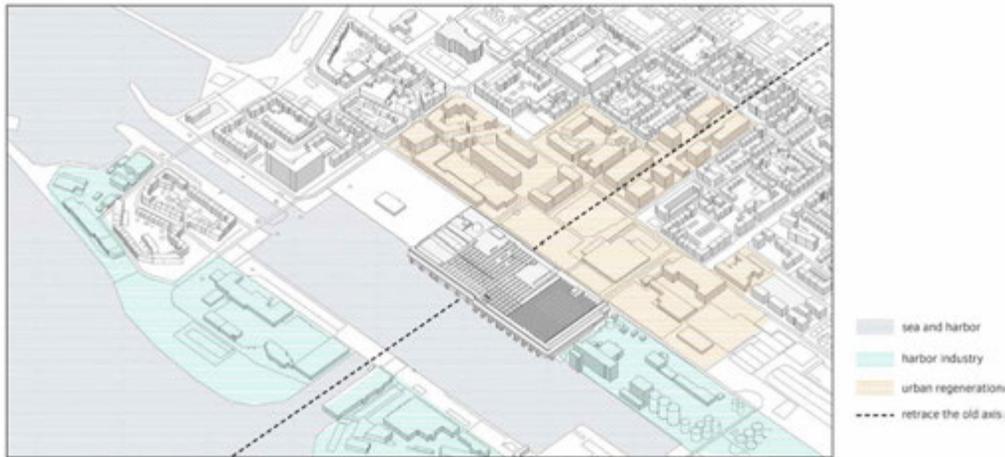
FIG. 5.5 Surrounding spatial context of the submarine base
To the east and south sides of the submarine base, the urban morphology presents an obvious contrast: the flat, fragmented industrial zone in the east and the compact layout of the urban regeneration programme in the west.

5.3.4   The Submarine Base

The volume of the submarine base is 126 metre long, 300 metre wide, and 17 metre high. The base constitutes 14 submarine pens. Pens number one to number eight are dry docks, each is 92 metre long and 11 metre wide; pens number nine to number14 are wet docks, 62 metre long and 17 metre wide (The U-boat base in St-Nazaire, 2019). On the roof of the submarine base, German troops added a re-enforcement structure to protect the submarine base from the air-raids during the war. The defence structure consists of three layers. The first layer is established on top of the concrete roof. Small concrete beams, arranged into V-shape grids, are placed and further filled with two metre of concrete. The second layer consists of thick supporting concrete walls, about two metres high and 1.5 metre thick. The last layer comprises horizontal concrete beams placed on top of the concrete walls to offer a hollow space that would relieve the impact from an explosion (Roof U-boat base, 2019).

The construction of this defence system was not finished before the war ended. Therefore, only the northern part of the roof has a completed three-layer defence structure. The middle area only has two layers of the defence structure, with 19 concrete walls, two metre high, running parallel to each other. The south area only has the first layer of the defence structure, and is flat and open (Figure 5.6, 5.7).
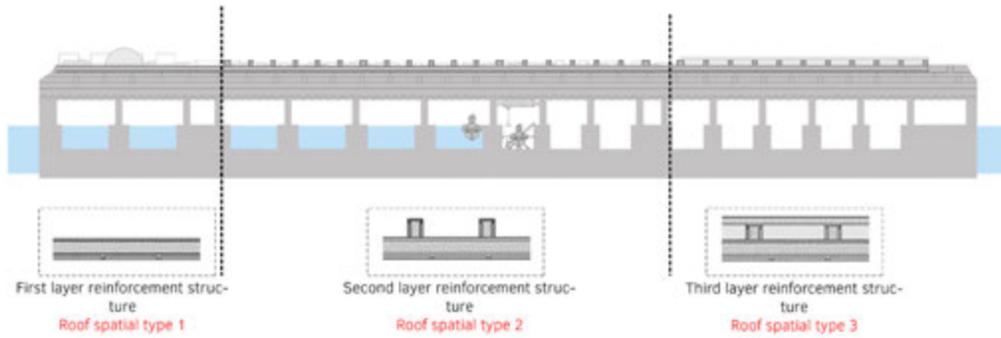
FIG. 5.6 The section of the submarine base
The section of the submarine base. The reinforcement layer yields a thick volume on top of the existing enormous submarine base. Three stages of construction divide the roof into three zones, each with its own spatial characteristics.

FIG. 5.7 The aerial image of the roof
Different stages of construction present themselves as distinctive spatial forms on the roof. Copyright 2012 by *Le Voyage à Nantes.*

The most featured structure on the roof is the thick concrete walls running parallel to each other. The distances between the walls are not consistent but have three variations, which is probably incidental since the construction of the defence layer was only concerned with simple functionality. Gaps can be found in each row of the concrete wall. Most gaps are irregularly positioned, only a single row in the middle runs continuously from south to north. The design of the Garden of Stonecrops and Grasses punctuates this feature, which positions ten planting beds in a way that allows for the continuous line of gaps running through the middle of planting beds. A higher panoramic terrace of the fortified lock can be found at the middle of the east ramp, marking the geometric axis of the roof (Figure 5.8).

gaps - in-between walls - 5.6m
gaps - in-between walls - 6.3m
gaps - in-between walls - 8.6m
gaps - irregular breaks of walls
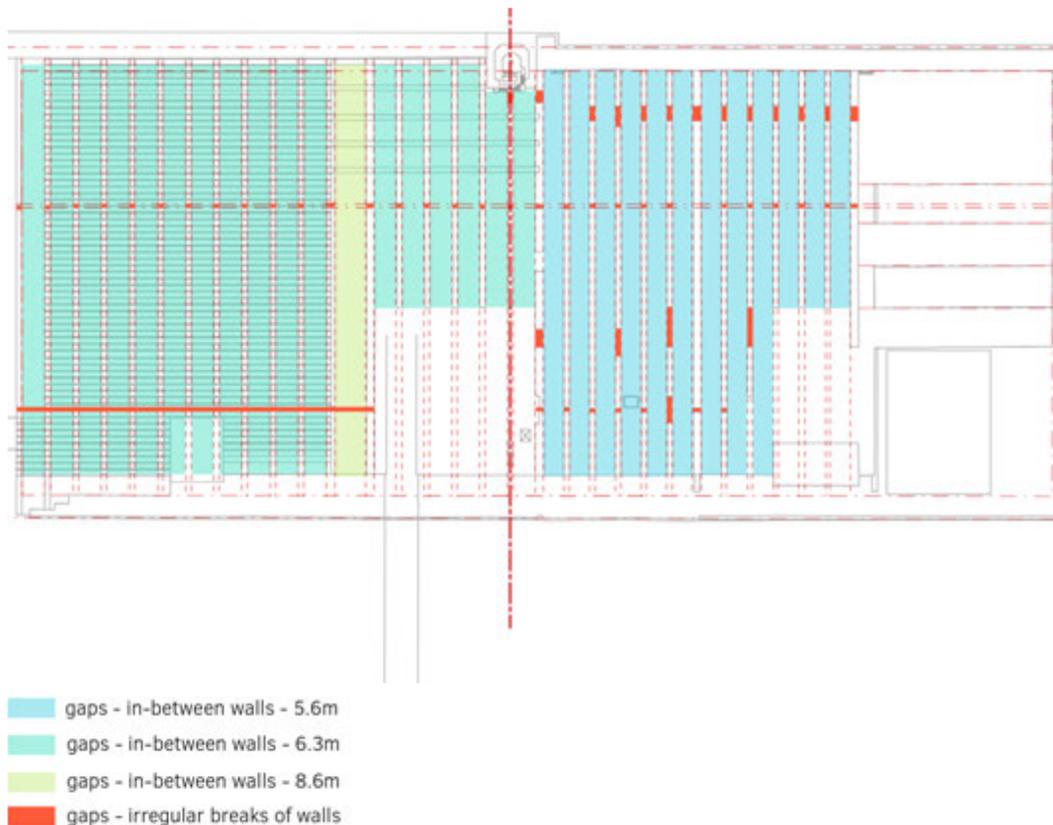
FIG. 5.8 The geometric form of the roof
The gaps within the concrete walls are not the same but are in three different sizes. Only one row of gaps in the middle of the roof continues from south to north, perpendicular to the central axis of the submarine base that extends from the fortified lock.

5.3.5 The Position of Three Gardens

The three gardens are positioned in the north, middle, and south parts of the defence system on the roof. The Garden of Labels is located in the zone of the first defence layer, on the south part of the roof. The design establishes the garden in a sunken pit, 12 metre wide and 51 metre long. The Garden of Stonecrops and Grasses sits in the zone of the second defence layer. The garden comprises ten separate planting beds, each one inserted between two parallel concrete walls. The Garden of Aspen Woods is designed in the zone of the third defence layer, where 107 aspen trees were planted in the rectangular planting box and placed randomly in the hollow chamber (Figure 5.9).
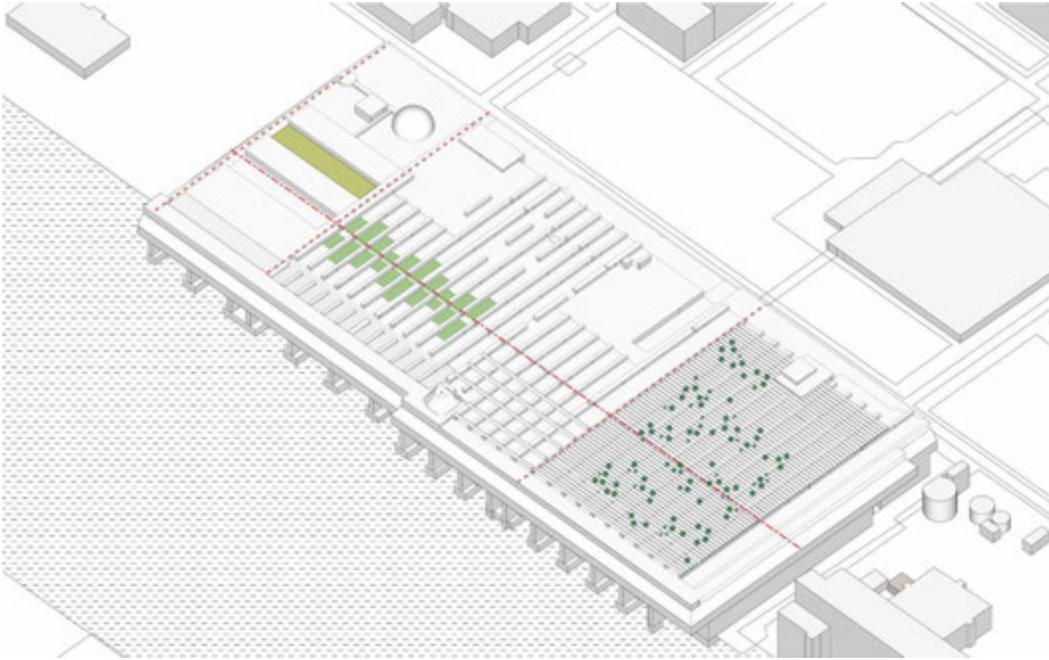
FIG. 5.9 The position of the three gardens within the spatial structure of the roof
Three gardens were inserted in three spatial zones of the roof and integrated with the existing spatial characteristics, thereby exposing the layers of the defence structure.

The Geometrical and Spatial Characteristics of the Garden

The Garden of Labels is designed in a winding pattern composed of four main curves. The width of the sunken pit is 12 metre and the length is 51 metre. The designed curves are placed in a such way that they evenly divide the length of the site into four sections. Each section is 12 metre, equal to the width of the sunken pit. In addition, the design fully uses the two metre sunken space; seven mounds were moulded in the garden's layout, with heights varying from 0.5 metre to two metre. The height of the highest mound equals the depth of the sunken pit. These mounds, introducing an undulating motif, further enhance the winding pattern of the site. This layout largely diversifies the ecological condition of the sunken pit, the mechanism of which will be explained in the section *5.4.2 Diversifying the Habitat Condition*. The slopes further emphasise the elongated enclosure of the space, enhancing a north-west visual connection (Figure 5.10).

In the Garden of Stonecrops and Grasses, ten planting beds were added between the concrete walls. The lengths of the planting beds have three variations: the short one is five metre long, which is approximately equal to the distance between the concrete walls; and the middle one is 10 metre, twice the distance of the gap between the concrete walls. The longest bed is 15 metre, which is three times the gap width. In this way, the layout of ten planting beds offers a rhythm that responds to the existing proportions of the concrete walls (Figure 5.11).
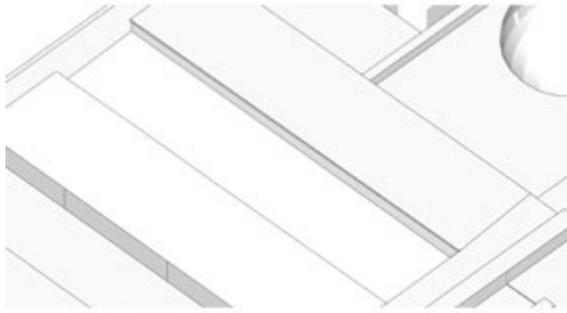
The site
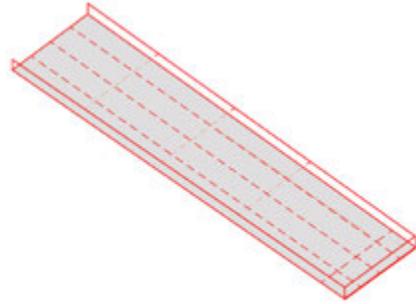
Dividing the grid
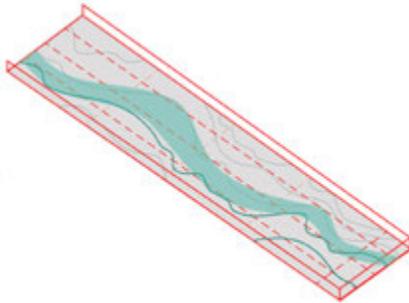
Wiggling the middle line
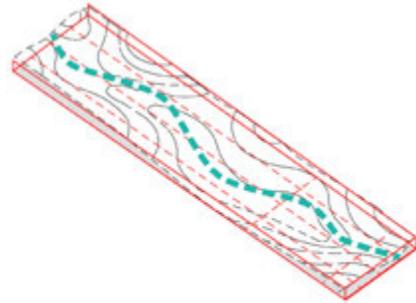
Narrowing down to the axis
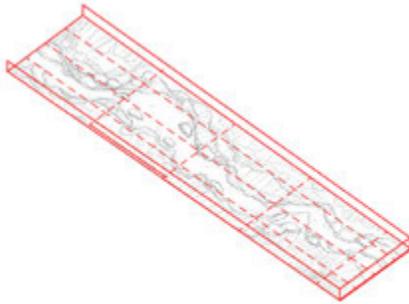
offsetting the pattern
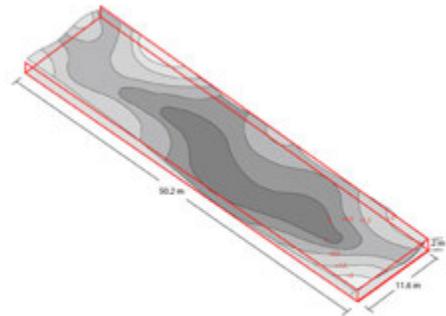
Pulling up the vertical dimension

FIG. 5.10 The design evolution of the Garden of Labels
Although presenting a natural image, the design arrangement of mounds and winding path of the garden follows the proportion of the sunken pit

The site existing

Withdrawing the geometry

Aanchoring the planting beds

Inserting the canal

Spanning the footbridge
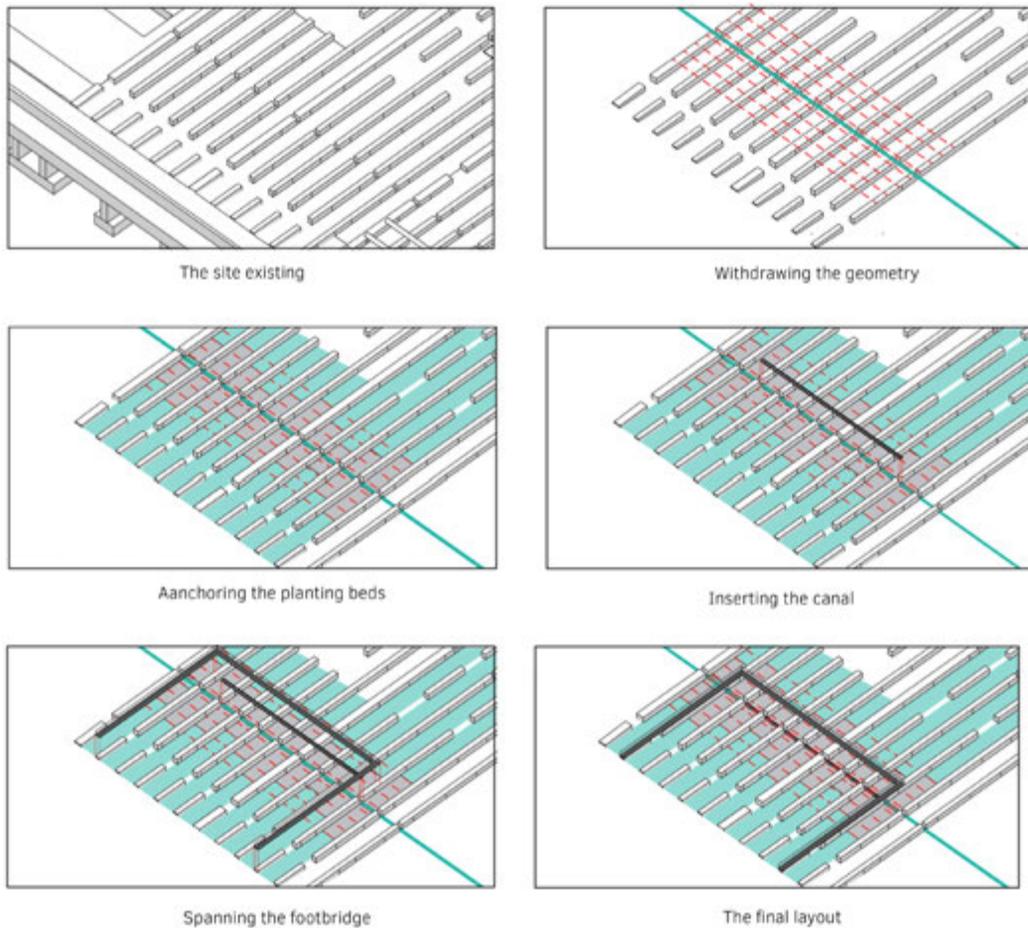
The final layout

FIG. 5.11 The design evolution of the Garden of Stonecrops and Grasses
The elements of the garden, which include ten planting beds, a canal, and a footpath form a composition that punctuates the original layout of the concrete walls and the gaps within

The design further animates the continuous gaps running through each concrete wall: the planting beds are placed in a way that allows the gaps to stand in the middle of planting beds. A thin canal was added to line up these gaps and cut across the middle of each planting bed. In this way, it frames a long and narrow sightline in north-south direction. This sightline is perpendicular to the sightlines shaped by each parallel concrete wall that extends to the town and to the harbour area. A footbridge was added on top of the concrete walls, spanning over the planting beds in the middle. This interplay of planting beds, canal, gaps, and concrete walls introduces dramatic moments in the spatial experience of the garden.

The experiential qualities of the garden will be further explained in the section *5.6 Material Lens: Speaking the Deterioration with Natural Growth* (Figure 5.12).

FIG. 5.12 The canal of the Garden of Stonecrops and Grasses
The sightline through the gaps of concrete wall is strengthened by a continuous canal. The canal also provides moisture to the planting beds. Copyright 2013 by S. Kaal.

5.3.7 Evaluate Design Through the Morphological Lens

The design does not change the existing layout of the defence structure but deliberately places the design components in a way that utilises and further exposes the morphological characteristics of the roof. Through playing with the spatial enclosure, the motif, and the sightline, the design further introduces to the visitors the location of the submarine base in its contextual urban fabric. The defence structure, representing the story of the submarine base, is now utilised and interpreted in the composition of the garden as part of its ordering principle.

5.4   Ecological Lens: A Habitat for Wildness

The primary attention of the design is given to ecological aspects. The spontaneous succession of wildness is facilitated by minimal artificial intervention. The design prepares only the initial conditions of the garden and leaves the future process to be taken by nature. The starting point of the design is to understand the micro-climate on the roof, rather than selecting plants for the garden. The newly established biotope represents both the estuary ecology and the micro ecological conditions on the roof.

5.4.1   The Estuary and its Wetland

An estuary does not present a specific geological boundary. Instead, it refers to an area with a salinity condition where the fresh water mixes with brackish water. The estuary ecology is characterised by its biological richness, granted by its unique condition of seasonal and tidal change. Dynamic water flows from various habitations with different levels of moisture and salinity. The water flow is carried in two directions: longitudinal along the river bank, forming an exchange of downstream water and upstream water, and transversal from river to the inland, where the salty water from the ocean meets the fresh water from the mountain runoff. The two gradients result in a mosaic of habitations, about one hundred types, forming a patchwork for accommodating a wide range of flora and fauna.

The most valuable habitat in the estuary of the Loire is its wetland, which in total is approximately 20,000 hectares. More than 700 species of plants are distributed here, depending on differences in moisture and salinity. In addition, there are about 230 species of birds that live, breed, or migrate here. It is also a channel for fish migration between river and sea. These fish grow in the river while laying their eggs in the sea or vice versa, growing in salty water while breeding in freshwater. The estuary, as a transition zone between river ecology and maritime ecology, provides indispensable habitats for a variety of species.

The Micro-climate on the Roof

The climate of Saint-Nazaire is mild and humid throughout the year. In the winter the highest temperature is around 9 °C, while in the summer the highest temperature is around 24 °C. In general, the annual average temperature is around 11.7 °C. Rainfall is abundant, even in the driest month, and precipitation is relatively evenly distributed throughout the year, however, there is slightly less rainfall during the summer and a bit more in autumn.

Although the estuary climate is humid and temperate, the micro-climate on the roof of the submarine base is drastically different. The roof is covered by concrete and fully exposed to the radiance of the sun. It can be extremely hot on a summer afternoon, a result of both the solar radiation and the heat reflected from the floor. The spatial structure on the roof is fairly flat and open, providing hardly any wind shelters. Because of the strong sun radiation and wind, water can evaporate quickly, causing the micro-climate here to be extremely dry. The concrete floor doesn't provide any substrate that allows seeds to imbed themselves and let their roots to grow. Although the living conditions are extremely inhospitable, some species still can be found, for example *Umbilicus rupestris* (navelwort) which grows in the crevices of the concrete where the humidity level is slightly higher (Figure 5.13).

FIG. 5.13 The existing plants found on the roof
Tiny plants inhabit the shade or the crevices of the concrete surface, resisting the dry micro-climate on the roof.

Diversifying the Habitat Condition

To allow new biotic communities to inhabit the concrete roof, the design starts from the existing ecological conditions of the site. In the Garden of Stonecrops and Grasses, the design fully utilises the shade of the concrete wall to provide the plants with relief from the sun. The planting beds fully occupy the space between each set of two parallel concrete walls and have a depth of 25 centimetre to hold a thin layer of substrate. The substrate consists of rubble stones and sandy soil; the varied porosity of these two substrates diversifies conditions for different type of plants. A narrow canal was inserted into the continuous gaps in the concrete walls and was filled with rainwater that had been recycled and restored in the submarine base. Tiny tubes were installed to send water from the canal to the planting beds. The footbridge projects extra shade on to the planting beds, preserving crucial humidity for the plants. In the report of gardener Petitjean in the first year after the garden's construction, he suggested the planting beds in the shadow of the footbridge performed better than other planting beds (Petitjean, 2010) (Figure 5.14).

In response to the harsh conditions of the roof, plant species with drought-resistant physiological properties were selected. Those species are mainly from the Crassulaceae and Gramineae families. For example, *Sedum spectabile*, and *Sedum pachyphylum* (belongs to Sedum genus, Crassulaceae family) and *Stipa tenuifolia*, *Molinia caerulea,* and *Melica ciliata* (belongs to Gramineae family). Some other species were selected because they can adapt to rocky conditions or tolerate dry and low nutrient soils, for example *Euphorbia characias* (drought tolerant), *Armeria maritima* (grows in coastal areas, tolerates dry, sandy, saline conditions), *Erigeron karvinskianus* (grows in crevices in walls or paving), and *Dianthus deltoides* (able to grow on rocky ground) (Lyceé Jules Rieffel, 2016). What is worth mentioning is that the selection mixes native species and exotic species. *Sedum acre*, *Buddléia* sp., *Viburnum tinus*, *Salix caprea*, *Juncus effusus*, and *Rubus fruticosus* are native to the estuary area. Other species were selected because of their aesthetic effects. Planting schemes in each bed were made to allow the planting beds to be distinguished from each other, and the combination of species diversifies the garden's image in different seasons.

light & shadow: June 21 9:00 am

light & shadow: June 21 12:00 pm

light & shadow: June 21 6:30 pm

water

substance

wind
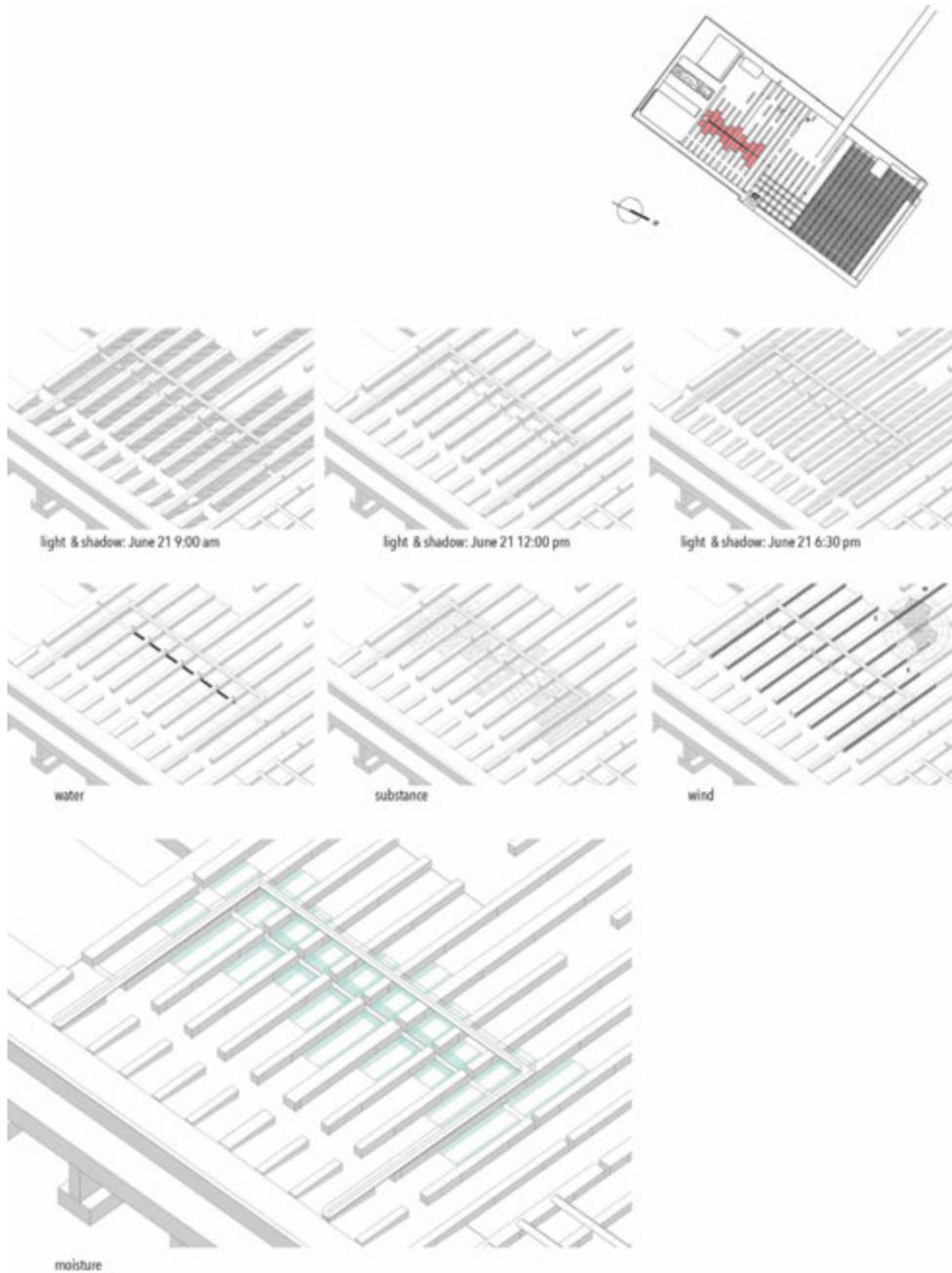
moisture

FIG. 5.14 The ecological conditions of the Garden of Stonecrops and Grasses
Taking advantage of existing defence structure, the design provides the most essential conditions—shade, moisture, and substrates – for drought-resistant plants to inhabit on the roof.
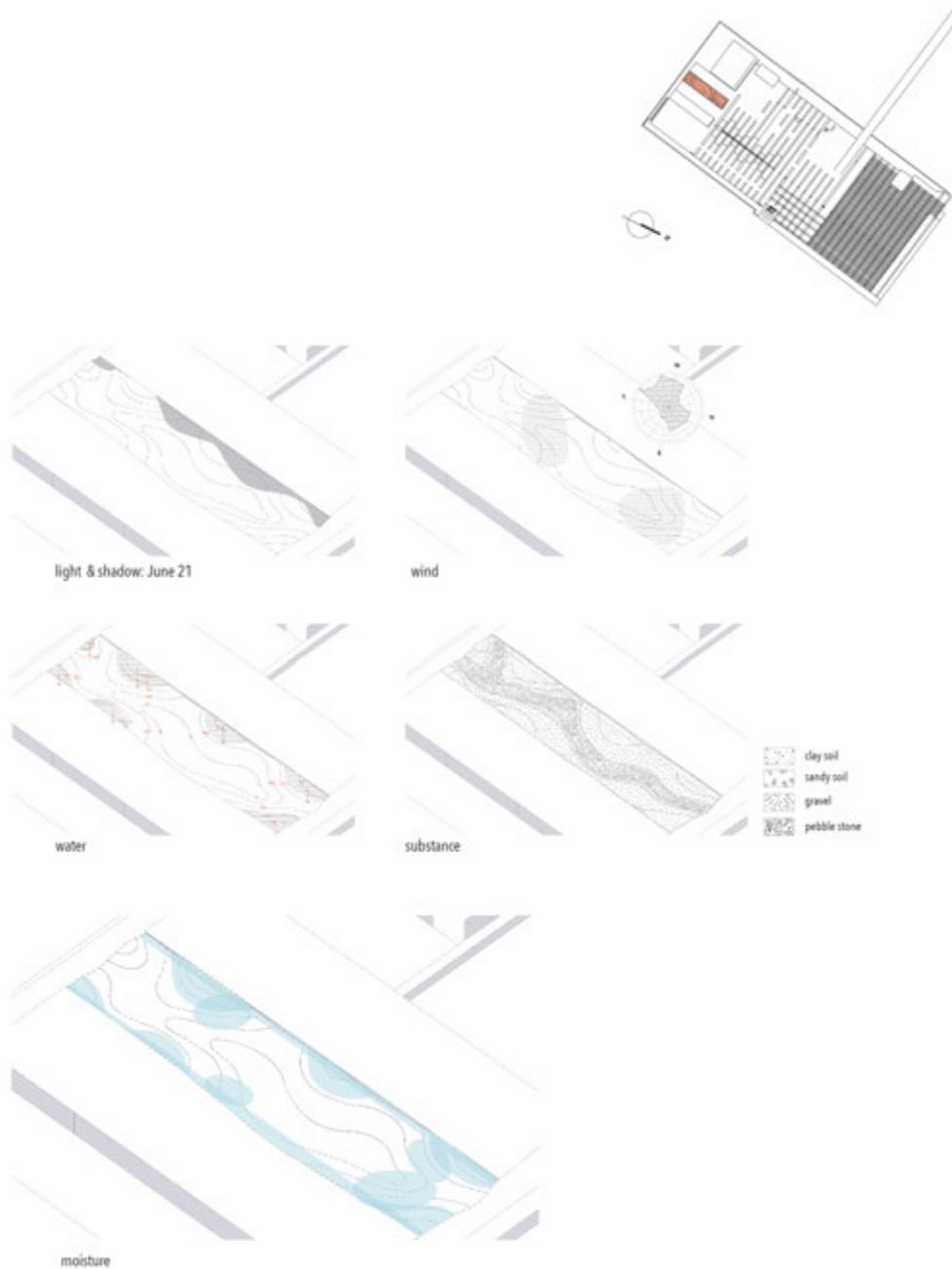
FIG. 5.15 The ecological conditions of the Garden of Labels
The design improves the ecological conditions of this sunken pit by laying different types of substrates and shaping them into mounds with varied heights. This minimal intervention effectively creates a gradient of the moisture on site.

In contrast to the Garden of Stonecrops and Grasses, the Garden of Labels does not introduce new plants to the site. The design deliberately manipulates the ground substrates and in doing so augments the diversity of the living conditions. New substrates, shaped into several mounds, were added to the sunken pit. The mounds project shade on to the ground, differentiating the moisture content of the new habitat. Besides modelling the terrain, the design divides the substrates into four types: clay soil, sandy soil, gravel, and large-grained pebbles. The combination of mounds and diversified substrates enlarges the gradient of moisture; the top of the mound is filled with clay soil. This is the thickest layer and the clay is the most compact substrate. Therefore, it has the capacity to maintain a higher level of moisture. In contrast, the lower part of the mound is filled with pebbles. It is a thin layer, and the pebble does not hold water. For this reason, the moisture level here is relatively low (Figure 5.15).

5.4.4 The Succession of the Gardens

The successions of the two gardens are recorded in the report of gardener Mathias Petitjean and by the students from Jules Rieffel high school. On 13th August 2010, a year after the establishment of the garden, Petitjean visited the garden and recorded the performance of plants. In the Garden of Stonecrops and Grasses, the growth conditions were not favourable; nearly half of planted plants were dead. Among the ten planting beds, the two in the middle (bed number six and bed number seven) had the highest rates of survival, while bed number one and bed number nine witnessed the greatest loss of plants. This was mainly due to the fact that the middle beds benefitted from the additional humidity of the adjacent beds, while the beds at two ends suffered heavily from drought (Figure 5.16).

In the Garden of Labels, according to the record of students from Jules Rieffel high school, 50 new species emerged in the year following the construction of the garden. After five years, in 2015, 93 species were identified on site. Most species that had emerged at the beginning stage had disappeared after five years. In the survey of 2015, 43 species found in previous years had disappeared, while 51 new species were identified. At the beginning stage, the species comprised only annual or perennial therophyte plants, which survive in unfavourably cold or dry seasons in the form of seeds, while by 2015 woody plants had appeared on site. In five short years, an ecological evolution had already been displayed on site (Figure 5.17).

FIG. 5.16 The transformation of the Garden of Stonecrops and Grasses
From left to right: the garden in 2012 and in 2018. The sedums that adapted to the site conditions started to spread and wild grasses started to inhabit the garden, competing with the original plants in the garden.
(Left: Copyright 2012 by *Le Voyage à Nantes*, right: Copyright 2018 by Author).

FIG. 5.17 The transformation of the Garden of Labels
From left to right: the garden in 2013 and in 2018. More woody species can be found on site and more species of grass became dominant. Over a period of 5 years, an ecological evolution had taken place on the site. Left: Copyright by 2012 *Le Voyage à Nantes*, right: Copyright 2018 by Author.

5.4.5 Evaluate Design Through the Ecological Lens

The design, with minimal intervention, diversifies the living conditions to allow dynamic ecological processes to take place on the roof of the submarine base. Considering the hostile living conditions on the roof, the design did not modify the existing conditions extensively but adapted the built structure of the roof to effectively improve the habitat conditions. The most decisive factor for the successful inhabitation of new plants is their own inherent capacity for resistance to drought and strong sun radiance, the intervention undertaken by the designer facilitates a more diverse group of species to inhabit on site. In this way, the design does not change the abandoned roof into a refurbished place of nature, but it engages the spontaneous agencies of site adaptive species, and carries out the transformation of site with surprise and unexpectedness.

TOC

5.5 Social Lens: A Destination for Foreign Visitors

Two public projects laid a foundation for the design assignment of the garden. The first project is the regional touristic programme, Estuaire which intended to enhance the connection between Nantes and Saint-Nazaire. The second public project is the urban regeneration project Ville-Port, launched by the municipality of Saint-Nazaire, which aimed redevelop the submarine base and the surrounding harbour area into a new urban cultural centre.

The two projects were organised by different authorities: Estuaire was initiated by the touristic institution, Le Voyage à Nantes from the city of Nantes, while Ville-Port was developed by the local government of Saint-Nazaire. A lack of cooperation between the two organisations could be observed from the relationship between the garden and the submarine base. The visitors to the garden are mainly tourists from Nantes rather than local citizens. The local citizens of Saint-Nazaire mainly know and visit the museum and gallery in the basement of the submarine base rather than the garden on the roof.

5.5.1 Estuarire

Estuaire, the biannual contemporary artwork exhibition, follows the regional urban development agenda that intended to join Saint-Nazaire and Nantes as one metropolitan region. The project held an exhibition three times—in 2007, 2009, and 2012. After each year's exhibition, some art projects were kept on site, joining the later exhibitions. Altogether, there were 30 art installations between Nantes and Saint-Nazaire. These artistic works were created in-situ, and could be reached on foot, by bike, by car, or by cruise, as the gateway to discover the particular characteristics of the estuary landscape. The themes of the art works cover the topics that explore the natural and cultural resources in the region, ranging from wildlife reserves and industrial buildings to maritime heritage (Saint-Nazaire Roof of the submarine base, n.d.) (Figure 5.18).

FIG. 5.18 The art collections of Estuaire
After each exhibition, some art works stayed on-site, thereby forming a linear track of exploration as a touristic programme and enhancing the connection between Nantes and Saint-Nazaire.

Ville-Port

The urban regeneration project Ville-Port aimed to reactivate the neglected submarine base and the surrounding industrial area as the urban centre it had historically once been (Guixer, 2018). The resultant grief from the Second World War, together with the shift of economic structure, isolated the harbour area from the city and relegated it to the back side of urban life.

The development strategy of Ville-Port was to use cultural activities as the driving force to regenerate the harbour area. New cultural and entertainment programmes were established within the submarine base, from which four cells of the basement were filled with a gallery, a concert hall, the museum Escal'Atlantic, and a café. The rest of the cells were kept as they had originally been, and awaited the occupation of new developers. Other urban programmes were introduced to the surroundings of the submarine base, including a shopping area, a cinema, a theatre, etc. These newly developed programmes brought more vigour to the submarine base and the surrounding urban area, as well as connection the train station, the shopping area, establishing the submarine base as the core of the city. At the same time, these new developments, especially the museum, turned the submarine base into a touristic destination (Figure 5.19).

public space-square & boulevard
commercial area
public space - park & garden
empty & abandonedspaces
harbour
institution
cultural programme
logistic & ship industry
harbour industrial area

1. Saint-Nazaire submarine base
2. Sous-marin Espadon
3. Centre Commercial Ruban Bleu
4. Cinéville Saint-Nazaire
5. Le Théâtre
6. Cinéma Jacques Tati
7. Jardin des plantes
8. Parc Paysager
9. Skatepark de Saint-Nazaire

Ville-Port Urban regeneration

Sea front boulevard: Boulevard du Président Wilson

FIG. 5.19 The urban programme of Saint-Nazaire

Although new commercial and cultural programmes were developed in the surrounding area of the submarine base, common urban recreational activities take place in parks and gardens on the west part of the town. The submarine base mainly functions as a touristic destination.

The Garden as a Touristic Attraction

The garden, sitting on the roof of the submarine base, is mainly visited by tourists. Meanwhile, it is also divided from the inner programme of the submarine base because of different administration. This division is marked by how the garden is introduced to the public. Inside the submarine base, visitors are only informed of the programme of Ville-Port; there is no obvious information introducing people to the garden on the roof. There are two routes by which enter the roof. One is the giant ramp starting from the adjacent urban square, from which people arrive on the roof directly from outside. Although it provides a straightforward way to reach the garden, the ramp's giant volume and harsh material makes it a foreign object in the surrounding urban environment, thereby discouraging people from using it. The other entrance to the roof is from the basement, near the entrance to the concert hall and the gallery. Here, a spiral staircase ascends to the roof, but there is no information provided to show where this staircase leads to. The basement is already obscure, dark, and unfamiliar, so it is understandable that a staircase that apparently leads to nowhere is rarely used, and certainly prevents visitors from reaching the roof (Figure 5.20).
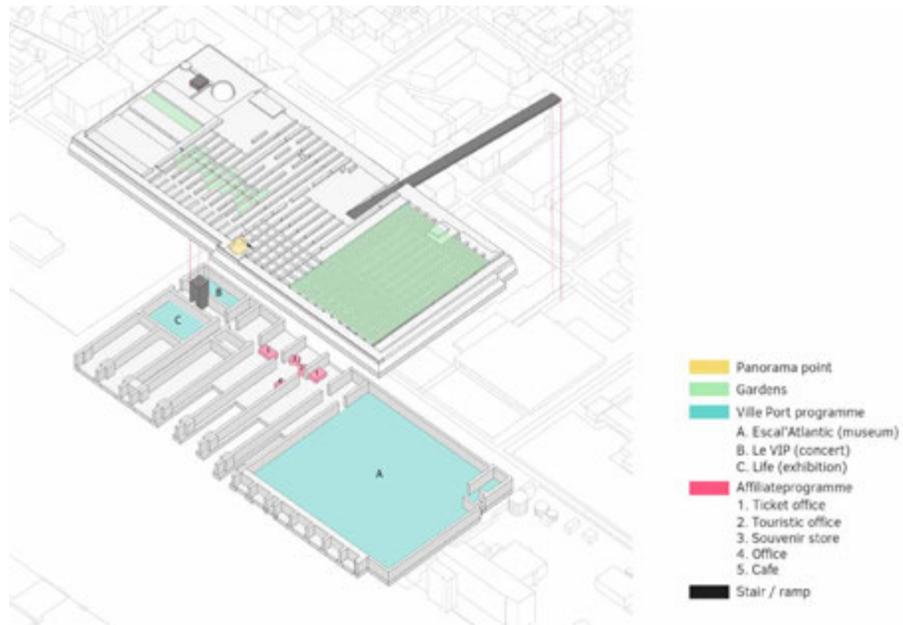
FIG. 5.20 The programmatic layout of the submarine base
Operated by two separate authorities, the garden, located on the roof, and the rest of the cultural programme, located in the basement, are not well integrated.

It is not only the entry route to the garden that isolates it from the public, but even when people arrive on the roof the existence of the garden is not obvious. Most visitors come to the roof for the panoramic view of the harbour rather than the garden. At the same time, the gardens are hidden from visitors; the Garden of Stonecrops and Grasses is hidden behind concrete walls and the Garden of Labels— although shown to the visitors in the open space—isn't immediately identifiable to visitors as a deliberate garden due to its wild image, and thus tends to be neglected.

Designed as an art work instead of a public space, there is no furniture, seating, or shelters in the garden to encourage people to stay a while or interact with each other. The environment on the roof is not only hostile to plant species, but also to the visitors. The spaces on the roof are either extremely open or enclosed and the vast concrete surface greatly discourages people to stay and use the space for their own purposes. Therefore, the design does not provide favourable conditions for social usages (Figure 5.21).
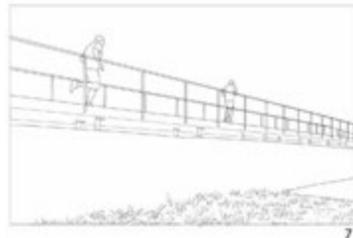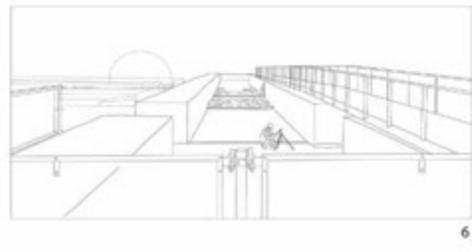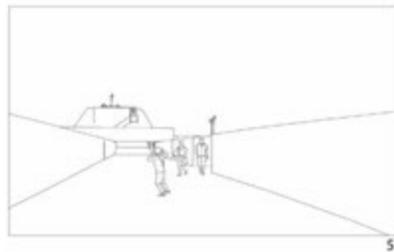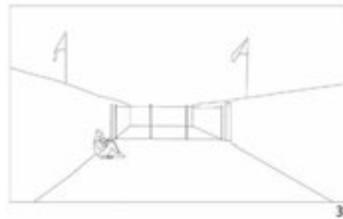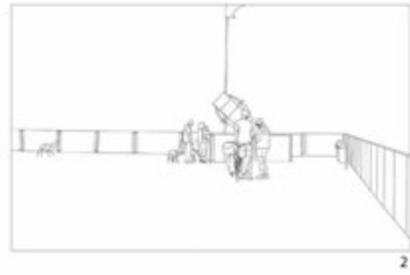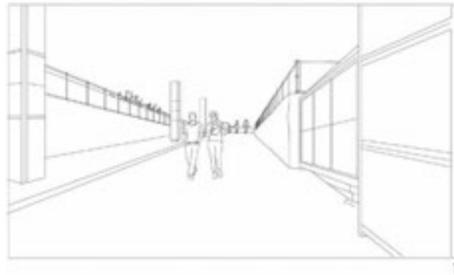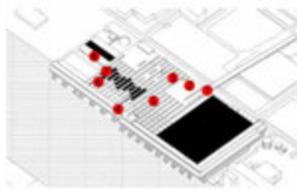
FIG. 5.21 The activities taking place on the roof

Most visitors prefer to stroll on the roof, to see the defence structure and to look across the harbour and the sea. The garden, somewhat hidden inside the defence structure, is not the main destination for visitors.

Evaluate Design Through the Social Lens

The interventions by Estuaire and Ville-Port open the submarine base as a touristic destination, and the garden serves more as an art installation than a public space. The spatial characteristics of the defence structure provide visitors with a unique experience on the roof, but conversely it does not accommodate people's basic needs of the shelter and of spatial orientation. As a consequence, it prohibits different types of social activities taking place. The design intends to convey the concept of the third landscape to the garden's visitors, calling for an awareness and sensitivity of human–nature relationships. However, with little concern given to catering for basic human needs on the hostile environment of the roof, visitors are deterred from staying here and, ultimately, they miss out on the opportunity to perceive the meaning of the garden. The cultural dimension of the design is missed due to the lack of concern in social lens.

5.6 Material Lens: Expressing Decay With Growth of Nature

5.6.1 Vast Concrete Surface

The submarine base, together with the heavy defence structure on the roof, was made entirely of concrete. Concrete is a material fabricated through combining different particles with cement. The most common particles for making concrete are simply sand and stone. As an engineering construction material, concrete is often chosen for its low budget and high material strength.

The fabrication technique determines that the surface of the concrete is not smooth and flawless. There are tiny pits and cracks on the surface, which allow the concrete to be invaded by natural processes such as weathering and erosion. The deteriorated concrete further becomes a habitat for microbes. Different natural ecological processes created dynamic textures on the concrete of the submarine base roof. In the cracks of the concrete, where the moisture content is slightly higher, we find drought-resistant plants surviving. The patterns, texture, and mosses on the concrete roof are reminiscent of the estuary climate and reveal the decades of the neglect endured by the submarine base.

5.6.2 Two Groups of New Materials

New constructions, with a simple and functional style, were made by the urban regeneration programme, Ville-Port. A remarkable intervention is the entrance ramp. The ramp constitutes the cement pavement, steel fence with ice-cracked glass, and the cubic lamp columns made of steel and frosted glass. The overall ramp has a cold tone of greyish blue, and its scale, colour, and texture make people feel distant (Figure 5.22).

FIG. 5.22 The ramp to the roof
The ramp is enormous in scale, while its materiality presents a rough and stony image.

The rest of the space on the roof is kept as it was originally. The only notable intervention is the steel fence erected at the edge of height difference. The fences are made of reticulated galvanized aluminium, with a cold tone similar to the ramp. The fence is monotonous in its form and layout, strictly laid along the edge, extending changelessly. The fence is semi-transparent; therefore, looking from a distance, the fences produce numerous layers that stand one in front of the other, governing on top of the existing concrete structure. These industrial materials, together with the way that they are arranged, enhance the unfamiliar and inhospitable image of the submarine base (Figure 5.23).

FIG. 5.23 Layers of fences on the roof
The fences, arranged on the roof in a functional style, reinforce the industrial image of the site.

Unlike the image introduced by Ville-Port, the garden presents a different image. The garden's material world mainly consists of the plants growing in the garden. In the Garden of Stonecrops and Grasses, the plants are mainly of the Crassulaceae and Gramineae families. In the Garden of Labels, most wild plants are perennial grasses, along with a small group of woody species. These organic, living materials are familiar to people and raise a sense of affection. As they resulted from nature's growth, they further set a contrast to the decay of the original concrete surface (Figure 5.24).
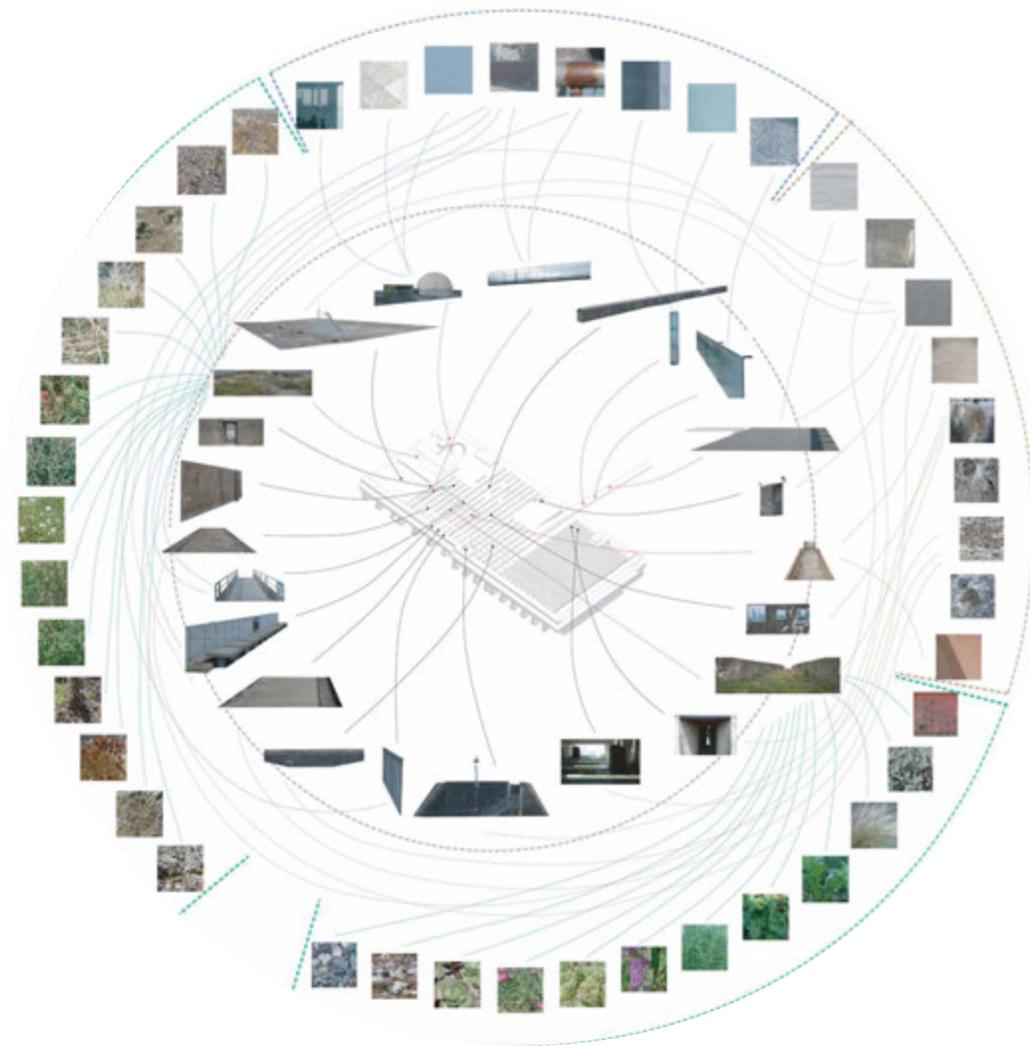
- - - - - - - - featured objects
- - - - - - - - material_site regeneration
- - - - - - - - material_original site
- - - - - - - - material_gardens

FIG. 5.24 / A The material world on the roof
The garden enriches the material world of the roof by introducing organic materials of plants, creating a dialogue with the slowing decaying concrete.

Texture_from newly added material

Texture_from original material of submarine base

Texture_from the garden of labels

Texture_from the garden of stonecrops

Color_from newly added material

Color_from original material of submarine base

Color_from the garden of labels

Color_from the garden of stonecrops

FIG. 5.24 / B

Both the growth of plants and the erosion of the concrete represent the temporalities of the material world, but their individual rates of change are very different from each other. The erosion of the concrete is a slow process, the changes of material are almost invisible within a short period of time. In contrast, the material world of plants is much more dynamic and changes greatly over the course of a year, which is much more dynamic. The image of the roof is very monotonous, characterised by a greyish tone of khaki and a coarse texture. Contrastingly, the gardens are characterised by various shades of green and colourful tiny wildflowers. In this way, the garden enriches the material world of the roof. Further, their temporalities create a dialogue with each other: for the plant community it is a process of the stable growth and evolution while for the concrete it is an opposite process of decomposition and decline. As both changes are organic and embedded in the natural process of the site, the setting allows visitors to trace the link between the newly established garden and the original site (Figure 5.25).

FIG. 5.25 The plants and the concrete wall
In the Garden of Stonecrops and Grasses, the planting beds fully occupy the space between the concrete walls, and the vivid, robust plant material speaks directly to the erosion of the concrete.

Unexpected Encounter

The experience of the garden is further enhanced by the spatial sequence and enclosure and, linking to the design tactics analysed through the morphological lens, provides a journey of unexpectedness and surprises. The planting bed in the Garden of Stonecrops and Grasses is placed in between parallel concrete walls and completely hidden from the outside. To visit the garden, people need to travel through the open area of the roof. The array of concrete walls dramatizes visitors' experience; on the way to the planting beds, people need to constantly shift direction. On this route, their view is either extremely extended or blocked. Once people reach the planting bed, their view again shifts between the direction of the planting bed or the direction of the concrete corridor that allows them to reach the next planting bed.

These shifts along people's visiting route provide focus to the planting beds. As each planting bed fully occupies the space between the concrete walls, the contrast between the textures of the existing concrete and the plants is intensified. The roughness of the concrete wall, and the liveliness of the thriving stonecrops, grasses, and rock plants are juxtaposed against each other. Species from the Crassulaceae and Gramineae families are distinguished from each other as well. This contradiction can be spotted once the visitors move closer to the planting beds. The plants from Gramineae family are weaving and slender, while the Crassulaceae (sedums), with their thick fleshy leaves, are short and sculptural. The design, through combining the spatial experiences, enhances the material contradiction of the garden (Figure 5.26).

FIG. 5.26 The material contrast between the Crassulaceae and Gramineae plants
The *Sedum pachyphylum* (left) and *Stipa tenuifolia* (right) are contrasting in their distinguished physical forms.

In the Garden of Labels, the design embellishes a winding path in the central line of the sunken pit, expressing a similar idea to the Garden of Stonecrops and Grasses: a landscape of transition and evolvement. Compared with the Garden of Stonecrops and Grasses, where the layout of the planting is designed, the Garden of Labels presents a more disordered image, making it hardly noticeable to visitors that the garden is made artificially. However, the newly emerged species are labelled twice a year between 2010 to 2015. The white labels make visual the dynamic processes of this biotope and reveal the succession of the garden, implying to visitors something is happening in this piece of wildness. Without the white labels, the garden may be perceived only as an overgrown site. By the time of my visit in 2018, the students had stopped labelling new plants. The garden looks like an ordinary overgrown site that we may find elsewhere inside the city, along the abandoned rail track or in the old industrial factory, whereas in reality this wilderness would never have developed on its own on this concrete roof, but needed the hand of the designer. The practice of labelling enhances the relationship between the wild image of the garden and the design intention behind (Figure 5.27).
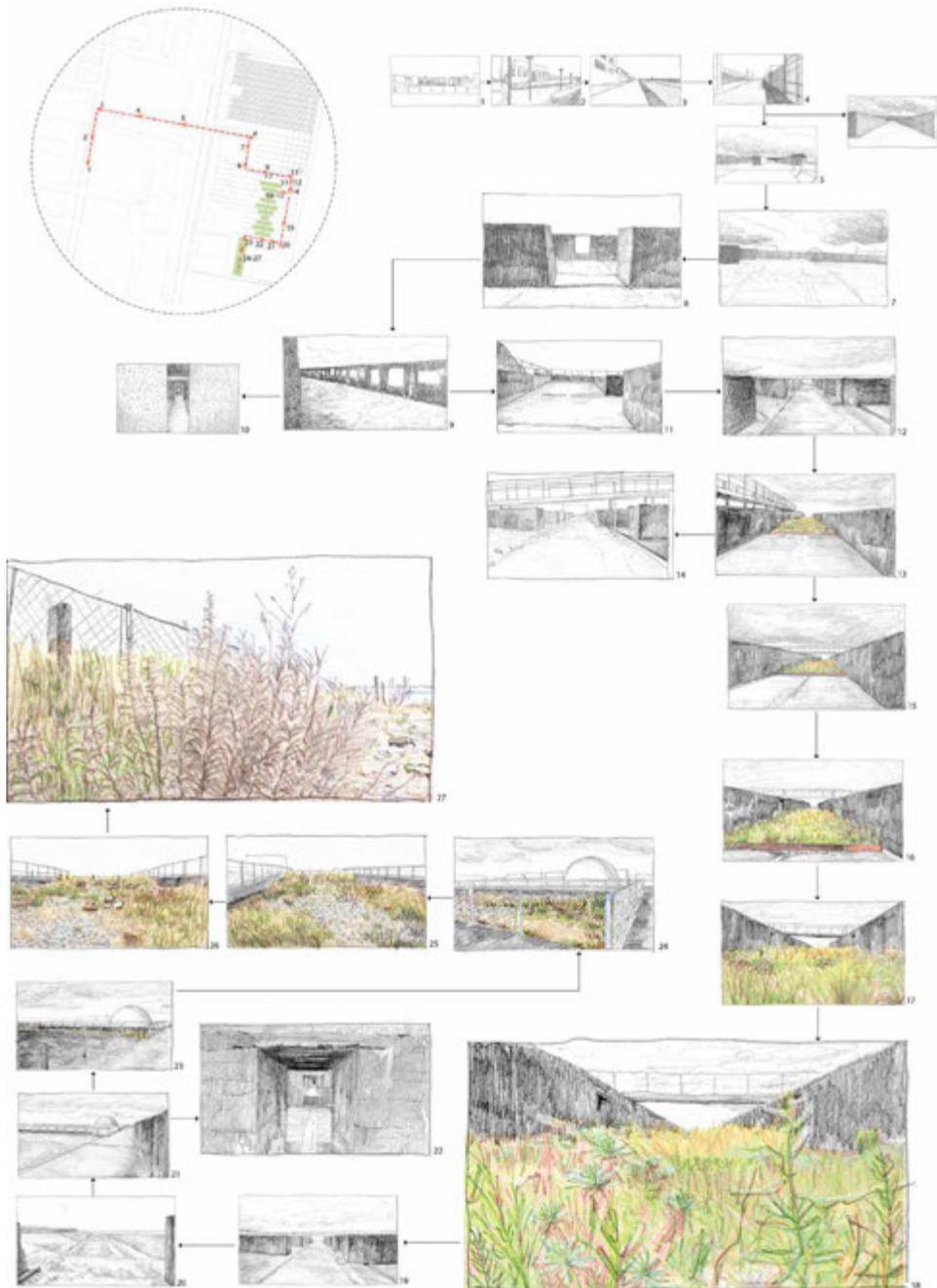
FIG. 5.27 External route to the garden from the urban main street
Arriving at the garden one encounters a sequential experience with constant shifts of visual directions, movement, and material contrasts.

5.6.4   Loose Maintenance

The two gardens are intentionally maintained infrequently, following the concept of the Third Landscape. For the Garden of Stonecrops and Grasses, drought-resistant species were regularly checked in the earlier years of the garden's establishment. Extra water is provided from the central canal to provide relief to the plants in scorching hot weather. In Petitjean's report, he mentioned that Clément requests that the garden be weeded regularly, especially that the designed planting pattern be maintained to let visitors understand the image of the transition and movement (Petitjean, 2010). Nevertheless, some weeds could be kept, as they nicely fill the gaps between the young plants. Later these weeds would be replaced by the mature plants that were introduced by the design. Contrarily, the Garden of Labels is strictly left to natural transformation; whatever species emerged in the garden would be kept on site. The maintenance guides for the two gardens display different principles. The Garden of Labels is maintained to manifest the idea of the Third Landscape, as a piece of wildness left for nature alone, while the Garden of Stonecrops and Grasses is maintained not only for manifesting the Third Landscape but also to maintain a particular image and to allow for aesthetic experiences.

5.6.5   Evaluate Design in the Material Lens

The design in the material lens carefully played with the site's existing material and the newly introduced material. In this way it enhances the aesthetics, narratives, and experiences of the garden. The grasses and the concrete speak to each other with their colour, texture, and temporalities. This dramatized dialogue calls up people's bodily engagement with the garden, accompanied by an awakened sensibility to wildness. Besides articulating the design composition, instructions on maintenance are further provided that guide the garden's growth in line with the design's intention. The design does not define the final appearance of the garden, but the principle of maintenance allows the garden's transformation to speak of the intention of the design.

5.7 Summary: Directing Spontaneous Process, Articulating the Site

The design of the Garden of the Third Landscape is mainly focused on the ecological lens, which celebrates the spontaneous ecological processes that take place in a space devoid of artificial management. Through deliberately playing with different aspects of the site's micro-climate, the design adds more dynamics to the ecological process of the roof, facilitating an open-ended transformation carried by natural agencies. At the same time, the design integrates its intervention in the morphological lens and the material lens, which allows the garden to embed in, and to further expose, the existing spatial condition of the roof. In this manner, the design creates a dialogue between the material world of the garden and of the original site. Nevertheless, as an artistic installation that displays the concept of the Third Landscape, the garden does not provide the extra facilities that would allow people to feel comfortable staying longer in the garden or to conduct different social activities. As a result, missing the design language in the social lens results in the cultural meaning of the garden being weakly conveyed.

From a temporal perspective, the transformation process of the garden is intentionally made to be open-ended. The design lays a foundation for new ecology to thrive on the concrete roof while the future of this biotope is not prescribed. A gardener plays an important role in this process. Because of his work, the later processes of the garden can take place in line with the design intention and simultaneously respond to the unexpected emergence in the ecological process of this piece of unique biotope. Compared to the previous processes of the submarine base during its abandoned period, very few people visit the roof, and only limited species were found here, resisting the harsh micro climate. In this respect, the design adds greater dynamism to the natural processes of the submarine base.

6 Dalston Eastern Curve Garden

6.1 Introduction

Dalston Eastern Curve Garden is a neighbourhood public garden right in the heart of Dalston, belonging to the borough of Hackney in the east of London. The garden is one of the pilot projects of the partnership project Making Place in Dalston, curated by design offices of muf architecture/art and J&L Gibbons landscape architecture in 2009. The design was done in close collaboration with local stakeholders and interested groups. The garden was constructed and opened to the public in 2010 (Figure 6.1).

The garden is managed by Marie Murray and Brian Cumming, who are involved in OPEN Dalston – a forum of local people that campaigns for the quality and equality of the local urban environment[15]. The garden opens to the public every day from 11:00 to 17:00. The caring and attention put into the garden by Murray and Cumming help the garden to be deeply embedded in the neighbourhood, as a beloved community place. Different temporary communal events are organised almost every week, from music nights to craft workshops.

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15 Please find the blogpost of OPENDalston at http://opendalston.blogspot.com/. Until now the group is still actively engaged in campaigns of the urban development plan, claiming objections to new development projects from Hackney Council.

FIG. 6.1 Dalston Curve Garden in 2019
The garden has a linear character and offers a relaxed ambience for sitting outdoors and meeting people.

Although the current appearance of the garden is a result of nine years of "cultivation" by the garden's management team, the original design proposal by the landscape architects laid a crucial foundation for the success of the garden. The landscape design provides a spatial framework that guides the later transformation of the garden. Looking into this garden, especially into the process of transformation between the initial design and the current layout of the garden, the study sheds light on the role of landscape architectonic design in transforming of urban interstitial spaces.

I came to know this garden during a trip to the ECLAS conference in 2016.[16] I visited the garden with the guidance of landscape architect Tim Waterman and met one of the garden's managers, Marie Murray. From the meeting with Murray, I came to know about the struggling story of the garden and started to further study the design. I visited the garden again in April 2018, following a literature study of the garden's background information. During this visit, I stayed in Dalston for four days, and visited the garden on different occasions. I interviewed the garden's manager Brian Cumming and an employee named Rosemary who works four days a week in the garden's café. From the conversations with them, I collected detailed information relating to the garden's daily management. I talked with different groups of visitors, asking about the frequency of their visit, their activities in the garden, and what it is about the garden that appeals to them. In addition, I visited the landscape office J&L Gibbons and interviewed the landscape designer Neil Davidson who was in charge of main design process. Davidson answered my questions, especially those relating to the design process with local groups and how they established close cooperation even after the design was finished. Further, I visited the local Hackney Archives to read about the history of Dalston, especially the North London Railway line that used to occupy the space and directly led to the leftover situation of the site. This information, experiences, and observations collected from the site visit, combined with further desk studies, serve as the material for the analysis of this case study. In the following chapter, the case study will be presented in the same structure as the other two cases, starting from an overview of the site's transformation.

16   ECLAS is a European landscape architecture conference organised each year among the members of landscape academic community in Europe. In 2017, the theme of the conference was Creation / Reaction.

6.2 The Site Transformation

6.2.1 A Brief Biography of Dalston

The very origin of Dalston is a small hamlet located in the east part of London. The first record of Dalston appeared in 1294, as Derleston, which is probably derived from the term "farm". The village belongs to the Parish of Hackney (Baker, 1995). The urbanisation of the area started from the 16th century, generated by the industrial development such as shipbuilding and the docks along the River Thames. In the larger context, the area is called East End, as the area appeared from the medieval growth of London beyond the London wall ("London Wall," 2019).

By the early 19th century, the river corridor of the Thames became more and more crowded with river traffic entering the docks in the centre of London. Although at that time a thoroughfare was constructed to link the downstream dock at Poplar with inner city, it did little to relieve the traffic pressure (Lysons, 1975). Therefore, constructing a new railway network linking the downstream dock area with central London and expanding to the rural north region was to be the solution. The resulting plan for the North London Railway line commenced in 1846. The initial idea was to connect the district of Poplar—the dockland area downstream of the river Thames— to Camden Town in North London. The first train line was planned from Bow Junction to Islington, which opened in 1850. In 1865, a terminal was constructed at Broad Street to connect the North London Railway line with the inner city. The line from Broad Street went directly north and reached Dalston Junction, the location of the current garden (McCarthy & McCarthy, 2009).

The construction of the railway sped up the expansion of London from its inner core to the rural hinterland. By 1849, Dalston was described as a recently boosted suburban village, with fetching old houses, and by 1859 the village had a similar sized population to neighbouring Kingsland (Baker, 1995). With a large increase in road and building construction, Dalston gradually merged with Kingsland, forming a large urban area. Dalston, together with Hackney, was fully built in 1870 (Baker, 1995). The current urban layout remains largely the same as the original urban layout of that time.

In 1899, the city put in place the London Government Act, from which Hackney was named one of the metropolitan boroughs of London. Hackney was characterised by mixed social groups with different cultural and religious backgrounds, due to the

immigrant industrial workers from the east end dockland (LB Hackney Policy and Insight Team, 2019). In the mid-20th century, many social conflicts between different immigrants happened in the area. The majority of the immigrants were Jewish. Together with other minority populations, the Jewish immigrants established activist groups that acted against British fascist organisations (Today in London's Radical History, 2016).

The prosperity of the railway was short lived, having been overtaken by the rapid development of inner-suburban lines and newly built tram line from Poplar (Connor, 2000, VIII). Meanwhile, several rail lines were damaged by bombs during World War II. Eventually, the line between Poplar and Dalston Junction was closed in 1944. The track between Dalston Curve and Dalston Eastern Junction was removed in 1965. It wasn't until the 1980s that railway transportation regained public interest due to the increasingly crowed traffic on the roads (Catford, 2017).

The influence of World War II drove away a large number of big light industry companies (Baker, 1995b). After the war, in the 1970s and 1980s, a widespread revolution of London's economy structure occurred because the previous industrial companies could no longer afford the transportation cost of the goods. Much of what was left was the low intensity enterprises at the bottom end of the market. Meanwhile, the large docks were relocated downstream along the Thames, leaving East London as an area striving for regeneration.

In 1982, the government approved the plan to develop London Dockland Light Railway, which facilitated the economic growth of dockland industrial area. Asserted by Hackney local council, the DLR was connected to the closed Dalston Junction station, which performed as a crucial facilitator in the later development of Dalston. Nowadays, Dalston is a social-cultural dynamic neighbourhood with mixed ethnic groups. In 2003, the housing association L&Q's joined Hackney Council to develop plans for the regeneration of Dalston estates. In 2011, Dalston town centre received £160m from the Mayor's Regeneration Fund to develop the area into an attractive destination in east London with new housing, cultural, and leisure facilities (London Development Agency, 2008).

In 2012, Queen Elizabeth Olympic Park was established on the open green field in Stratford, next to the east border of Hackney. The opening of the park boosted the real estate price of the surrounding urban region. At present, Dalston is a place undergoing rapid changes. Urban gentrification took place gradually but steadily, and external developers are investing in new housing projects. Immediate contradictions in the building style are highlighted in Dalston centre, where new modern looking apartments are sitting right beside the old 1960s buildings (Figure 6.2).

Site transformation

17th century
Valby was a rural agricultural area ocharacterised by enclosed farmland with small hamlets

18th century
The port industries encouraged the growth of Valby

1846
The first railtract of The North london line was established

186
The railw Dalston Street

Urban transformation

AD 47
The first major settlement of Roman on the location of current London

2nd century
The region became the roman captial with a population around 60,000

5th century
Roman govenment collapes

680
The city regrowed into a major port

11th centruy
London became the largest town in England

12th centruy
Large growth of population, the city became compact

1708
The port of london expanded to downstream of Thames

183
Lond worl

Landscape transformation

58 million BC
Thames river was a discreate drinage line

50 million BC
The river initially form its existing course

13 million BC
The britain was a pennisula of mainland Europe

2 million BC
Large sheet of Glacial covered north sea, the Britain was connected to mainland Europe

6500 BC
The ice sheet melted, cutting of British penisular from the mainland

5 AD
The Lea was a wide, fast flowing river created a large tidal estuary area

4th century
First settlement along the bank of lea

FIG. 6.2 The timeline of site transformation
The urban development of Dalston, as well as the leftover status of the site, are closely related to the railway network of North London Railway line.

The period of design intervention

55
…way extension from …Junction to Broad … was establsihed

1944
The railway line from Dalston junction to Dalston easten junction was closed

1965
The track of the closed line was dismentled

The site was abandoned, informally used as a dumping site

2009
Making Space in Dalston lunched by muf archiecture and J&L Gibbons

2010
The garden was designed and constructrued

2012
The bar was opened in the garden

2013
The garden was in risk because of the redevelopmet of kindsland shopping center

31-1925
…on became the …ld largest city

1846
The North London Railway line was established to connect docklands and London city

1922
The North London Railway line was aborded

1930-1960
A number of violent confrontations among ethnic communities in Dlaston

1965
The London Borough of Hackney was created

1980s
The London Docklands area became a focus for regeneration

1980s
Railway transportation regain its interest

2012
The 2012 summer Olympics effectively boosted the redevelopment of Hackney

1613
The New River was constructed io take clean water to London

18 centruy
London became the centre of the vast, mercantile British Empire

19 centruy
Large-scale of land reclaimation was conducted in east London, to dranage the marshland

20 centruy
The decline of heavy industry and tanneries, reduced use of oil-pollutants and improved sewage treatment

TOC

The Design History

Dalston Eastern Curve Garden was constructed in 2010, as one of the pilot projects of the design study project *Making Space in Dalston*. Making Space in Dalston was launched by two London-based design offices: muf architecture/art and J&L Gibbons (landscape architecture). The idea to commence this project was a response to the ongoing large-scale urban regeneration of central Dalston.

One of the notable projects in the urban regeneration agenda is the Dalston Square, a new residential housing complex built right on top of the Dalston Junction underground station. The project was developed by the joint committee of the city's public sector (London Development Agency, London Borough of Hackney, Transport for London) and Barratt Homes, one of Britain's major housing developers (Loving Dalston, 2012). Dalston Square's development reflects the mainstream urban redevelopment investment; the location was chosen near a traffic node, the project has been launched by external capital, and introduces a modern, universal architectural style, clashing with local architectural characteristics.

Dalston has a profound foundation of engaged community urban culture. As a district that features mixed ethnic groups and grassroots cultural activities, Dalston is historically a district that has seen much debate and protests over public and social issues. The evident changes brought by Dalston Square immediately raises the concern of the local active group who devotes constant efforts to safeguard local identity and local culture. For example, the Hackney Co-operative Development (HCD) and OPEN Dalston. HCD is a local community economic agency that supports local culture and creative industry. The group demonstrated its concern regarding the ongoing trends in development that will result in filling the existing town centre with upscale retail and restaurants. OPEN Dalston is a forum of local people running a campaign for the quality of Dalston's built environment and public realm. The group protested against the fact that they were excluded in the decision-making process. Further, they argued for public awareness on the identity and the heritage value of Dalston, for example, the Dalston theatre—a historical building that has stood on Dalston Lane since 1886—was removed for the construction of the Dalston Square (About OPEN Dalston, 2007). Alongside ongoing local protests, the borough of Hackney was conceiving of other big-ticket projects in the context of the urban regeneration process, including the redevelopment of Kingsland shopping mall and the cross rail between the two train stations.

Two offices, muf architecture/art and J&L Gibbons, were appointed to the project of Dalston Square and, as a result, they were directly confronted by conflicts between local groups and the external developers. In response, especially to the campaign over the Dalston theatre by OPEN Dalston forum, Jo Gibbons persuaded the real-estate developer Barratt Homes to open a line of communication with the local people. The meeting with the local group germinated the idea of the project Making Space in Dalston (Long et al.,2012), which sought alternative locally-based approaches to regeneration that would complement the top-down urban plan through encouraging incremental changes, integrating the ideas of local people, and grounding the solution in the local context. The project was commissioned in 2006 using funds from Design for London, and was facilitated by the network of Hackney Borough, LDA, and associated stakeholders. The project consisted of three steps: "value what is there, nurture the possible, and define what is missing." (muf architecture/art & J&L Gibbons, 2009, p. 18)

"Value what is there" introduces the design process, which starts by identifying the local qualities and characteristics. To initiate a conversation with local communities, the design office invited a group of stakeholders, including local active groups, cultural institutions, and other owners of cultural, creative industries. The information gathered from the stakeholders meeting, together with in-depth literature studies and the fieldwork in the neighbourhood, were transformed into thematic maps that spatialised the existing cultural programme, social initiatives, heritage value, and the quality of open spaces in the centre of Dalston. The maps stimulated discussions and debates with the local group, allowing those underlying local qualities to be effectively communicated with different parties. The maps directly allowed the municipality to start imagining an integrated design solution. "Nurturing what is possible" focuses on initiating cultural exchanges with the engagement of local people, facilitated by developing built projects, searching for possible funding, and building up collaborations and partnerships. "Defining what is missing" drafts 10 categories of intervention and identifies pilot case studies. From these pilot cases, new lessons could be integrated into the urban planning. The case studies showed how small-scale, local design practices could enrich the existing social life and further activate greater dynamism in the urban regeneration process" (muf architecture/art & J&L Gibbons, 2009, p. 19)

Dalston Curve Garden is one of those pilot projects. The initial design concept was to transform the site into a green urban oasis that responds to the existing ruderal ecologies on site. To test the capacity of the space for new social functions, in 2009, an art event called "Dalston Mill" was organised on site, curated by Barbican Art Gallery and designed by the architectural collective EXYZT[17]. The three-week exhibition attracted 12,000 visitors in this hidden backyard. The event demonstrated the social potential of the site besides the ecological qualities that were recognised in the design. Because of this, the programme of the garden shifted to a community space, with a wooden pavilion and a large outdoor garden. The landscape office J&L Gibbons undertook the design. In 2010, the garden was constructed and opened to the public. The students from the local youth centre were the volunteers who built the wooden pavilion at the garden's entrance. A short-term lease for the site was granted for a two-year period. Three local organisations—Arcola Theatre, V22, and Bootstrap—took on the initial role of organisation and management. Arcola Theatre was the main body responsible for the garden, as the lease holder, events facilitator, and fundraiser (muf architecture/art & J&L Gibbons, 2009, p. 24). Later, Murray and Cumming, who were involved as stakeholders in the Making Space in Dalston project, became the co-directors of the garden.

17 The setting of the exhibition included a 16 metre-high windmill with bread oven, and 20 metre-long wheatfield.

The Process Afterwards

After the construction of the project, the designer maintained contact with the garden's management team, providing consultancy for required adaptations. For instance, as a result of increasing visitor numbers, the grass in the garden's open ground needed to be changed to bark. When the garden had been open for two years, the design office applied for a small amount of funding from the Hackney Council to evaluate the garden's operation and social benefits. The success of the garden raised discussions about the future of Dalston; the local people were greatly concerned by the urban redevelopment projects led by external developers, because the garden had showed the benefit of alternative approaches.

As the garden was a temporary project, part of the garden was on land belonging to the developer of Kingsland shopping centre, located right beside the garden (Loving Dalston, 2014). In 2013, the redevelopment plan for the Kingsland Shopping Centre showed a new paved entrance to the shopping centre on the site of the garden, meaning that the garden would have to be moved (Hackney Citizen, 2013). To preserve the garden, the management team proposed to Hackney Council that the zoning of the land be changed to public lands (March 2020 Update, 2020). [18] In so doing, the garden's land use would be legally supported.

The initial funding of the garden was from Design for London, which only supported the operation of the garden for two years. After that, the garden needed to support its own daily revenue. To secure the garden's budget, a small café was opened in the garden in 2012. The café not only safeguards the garden's financial situation, but also allows visitors to have better accommodation in the garden. The café supports the garden as an adored outdoor space for meeting friends or enjoying quiet reading time. Today, Dalston Curve Garden is a representative outdoor space of Dalston and a showcase of dynamic local cultural and social practices.

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[18] The current zoning of the land is to prioritise it as an urban function that provides employment opportunities, thereby making the garden vulnerable, as this priority largely implies that the land be given to commercial developments.

6.3 Morphological Lens: The Curving Rail Line

The linear and curving geometry of the site is evidence of the previous North London Railway line on site. The network of this historical rail line is the key to understanding the site's geometric characteristics, which later become essential elements of the design composition.

6.3.1 The Landscape of Hackney and the North London Railway Line

The railway network can be considered as the main landscape element that defines the current morphology of the site. Hackney is a borough located among three urban regions: the downstream dockland, the inner city of London, and the north region of London. This intersection made Hackney a strategic node in London's railway network. At Dalston station, three island platforms form a unique triangular shape. Four rail lines joined here, two lines go to the west side of the North London line, and two join the east ("Dalston Junction railway station," 2013b). The inner space of the three platforms was used as a rail yard, creating a giant industrial island at this location. The North London railway line played an essential role in London's urban development. The railway network ensures the transportation of goods from the dockland to the north region and inner city of London. After 40 years, the North London Railway company closed, and two rail tracks at Dalston station were re-used as part of London's overground network: one line runs in the east-west direction, to Highbury & Islington, and to Homerton; the other goes south towards Shadwell (Figure 6.3).
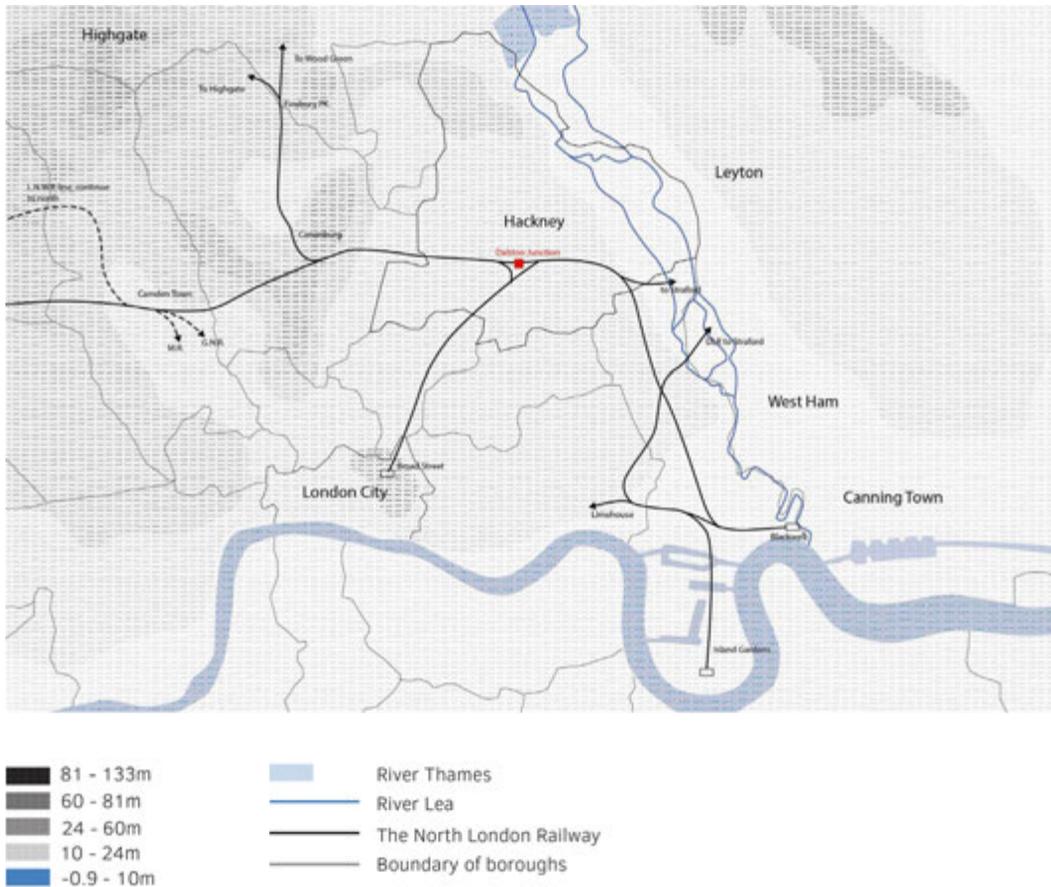
FIG. 6.3 The landscape of Hackney and the North London Railway line
The railway network, connecting Hackney with the dockland in the south and inner city of London, directly boosted the urban development of Dalston.

After the rail line between Dalston junction and Dalston Eastern Junction was permanently closed, the rail track was removed and the subsequent urban development gradually transformed the north settlements of the site into a large-scale shopping centre—the Kingsland Shopping Centre. While the surrounding urban fabric has transformed dramatically, the site was kept unchanged. The site's curving shape records the story of previous historical railway lines.

The Location of Dalston Town Centre

The heart of Dalston, the area around the Dalston station, shows a direct contradiction between the old and new: between the large volume of modern apartments and small-scale historical buildings. It is not only the volume of buildings that presents a contradiction, different logics between the railway system and the historical village of Hackney also make the urban pattern fragmented. Here and there, we find the residual parcels in the existing urban tissue, generated by the clashes of diagonal village roads and curving railway tracks. The massive volume of the shopping centre, fully taking advantage of the large open spaces left from the previous rail yard, is the most evident feature in the spatial context of the site. The recent housing development in Dalston Square, to the south of the site, has also been transformed from the land of the previous rail line, but divided from the site by the main urban street, Dalston Lane.

The site is immediately surrounded by several residual courtyards from the previous railway occupation. Now, some of them have been transformed into car parks or informal parking spaces, others are misused or neglected. Small shelters were built in those backyards, which constitute part of the site's boundary (Figure 6.4).

The site was once two metres lower than the surrounding ground level and was without a clear boundary on its north side, opening to adjacent backyards and parking lot. The design introduced a new enclosure to the site, on average two metres high, connecting the existing fragmented enclosure. The site is connected to the outside street, Dalston Lane, with a trapezoid-shaped space. The diagonal border of the space represents the pattern of the previous railway. The railway's geometry continues across the whole site and then turns into a narrow street, Martel Place, which extends to the north (Figure 6.5).

The curve of railway track cut through the original urban layout, which is still evident in today's urban layout. The old railway yard—a large open area—was later transformed into the Kingsland Shopping Centre.

Richmond - Stratford

new housing development
of Dalston square

London overground:
Dalston - West Croydon

The site

Enclosure

Surrounding residual
backyards
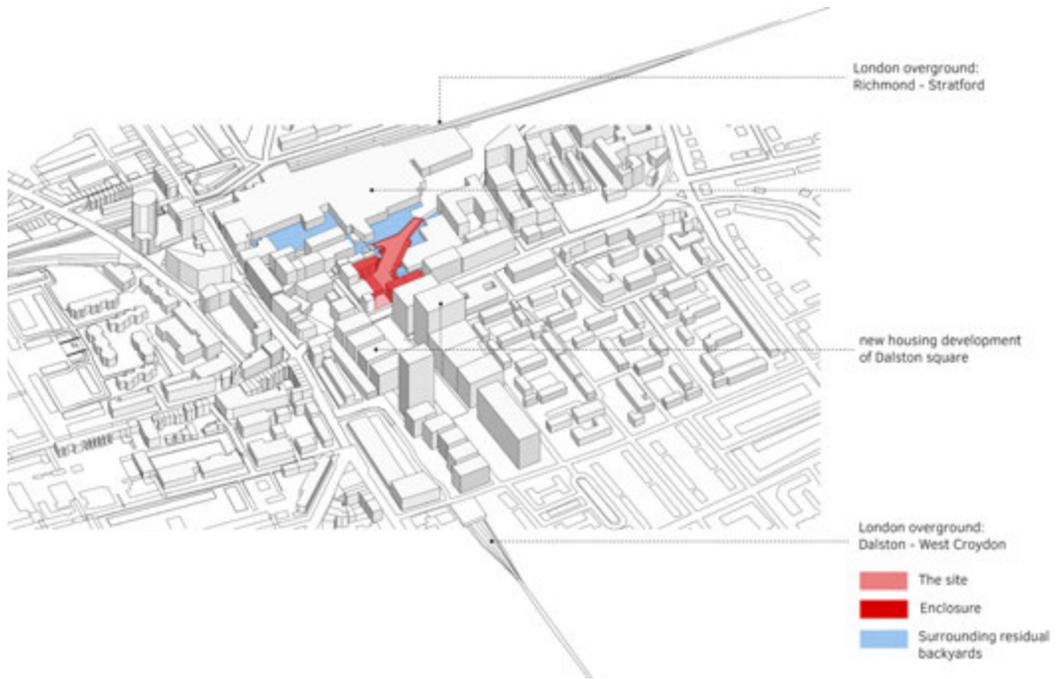
FIG. 6.4 The surrounding residual backyards

These piecemeal residual surrounding backyards represent the in-between situation of the site – as one of the leftover spaces that resulted from the clash between the curving railway line and orthogonal urban pattern.
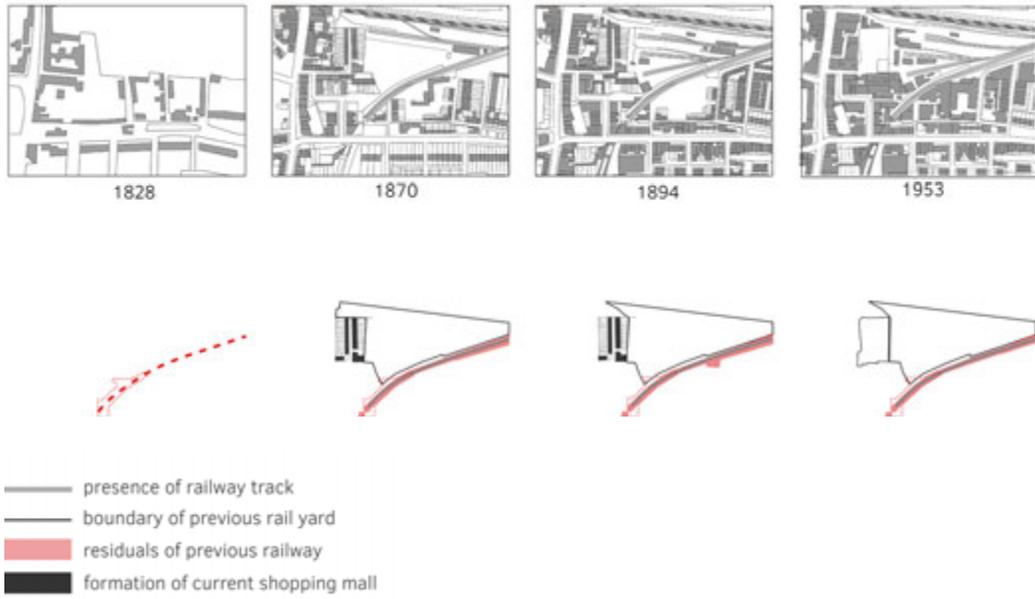
FIG. 6.5 The morphological evolution of the site

1971 1982 1993 2018
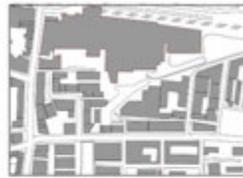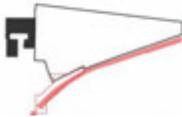
The Spatial Layout of the Design

The design recognises the curving geometry of the site as a compositional principle of the site. A wooden panel, three metres high, was established at the entrance of the garden, separating the entrance square and the garden's interior. Only a small gateway, with a door approximately one metre wide, serves as the entrance to the garden, immediately providing a sense of entering. Further, the linear feature of the garden is enhanced by modifying the garden's ground surface; at the entrance section of the garden, the floor of the pavilion is elevated to the same height as the outside square. The garden's ground starts by dropping down three steps from the pavilion, the surface of the garden's outdoor area gradually goes down and finally reaches the original level of the site at the end. In this way, the moderation of the ground level creates a spatial effect of descending, which extends and enhances the linear character of the garden (Figure 6.6, 6.7).

FIG. 6.6 The entrance square
The garden is connected to the public realm through a small gate. The narrow gateway emphasises the moment of entering the garden.
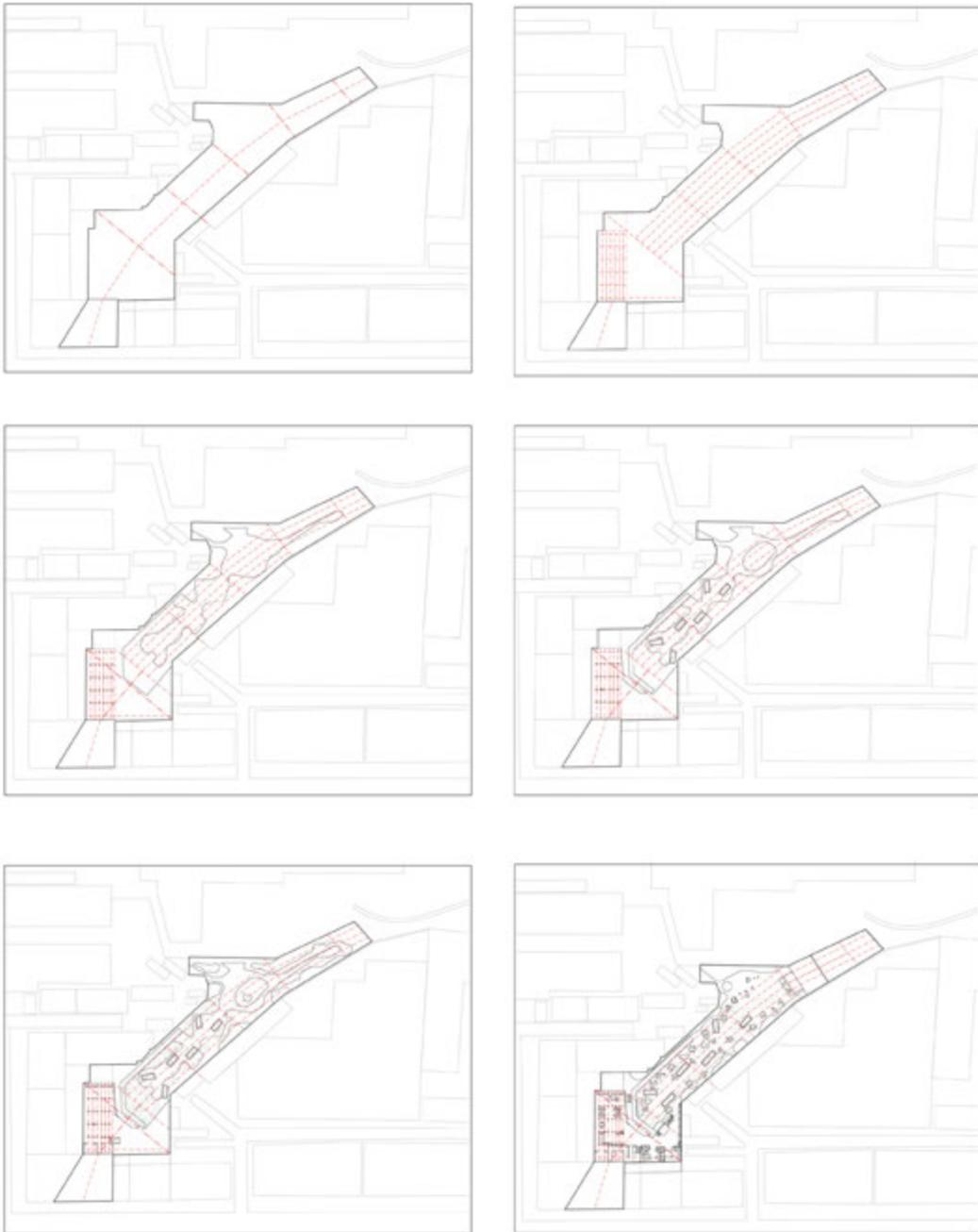
FIG. 6.7 The design evolution.
The spatial design took the curving geometry of the existing site as the essential element for the composition of the garden. The design divides the garden into three sections, integrating the geometrical character of the site.

The garden is divided three sections. The first section is the area that is still occupied by the existing orthogonal urban fabric. The design uses this space as the setting for the pavilion, which has five arrays of columns spanning five metres. The pavilion introduces a transitional space between indoor and outdoor. As the terrace is higher, it allows an overview of the garden. Here, the sight line is distorted by the canopy of birch trees in the second section of the garden, enriching the sense of intrigue in the garden.

The second section of the garden starts in the space where the curve becomes dominant. Here, the outdoor sitting space is enclosed by linear planting beds with shrubs reaching 1.5 metre to two metre high. In the middle, there are rectangular growing beds, free-standing birch trees, and scattered tables. The slender tree trunks enhance the verticality of the space. At the same time, the canopy of trees brings the enormous open space back into a human scale. The enclosure of shrubs, together with the tree canopy, provide shelter from the bustling atmosphere of the outside urban street.

The last section of the garden starts at the area in which the linear space expands and connects to a rectangular space. Here, the spatial definition becomes vague, and the design leaves space for spontaneous activities and occupations. A small stage at the back of the space marks the end of the garden. (Figures 6.8, 6.9)
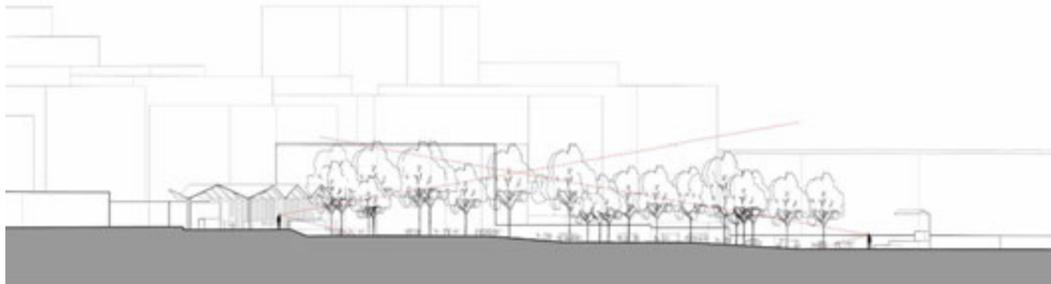
FIG. 6.8 The cross-section of the garden
The pavilion filled up the top section of the site, making it the same level as the outside urban street. The planting of the trees enhances the enclosure of the site as well as the descending effect of the ground.
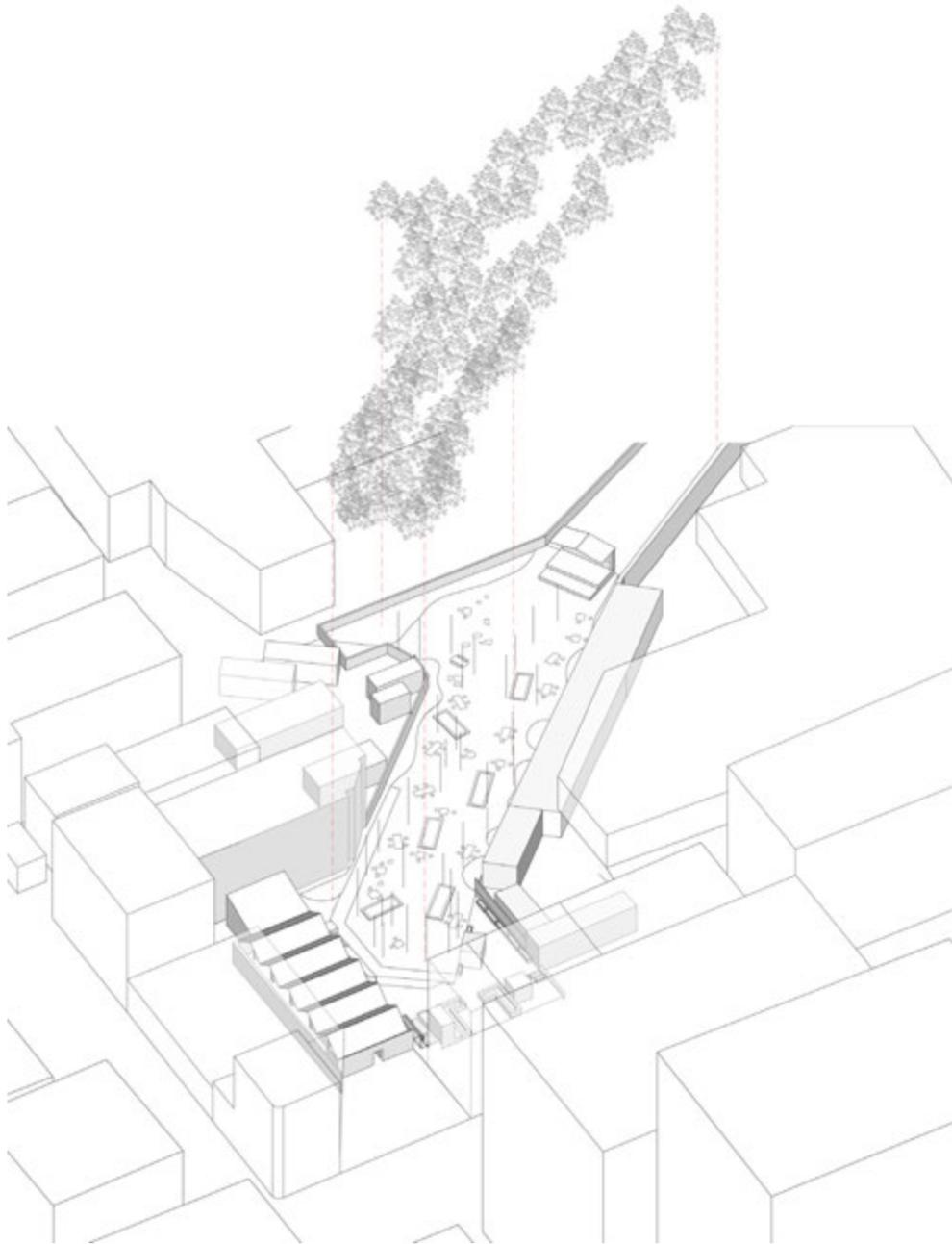
FIG. 6.9 The spatial composition
The site was fully exposed to its scattered surrounding urban environment. The design introduced a new enclosure consisting of the canopy of trees, the fences, and the shrubs, thereby making the garden an autonomous space.

Adapting the Initial Design Proposal

The spatial design introduced above is an adapted version of the initial design proposal. The initial design proposal values the site's ecological quality and therefore the whole arrangement of the space was dominated by an organic pattern. The primary ordering principle was the curving central axis, the shrubs and grasses and the rectangular planting beds were designed in a way that enhances the central axis of the garden. In the middle of the garden, a wooden boardwalk was emerges from the central axis. The rectangular planting beds were arranged at each side of the boardwalk. The layout of the planting beds was not exactly asymmetrical but balanced with the whole composition.

The initial design proposal was adapted with the local groups' requests for more spaces for social activities. However, comparing the initial and final layouts of the garden, the designed spatial framework set a foundation that would regulate later adaptation. In the final layout, the axis, enclosure, and the position of the planting beds are similar to the initial design and these elements nicely regulate the position of the dining tables and chairs—the elements suggested by local groups. A clear and designed spatial framework makes it possible to balance the ecological aspects and the social uses in the garden and integrates the local groups' desire in the design composition (Figure 6.10).

Axis

Planting Beds

Enclosure

Tables and Chairs

Tree
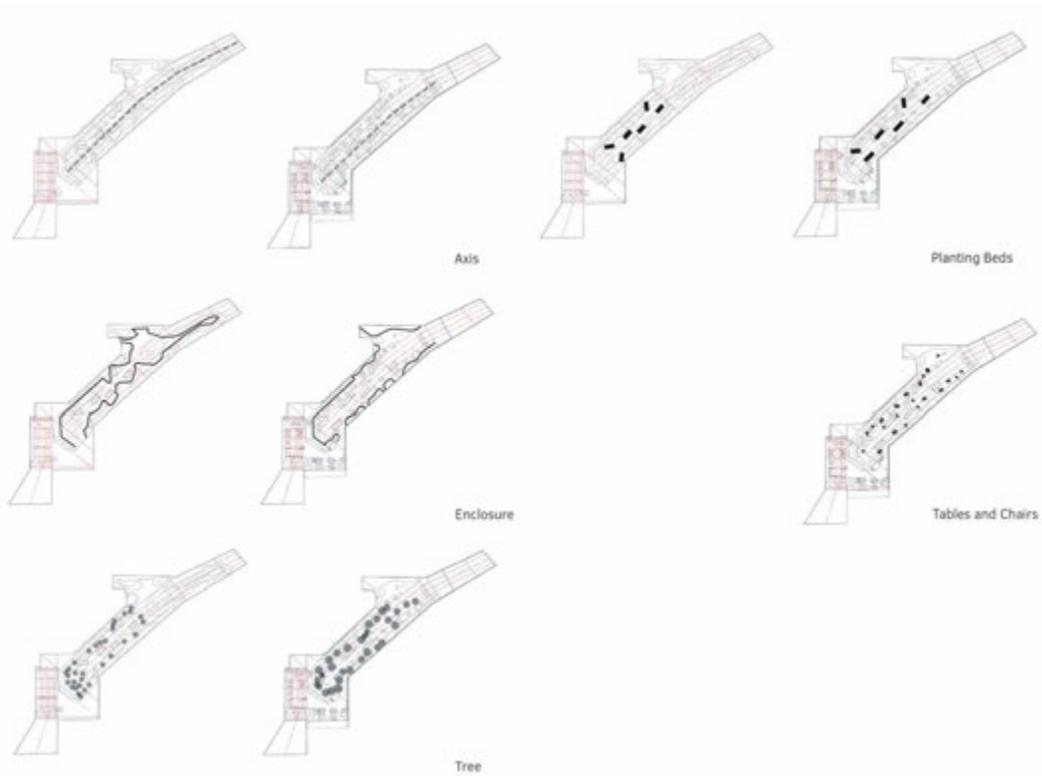
FIG. 6.10 The adjustment of initial design proposal
Input from local groups were taken into the account when adjusting the initial design. Because the layout of initial design fully acknowledges the site's context, the later adaptation does not lose the coherence and presents an integrated composition.

6.3.5 Changes After the Garden's Construction

After opening to the public, the garden gained popularity among local people and an increasing number of tables and chairs were brought into the garden's open space. Although the social usage tends to fill the entirety of the garden, the planting beds ensure there are still spaces reserved for planting. And the central passage of the garden, because it serves as the axis of the design composition, was always preserved throughout the transformation. The planting beds and trees divide the sitting area into small parcels, making sure that the groups of visitors won't disturb each other.

6.3.6 Evaluate Design Through the Morphological Lens

The spatial design of the garden fully acknowledges the site's narrow and linear character as the legacy of the historical rail line. Based on this identity, the design further distinguishes the site and the external urban environment by making a unified, integrated enclosure for the garden. The spatial elements—the linear and rectangular planting beds, trees, and the stage—together form a cohesive composition, fostering a strong sense of place. A defined spatial framework allows further adaptations—both the inputs from local groups in the design development phase, as well as the changes during the garden's further operation —to be incorporated into the initial layout. In this way, the garden's transformation can accommodate local desires without losing the design qualities of order, balance, and unity.

6.4 Social Lens: Lived Open Space

6.4.1 Design as Opening the Conversation

One of the design's essential values is that it allows for communication between the decision makers and the local groups. The social culture of Dalston is known by its history of social campaigns and protests and concerns about the radical urban regeneration process had already been raised by local groups including OPEN Dalston and HCD (Hackney Co-operative Developments).

The project Making Space in Dalston mitigated the tension between local groups and external developers. The two design offices used the design process to create an occasion that brought two opposing parties to sit together and to communicate the opportunities that lay in the local context. The analytical mapping of local public spaces and social context effectively visualised the dynamic social-cultural networks in the local context and established a common ground for the two parties. This communication forged a network of social initiatives; by joining the strength of different local organisations, new forms of social, cultural practices could emerge. (Figures 6.11, 6.12, 6.13,6.14, 6.15).
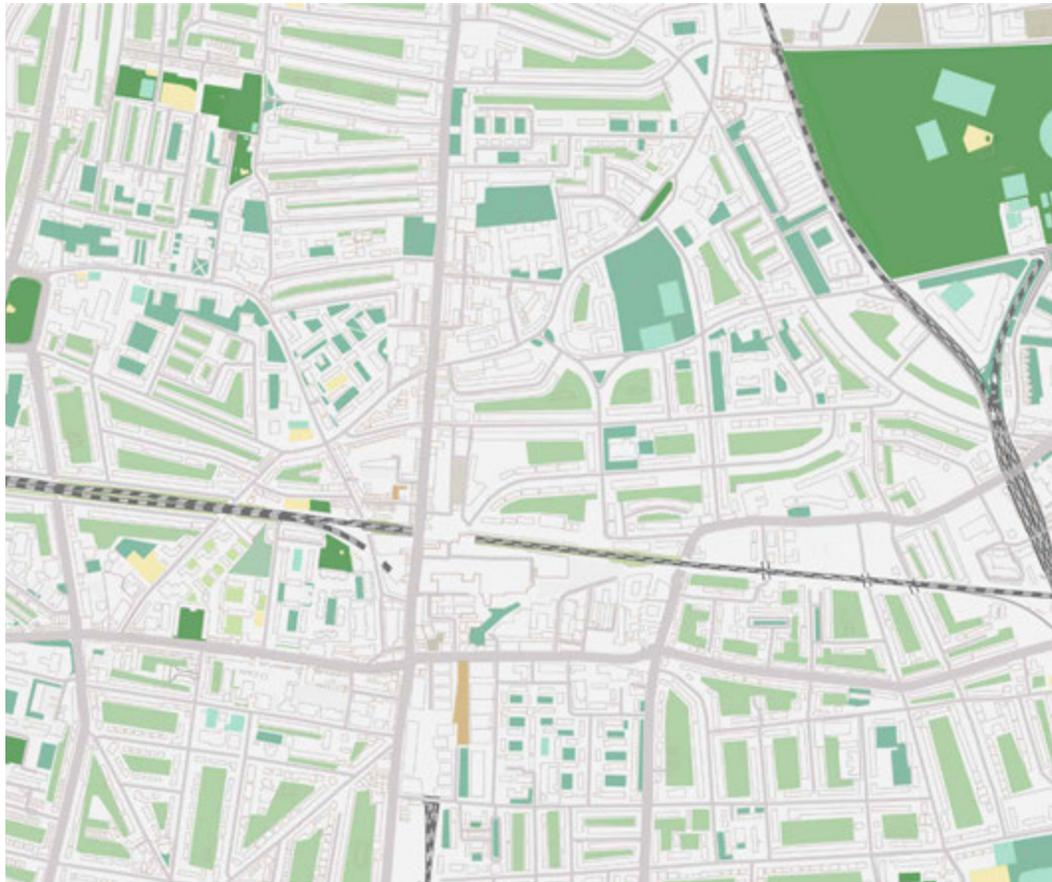
square
playground
sports field
common green spaces
park
pravite green spaces
abandoned spaces

FIG. 6.11 Urban green spaces of Dalston

Dalston does not lack of green spaces, but most of them are private courtyards. Small squares and playgrounds can be found at different points within the urban tissue. A large park is located on the east side of Dalston, providing local residents with an outdoor space during the weekends.
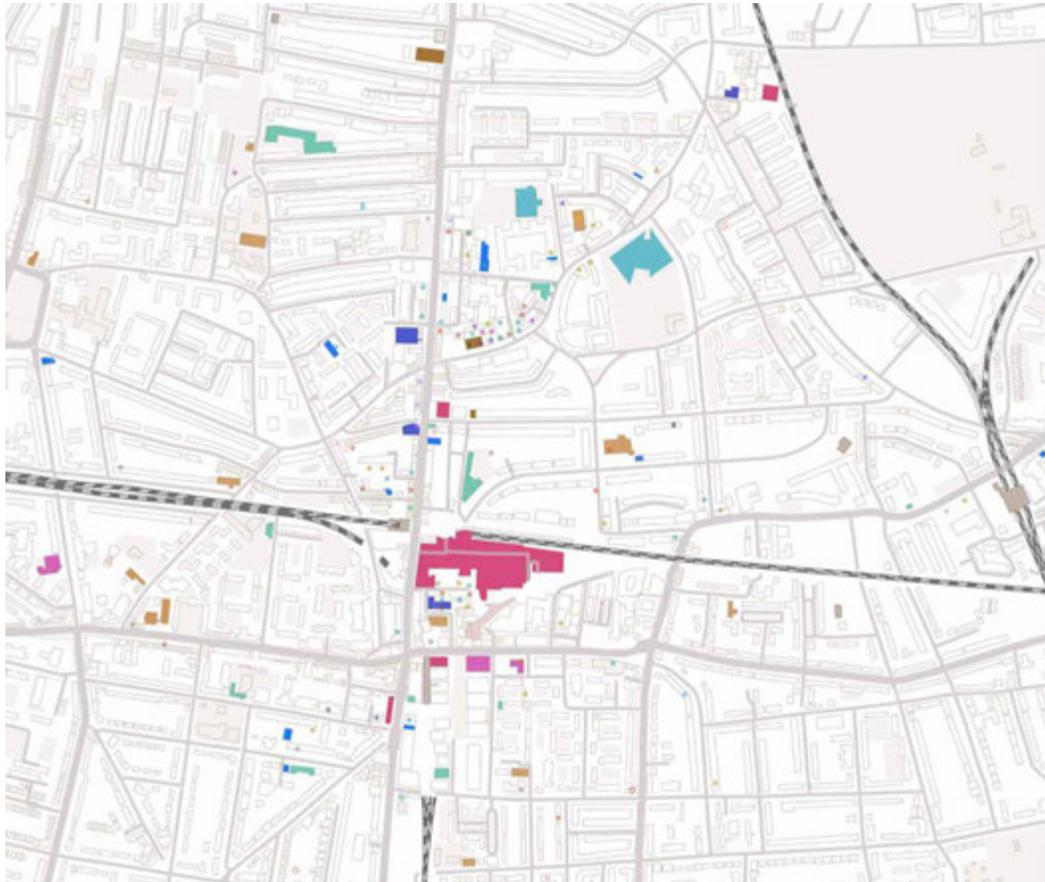
Legend:

- retail
- grocery
- church
- mosque
- school / day care center
- higher education institution
- art school/studio
- occasional cultural place
- theater

- miscellany
- philosophy & theory
- education & research
- ceramic arts
- galleries & museums
- organization &management
- buildings for religious purposes
- music
- recreational & performance arts

- textile arts
- public performances
- design & decoration
- architecture

FIG. 6.12 The social-cultural context of Dalston

Dalston has a lively social-cultural background, with a large variety of artistic studios, cultural institutions, and cultural initiatives. The popular social engagement let the design determine the site as a communal garden for a range of social-cultural activities.
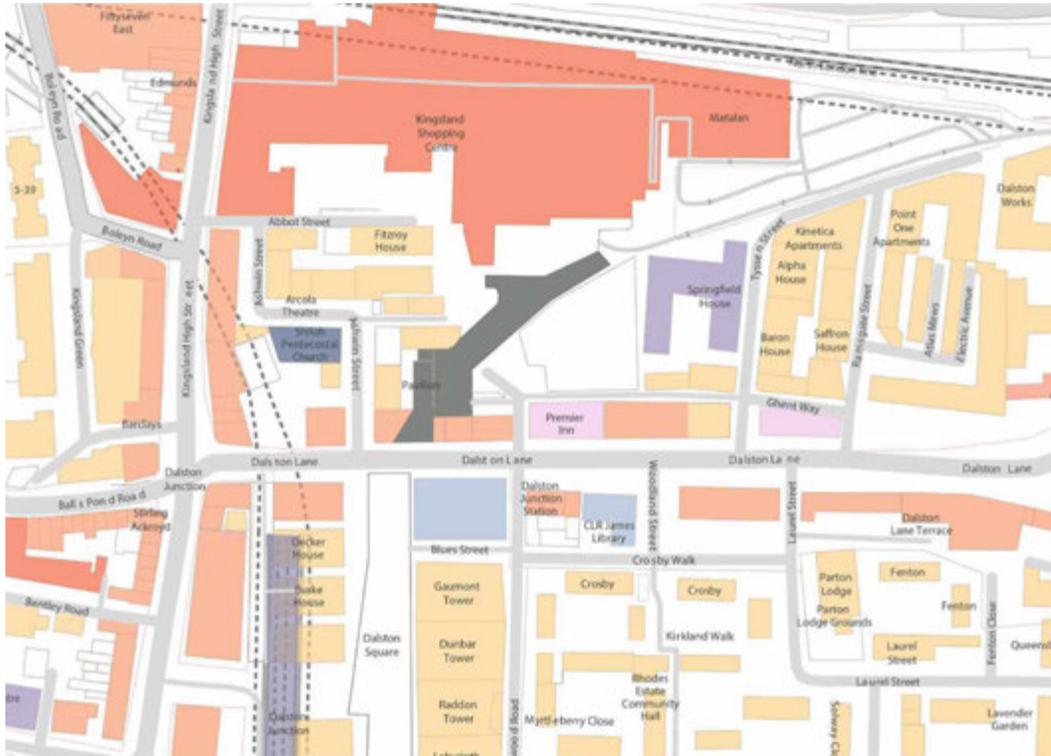
| | residence with retail on the ground floor |
| residence |
| hotel |
| library |
| theater &cinema |
| institution |
| church |

FIG. 6.13 The surrounding urban programme of the site

Near the site is Dalston town centre, crowded with retail shops and traffic. The tranquil outdoor environment, easily reached within walking distance, makes the garden a beloved social space in this urban context.

parking

small square

common green

private green

abandoned site

backyard

appropriated backyard

FIG. 6.14 Surrounding open spaces in context
The group of surrounding urban open spaces features various informal, disused backyards, and parking plots. Crossing Dalston Lane, opposite the entrance area of the site is Dalston Square. Unlike the garden, the Dalston Square is a public space with a clear urban atmosphere.

FIG. 6.15 The urban scene of Dalston centre
Top: the hustle of Dalston Lane, with the contrast between the new apartment blocks and the original historical building on its two sides. Bottom: Dalston Square, a hard-landscaped urban pocket park.

Nurturing Stewardships

After the design was implemented, a collective management system, called Dalston Forest Cooperative, which comprised three interested local organisations: Arcola Theatre, V22, and Bootstrap, was formed to undertake the daily management of the garden. Later, Murray and Cumming, who were deeply involved in the design of the garden, took over the role of co-directors of the garden to manage its day-to-day running. The managers keep in regular contact with local cultural groups and artists, arranging a year-round free cultural programme in the garden including acoustic music sessions and creative workshops. They also regulate the visitors to the garden, making sure that the garden is open to everyone. Homeless people, for example, are allowed to beg in the garden but they can only beg once, and they are provided with any excess food from the café. The managers do not intend to exclude any social groups but they also ensure that anti-social behaviour is curtailed to avoid disturbing other visitors. Their dedication to the garden is partially because of their sense of responsibility, but also due to the regulations of Hackney Council, which took the form of an agreement made between the borough and local groups as the precondition of the land lease. The regulation is very detailed and provides specific provisions for the garden's use, allowing its daily operation in line with the bigger picture of the urban planning and guarantees the garden's openness from being dominated by a specific type of social programme (Hackney Legal, HR and Regulatory Services, 2012).

The following list describes the main categories in the regulation of Hackney Council:

— The garden must be free to access and should be open a minimum of four days per week.
— Operators must ensure the garden is inclusive and visitors adhere to equal opportunities.
— The garden should complement other cultural and educational and gardening activities on offer in Dalston, in particular the public events programme in Gillett Square and any planned programme for the emerging public space at Dalston Square.
— The Dalston Eastern Curve Garden is understood to be primarily a peaceful haven where people can experience plants and nature.
— All marketing events and material must ensure that the Dalston Eastern Curve Garden is easily understood as a community garden open to all.

These detailed regulations ensure the garden's role in the bigger picture of the urban planning and development agenda.

Nevertheless, these external regulations are not the reason behind current dynamic social participation of the garden. It is the dedication of Murray and Cumming who make decisions in the garden's every-day operation, beyond the remit of regulation, that consistently engages the local people. They mediate between the prescribed guidance of the local government, and actual desires and practices of local people. They cater for every-day, unexpected social practices to take place and enrich the garden as a vigorous social space in the local context.

This management reflects the pair's concern and care for the garden, which drive them to "cultivate" the garden. Their close bond to the garden is the natural evolution of their engagement in the design process. The designer involved them in the early stage of the design and kept in constant contact with them in the design development process. Because of this, Murray and Cumming perceive the garden as something of their own. At the same time, the designer explained to the two managers the design of the garden, letting them understand how different design components work together. In this way, the two managers are more capable of carrying out future adaptations in line with the initial design intent and layout.

6.4.3   A Space Left Unfilled

Most of the garden's space is well defined by different programmes: the first section of the garden is the pavilion that provides a physical shelter for indoor activities. The middle section of the garden is designed as an outdoor lounge, tables and chairs are dispersed between columns of tree trunks and divided by planting beds. However, the last section of the garden is left undefined. Music performance and other collective activities were regularly hosted here. The afternoon is for neighbourhood children, who use the space as a playground. Throughout the majority of the day, this space is used by some individual visitors, as it allows them to create some distance from the crowd in the middle section. The composition provides a balance between a defined and undefined programme. The undefined space is not made by randomly demarcating empty ground, but concerns the site's existing spatial conditions. This space is located at the end of the garden, where the linear space becomes wider and more rectangular. A voluminous *Buddleja davidii* (butterfly bush) in this area was trimmed back to create an arch and a resulting interesting, adventurous space underneath. It offers shade for people to sit or for children to play. An informal stage was added here later, made by local people who appropriated this vaguely defined space. (Figure 6.16, 6.17, 6.18)

entrance square	bar
circulation - paved surface	show
circulation - soft surface	playing
toliet	sitting semi-indoor
compost	sitting -outdoor
green house, office	gardening
storage	

FIG. 6.16 The programme of the garden

The functional programme is designed mainly near the entrance area: the bar counter, the nursery house, the pavilion, and the green house. The recreational activities – the outdoor sitting and the playground—are located in the middle open ground, supplemented by rich planting.
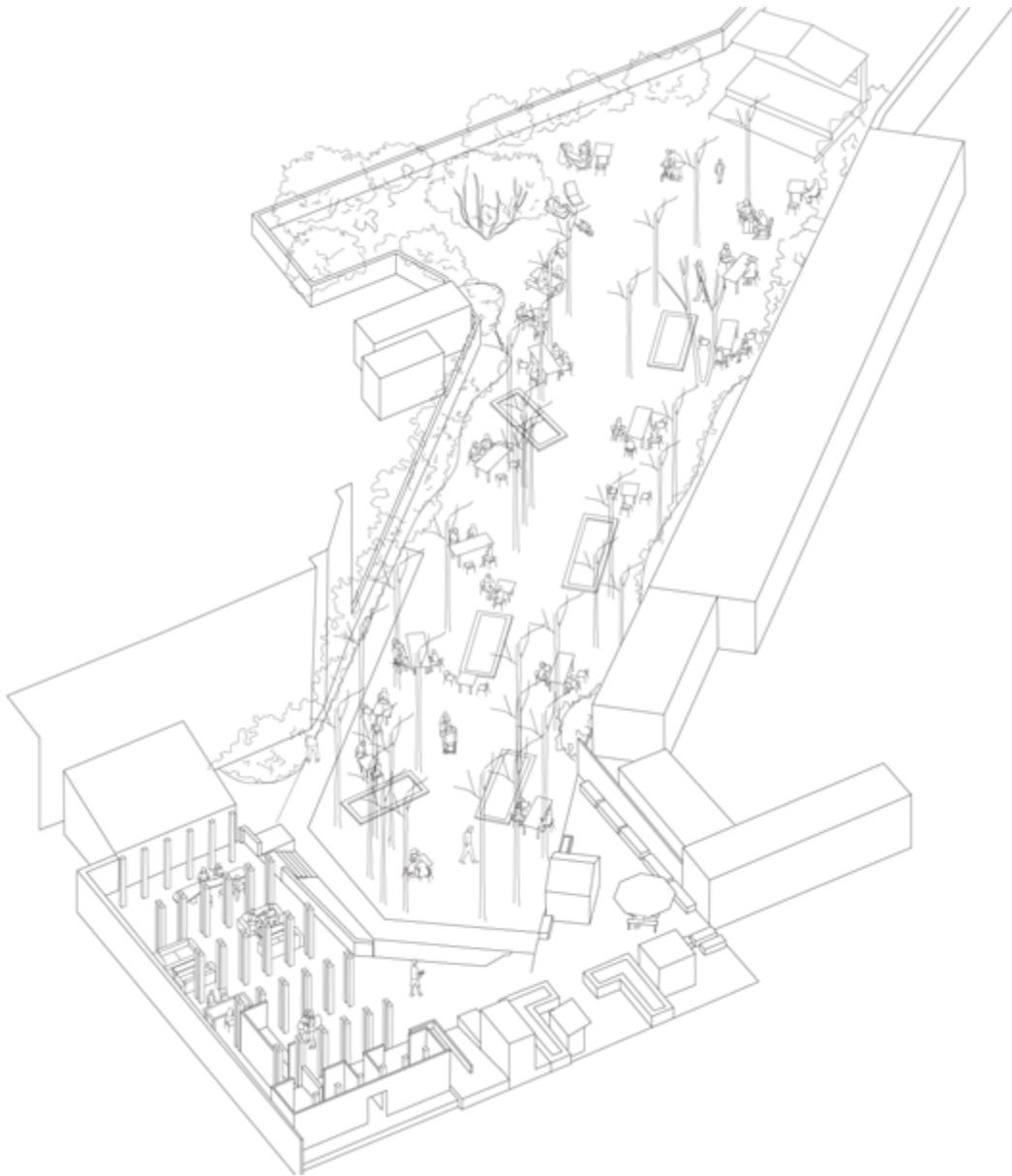
FIG. 6.17 Social activities in normal days
Although small in scale, the garden provides various options for staying a while: sitting in the pavilion, meeting with groups in the outdoor open air, sitting in a more solitary way in the end section of the garden, or a playground for parents and their children.

FIG. 6.18 The end section of the garden
The end section is less defined, with a playful space underneath the pre-existing butterfly bush, and an attractive stage at the back.

Cultivating a Sense of Place

The design introduces a foundation to allow social practices to be followed that make the garden a meaningful place in the neighbourhood. This process results in a rich material world that embodies social practices happening within the garden, for example, the products from various workshops, the furniture or ornaments made by the community. These objects contain the collective memory of the garden's users, providing rich narratives of the space and inviting new visitors to disclose the stories behind this intriguing material world. From this perspective, the design nurtures a sense of place rather than defining the narrative of the space from the very beginning. As described by Edward Relph: " 'Genius Loci' cannot be designed or ordered. It has to evolve, to be allowed to happen, to grow and change from the direct efforts of those who live and work in places and care about them" (Relph, 2002).

The resulting space fleshes out Lefebvre's notion of the lived space. According to Lefebvre, the lived space is a socially produced space, through people's own means of production and with the tactics developed in everyday life. This space manifests local identities and the unique social context of each site. In the garden, the formulation of this lived space is closely connected to a mixture of public and domestic. Anne Wagner discussed a "domesticated publicness" on the insights gained from how public and private realm are entangled in the temporary urban spaces (Wagner,2016, p. 130). According to Wagner, the mechanism of domesticated publicness is that "everyday doings serve as urban life promoting attractions and their existence in an unusual spatial context contributes to that attraction" (Wagner, 2016, p. 353). Similar to the situation of Dalston Eastern Curve Garden, the material world that mixes domestic and public attracts diverse social participation.

An Alternative Future for Dalston

The operation of the garden further raises local public's awareness and co-editing of the future of Dalston. Making Spaces in Dalston began with an idea to showcase the local culture and social qualities of Dalston. Through making those qualities tangible with the promotion of pilot projects, the study persuaded decision-makers to integrate them into the future urban regeneration plan. With a growing number of visitors enjoying the time spent in this green oasis, and with more and more social events hosted in the garden, local people have started to appreciate the value of such urban open spaces.

Since 2013, the garden's plot has been under threat of being taken over by the development of Kingsland Shopping Centre, a conflict which raises more and more debate on the radical approach of urban regeneration and on the qualities of urban open spaces. In 2020, Hackney Council launched the consultation report *Towards a Dalston Plan: key issues and objectives consultation*, as a preparation for the Dalston Plan[19]. The report clearly states the value of Dalston Eastern Curve Garden and other green open spaces like it. The development of Kingsland Shopping Centre needs to be integrated with the garden in terms of sunlight and architectural quality. From this perspective, the garden has impacted the urban regeneration process and revised the future of Dalston to include more citizen-engaged green open spaces.

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[19] The Dalston Plan aims to create better places for people; physically, economically, environmentally, and socially, and will set out objectives and proposals for the town center.

Evaluate Design Through the Social Lens

The design germinates the conversation between the decision maker and the local groups. This established bond allows the garden to operate in the middle ground between the top-down approach and bottom-up initiatives. As a lively social place in the neighbourhood, the success of the garden cannot be separated from the everyday engagement of the two managers. The value of the design can be summarised in two aspects: Firstly, the design forged a social network between local interested groups, stakeholders, and decision makers. The newly established agreements and cooperation make the garden's establishment and management possible. Secondly, the design of the garden's programme consists of both defined and undefined programmes. Within this framework, the garden can accommodate multiple visitors and activities. The operation of the garden further informs the urban regeneration plan, editing an alternative future together with raised social awareness. In this light, the garden is not only an outdoor space "for use", but also an important incubator that sustains the social, cultural, and physical identities in the ongoing urban transformation of Dalston.

6.5 Ecological Lens: Reconciling the Ruderal and the Horticultural

6.5.1 Replacing the Topsoil

The site had previously been a hidden backyard, of which most surface was covered by ruderal plants. The design transformed the site into a cultivated garden, with newly added trees, shrubs, edible vegetation, and seasonal perennials. To create the right conditions for the new planting of the garden, it was required that the barren and polluted surface soil of the site be replaced. Surprisingly, when the top layer of the existing surface, which was fully covered by wild grasses and shrubs, was removed, a significant amount of rubbish was revealed underneath. This was due to the fact that the site had once been informally used by people as a dumping ground. The rubbish was removed and the polluted ground replaced with clean soil. Most of waste was plastic products that last for centuries, and which have a substantial side effect on the soil structure, nutrition, and material circulation. From this perspective, the design intervention, although it removed the previous ruderal species, had an overall effect of improving the long-term ecological conditions of the site.

6.5.2 Accessing the Existing Biotic Groups

The existing ruderal species were not abruptly taken away as useless wildness. Instead, the design preserves some existing shrubs and trees on site, for example, *Buddleia davidii* (butterfly bush) were kept or re-arranged on the site and a mature *Acer campestre* (field maple) was kept in its original location. Altering the site into a communal space meant that the existing ruderal ecology needed to make space for social activities. However, the design didn't neglect the ecological value of the leftover space. Through reserving existing species that were more permanently established, the design safeguarded a continuity in the transformation of site.

Setting up New Habitats

In the garden, there are three main types of planting established by the design: the open ground, the raised bed, and various pots and containers. The open ground is the habitat for trees including *Betula pendula* (silver birch) and *Alnus glutinosa* (common alder). The raised planting beds are mostly found along the borders of the garden, planted with a group of shrubs and climbers, including *Quercus* (oak), *Carpinus betulus* (common hornbeam), *Prunus avium* (wild cherry), native *Crataegus* sp. (hawthorn), and *Vitis vinifera* (wine grape). Smaller rectangular raised beds can be found in the middle open ground, planted with annual or perennial herbaceous, flowering bulbs, or vegetables. Additionally, different kinds of moveable pots and containers can be found throughout the garden, including planting boxes, pots, or unused iron cans. Most of these flexible pots and containers were placed on the garden's terrace, used for growing bulbs, herbs, or vegetable sprouts. Additionally, a small nursery cabinet and a greenhouse were built for breeding new plants (Figure 6.19).

Pots & containers
Planting beds - herbaceous
Planting beds - herbaceous & shrubs
Nurseries
Trees

FIG. 6.19 The growing conditions of the garden
The design transforms the previous wildness into a place of horticulture. More diverse forms of planting were introduced in the garden, providing conditions to host a variety of vegetation.

The vegetation growing in the garden comprises mostly species that are native to temperate marine climate. The selection gives equal concern to seasonal scenes and aesthetics, ensuring that various ornamental characteristics could be found during all seasons. Spring is the main blooming season, and various bulbous species (*Narcissus* spp., *Tulipa* spp., *Erythronium* spp., *Hyacanthus* sp., *Crocus* sp. and *Muscari* sp.) and herbaceous species (*Primulas* sp., *Allium hollandicum*, *Centaurea montana*, *Hellebores* sp., *Anthriscus sylvestris*, and *Myosotis* sp. are planted in the garden. The summer scene features *Monarda didyma*, *Cosmos bipinnatus*, *Lathyrus odoratus*, *Epimediums* sp., *Knautia macedonica*, *Linaria purpurea*, *Cephalaria gigantea*, *Salvia forsskaolii* and *Geranium pretense*. Summer is also the blossoming season for some shrubs and climbing species including *Trachelospermum jasminoides*, *Syringa vulgaris*, as well as the espalier plum and apple trees. In the autumn, the leaves of birch and maple delivers different shades of red and yellow. Autumn is the season for preparing spring flowers for the following year, so various bulbs were planted by the volunteers on autumn weekends.

The garden is managed with minimal artificial chemicals or potable water. The fertilizer is composted on site and rainwater is collected in recycled whiskey-barrels. While the planting containers need more frequent watering, the planting beds are only watered during very dry seasons. The group of trees project shade on to the garden, screening the sunlight for the planting underneath. The garden also welcomes wildlife including wild birds, bees, and insects. Although the site is currently no longer an undisrupted wildness, it establishes a closer relationship between humans and nature; now, people are much more affected by the beauty of this new ecosystem.

6.5.4   Gardening: Appreciating Nature Through Taking Care

The new plant community is maintained by gardener Emma Rey and the volunteers; gardening sessions are organised weekly. The planting scheme is constantly adjusted by the gardener, according to the seasons and in response to the performance of certain species in the previous years. Similar to the process of wilderness, the garden also exhibits a sort of dynamic, not only driven by natural agencies but by the interplay between social agencies and the practice of gardening. In the garden, people are actively engaged with the activity of gardening. In the spring, there are workshops to discuss the planting scheme for the new year. Some plants in the garden are donated by the friends of the garden. The garden's maintenance is not as mechanically regulated as other urban green spaces. The plants' needs are considered to be similar to human needs. Compared with the previous leftover situation, the site shows its visitors a more intimate and animated natural environment. Through presenting the beauty and agency of nature, the garden affects its visitors and allows people to relate to the non-human forms of life that share the space of the garden. The practice of gardening brings people to observe the performance of nature and to be a constructive part of the process of growth. This notion of gardening also relates to the previous discussion in *6.4.2 Nurturing Stewardships*. There, the two managers, who organise and manage the social activities, interactions, and events in the garden, can be assimilate to the role of a gardener, as they observe the garden's everyday and make decisions of adjustments. Both the discussion of stewardship and the gardener highlight the requirement of certain social actors that involve constantly in the site transformation, thereby making the process of the site incorporate dynamic changes.

6.5.5   Evaluate Design Through the Ecological Lens

Looking through the ecological lens reveals an essential design tactic that mediates between the social benefits and ecological qualities of a leftover space; the design can introduce a closer relationship between humans and nature with aesthetic experience and a sense of affection. This effect can be reached by giving attention to and taking care of biotic species hosted inside the garden, through the practice of gardening. The transformation of the site shows a different design response to the wildness of leftover spaces; instead of preserving the wildness from human interference, the design could also re-introduce a semi-spontaneous nature with emphasised aesthetic effects and seasonal changes.

6.6 Material Lens: A Tamed Urban Oasis

6.6.1 Lush Sensory Experience

The garden, with its lush natural ambience, provides a rich sensory experience of sound, smell, and touch. The foliage of trees, shrubs, and perennials produces a collage of texture and colour; some foliage is fragile and slender, with fresh colours of lime and kelly green, while other foliage is robust and striking, with darker tone of forest green. Different woody species provide another group of textures, with different organic patterns of erosion and degradation.

The sensory experience is magnified with the designed entry route to the garden, which links to the analysis in the morphological lens. The urban street connecting to the garden has a monotonous concrete-scape with urban noises, frequent traffic, and pedestrian noise. People enter the garden through a small doorway at the end of the entrance square. The tunnel-like entrance, which forms a transitional experience of light and shade, marks the moment of arriving in another space.

Stepping down to the open ground of the garden, one walks on the ground surface of bark. The soft surface helps to absorb the sound of heels, allowing one to move freely without disrupting other visitors. Sitting in the garden, different groups of people shelter behind the slender trunks of birch trees, divided by the planting beds. The sound of chatter can be faintly grasped but quickly diffused. Sitting in the garden in the springtime, the spring breeze sweeps across one's face, taking the heat from the sun's radiance, while still letting people feel warm. The garden is a place of intimacy and escape, but it simultaneously interconnects with the public and the adjacent urban environment. The convergence of all these factors makes the garden a specific place (Figure 6.20).

FIG. 6.20 The sequence of entering the garden
The garden brings an image of both an urban oasis and outdoor living room. Its rich material world of nature and domestic objects provide an experience that is both intriguing and intimate.

Abundant Natural Material

Although the design changed the profile of the site from an abandoned plot to a community place, the previous image of the site, as a green oasis hidden behind the crowded urban surrounding, can still be recalled in the current garden. Before the design transformation, the site was covered by a mélange of ruderal herbaceous plants and its vertical dimension was occupied by a butterfly bush and two bulky maple trees. Together with the surrounding derelict buildings, empty warehouse, and deteriorated graffitied walls, the material world generates a sense of distance from the normative urban environment.

The current physical world of the garden, compared with the previous situation, is much more ordered and domesticised. The wild grass was changed into bark ground cover, outdoor furniture was added, and plenty of horticultural plants further embellish the garden's space. Nevertheless, the garden's image still recalls lush greenery, which responds to the image of its leftover status. Not only the ground level is covered by green, but also the vertical dimension is fully covered by the greenery of the hawthorn bushes, young oaks, and other shrubs and climbers. The material world of an urban oasis is sustained throughout the site transformation.

The main construction material used in the garden was wood; synthetic wooden sheets or natural timber were used for making planting boxes, paths, cross wall, and the skeleton of the pavilion, the green house, and some outdoor tables and chairs. As a natural material, the structure and appearance of wood is easily changed by environmental conditions. It might shrink, swell, rot, go mouldy, twist, crack, and bend over time. This characteristic in turn enhances the garden's natural image.

If the previous site was perceived as a hidden wildness in the built-up urban environment, then the new garden can resemble a green oasis that is simultaneously safe, inhabitable, and restorative. The continuity in the image of the site is not an accidental result, but because the designer fully acknowledges what the characteristics of the site are—as can be seen from the initial design proposal that values the rustic natural image of the site as "green link" that will "create amenity for education and escape" (muf architecture/art, & J&L Gibbons, 2009, pp. 44-45) (Figure 6.21).

FIG. 6.21 The image of the garden before and after design
Before the design, the site presents a world of wildness; after the design, the site still recalls its previous image as an urban oasis. Left: Copyright 2009 by J&L Gibbons; Right: Copyright 2019 by author.

6.6.3 Outdoor Living Room

At the same time, the garden's material world can be associated with an outdoor living room, a place where people rest and meet each other. The rich planting provides a shelter and enclosure, the tree trunks could be perceived as the columns of a lobby, the tables and chairs are scattered within the space, while the planting beds divide sitting area into different groups.

The image of an outdoor living room adds a layer of domesticity to the setting of the green oasis, introducing a sense of dwelling. In this respect, the design encourages people to occupy and appropriate the space. Laurie Olin asserts that the design of landscape architecture should inhabit people within the space by designing with the image form: "using a known body of forms, a vocabulary of shapes and by applying ideas concerning their use and manipulation" (Olin, 2002, p. 77). The interplay of images of urban oasis and outdoor living room allows the design to offer a sense of wildness and retreat as well as a gesture of welcome.

6.6.4 Various Objects from Domestic Appropriation

Having been in existence for ten years, the current garden is filled with various objects brought by surrounding residents. These objects are rarely new products but are used in people's domestic space or created during the workshops. As discussed in social lens, it results in a rich material world that reflects different previous usages and owners and recalls various social events in the garden (Figure 6.22).

This material transformation is facilitated by the design. Firstly, the design introduces a basic setting that accommodates visitors to the site. The welcoming gesture and comfort of the space provides a basis for raising within people a sense of attachment, and from there they will take the initiative to appropriate the space for their own use. Secondly, the design does not intend to make the garden a finished product, but leaves some spaces as flexible and "unfinished". The design provides a framework of enclosure, planting beds, and trees; the community brought pieces of decorations and the gardener introduced more plant species within this spatial framework. It is this well-defined framework, with a clear architectonic language, that ensures the following practices won't make the space congested or disordered. (Figures 6.23, 6.24).

FIG. 6.22 The material world brought by the garden's users
The following social usage of the garden enriches its material world, exposing the garden's everydayness.

Texture_from social appropriation

Texture_from planting
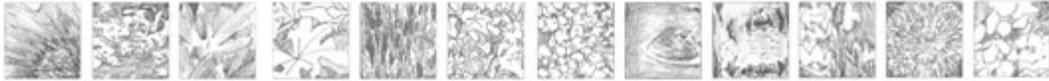
Texture_from garden constructuion

color_ garden construction

color_ social appropriation

color_ planting (general)

material_ planting (seasonal)

FIG. 6.24 The colour and texture of the material world

Different shades of green define the tone of the garden, together with the organic textures of plants. However, because of the vital, everyday social practices, the texture and colour of the garden present a more dynamic and hybrid pattern, displaying an animated image.

Material Juxtaposition at the Border

The transformation of the design can be visibly traced at the border of the garden. In this zone, the designed enclosure and the surrounding environment of the garden are simultaneously revealed to visitors. Because of the limited budget, the design's focus was mainly on the middle section of the garden. The construction at the border was reduced to the minimum, leaving the previous leftover situation untouched and exposed to visitors. These physical materials from the leftover situation are hidden behind, or juxtaposed against, the newly added fences and planting. This imperfection in the design intervention creates a dialogue between the old fabric of the neighbourhood and the garden.

The south border of the garden was originally open to adjacent backyards occupied by warehouses or informal parking. The design introduces a new fence made of light yellow bamboo panels, which screen off the disseminated surroundings and allow for a continuity to be perceived in the garden. The fence is constructed on the floor of the outside backyard that is higher than the garden's ground level. Because of this, at the bottom of the fence, if one looks closely, an underground layer can be found. This strange layer discloses the sunken condition of the garden. However, this detailing is not the intention of the design. Against the fence there was once a row of raised planting beds that covered this height difference. In the following year's transformation, the planting beds were brought down to the ground level. This adaption allows the interesting height difference to be revealed.

On the north border, there already exists a sort of enclosure from the adjacent backyard. However, this enclosure is much fragmented; it comprises the façade of the neighbourhood building, the brick wall covered with graffiti, and the shabby wooden boards of an adjacent backyard. Here, the design added a soft layer of enclosure—a continuous linear raised planting bed with densely planted shrubs. The planting is not as solid as the bamboo screen—the small openings provide a glance of an older enclosure. The verdant plants and deteriorating materiality of the fences generate a charm of overlapping temporalities (Figure 6.25).

6.6.6   Evaluate Design Through the Material Lens

The design in the material lens introduces an image of both wilderness and an outdoor living room, and in this way the design combines a sense of escape as well as dwelling in the garden. Two design approaches can be highlighted; the design brings changes to the material world with an acknowledgement of its existing characteristics. Further, the design adds new material to the site as a representation or dialogue with the existing. In this manner, a puzzle is made in the garden that entices people to become involved in the material world through close observation between old and new, and between the garden and surrounding urban context. This dialogue is made possible because the design tolerates certain informal aspects and takes the site's temporal situation into account. The design provides a basis for place attachment and further facilitates the material transformation of the site to be engaged by diverse social participation.

6.7 Summary: Orchestrating the Four Lenses, Cultivating Open-Endedness

The case study of Dalston Curve Garden highlights the benefit of designing with multiple lenses. The starting point of the design is similar to other urban bottom-up design projects that take the local groups' voices as a major design component. Even though satisfying the desires of local groups will achieve the social quality of this leftover space, the design was not generated only by this single aspect. The design further engages the site's historical narratives and spatial characteristics in the morphological lens, tracing a continuity in the material transformation, and preserving its ecological quality without completely giving way to the social usage of the site. The apprehension of the site's multiple qualities allows the design to bring forward continuity in the site's transformation, resulting in a strong sense of place.

At the same time, the designed space has a unified and balanced composition. It delivers a spatial framework that allows the later-stage appropriation of the site to be incorporated. The dynamics of appropriation enrich the composition of the garden rather than fragment it. The vitality in the garden's transformation cannot be separated from the two managers' efforts. The managers kept inviting new social practices from the local social network into the garden and came up with solutions that respond to different unexpected circumstances. This role of stewardship was nurtured in the design process by involving local groups at the early stage of the design and by maintaining close communication in the later design development process. Meanwhile, the designer also delivered a designed, articulated space that engages and affects people. In this way, the design lets the two managers become deeply bound to the garden and devoted to developing the garden as a favourable public space in the neighbourhood.

7 Conclusion: The Analysis and Design of Urban Interstices

This thesis opened by recognising urban leftover spaces as spatial-physical interstices of the city, and I asked myself how can design engage with the indeterminacy of these spaces. Observing several design endeavours to engage with the interstitial condition of leftover spaces, I found that they play out a paradox between the intervention of design that projects new definitions to the site, and the open-endedness of leftover spaces that allows the space to be inclusive for different users and host diverse processes. To disclose potential design approaches from this paradox, I established a framework of four theoretical lenses to read the potential qualities of leftover spaces and further developed them into analytical lenses for the study of seminal cases, to examine how these qualities were transformed by design intervention. The three cases were selected from a collection of eight design projects that display a gradient from regulated processes that exclude social, ecological appropriation to open-ended, spontaneous processes driven by multiple human, non-human agencies. Comparing with the rest of the cases, the three selected case studies demonstrate the quality of applying the spatial-physical design as a foundation for spontaneous social-ecological processes to take place. Having examined the three cases with a consistent structure of morphological, social, ecological, and material lenses, I would now like to summarise the different design instruments observed from the case studies of this thesis.

In this conclusion chapter, before introducing the insights on design instruments and approaches of leftover spaces, l will first summarise the research findings by returning to the method developed and applied in this PhD thesis. Exploring the design of leftover spaces with the mindset that emphasises the reading of site conditions as the prerequisite of design intervention, the four lenses— morphological, social, ecological, and material—serve as an important component

throughout the whole research. The lenses serve as the reading frame both for interpreting the qualities of leftover space from different aspects and dimensions and for examining the design transformation of leftover spaces in the cases studies. In *7.1 A Research Method of Four Lenses*, I will evaluate how the lenses-based framework is applied and performed throughout the research.

After evaluating the research method and discussing potential design approaches for leftover spaces, I will propose new design instruments gained from the three seminal case studies. This discussion will first draw on each single lens, to reveal design instruments for reading and expressing the morphological, social, ecological, and material qualities of leftover spaces. After that, I will discuss potential ways to design with combined lenses, thus different layers of attention can increase the possibility to make the site relevant, attractive, and prepared for different actors and thereby keep an inclusiveness and openness for leftover spaces

Lastly, I will discuss how the findings of this research bring new prospects to the relevant field of theory and practice. In particular, I will first review the scholarly discussion on leftover spaces, secondly the design of inclusive urban open spaces, and lastly the lessons for landscape architecture.

A Research Method of Four Lenses

As mentioned in the introductory chapter of this thesis, there are no preconceived methods that could be directly used or applied to approach the design question of leftover spaces. This thesis makes an attempt to fill that gap by proposing a particular research method based on a framework of four lenses—morphological lens, social lens, ecological lens, and material lens—that each offers a different perspective on leftover spaces. The following paragraphs summarise how the lenses-based research method is implemented in this thesis.

Chapter 1 Introduction sheds light on the paradox of the design that defines the site and the indeterminacy of urban leftover spaces. In order to explore such a paradox, the research needs to scrutinise the interplay between the spatial-physical design intervention and the site transformation after the design. In consideration of this, the case study is selected as the main research strategy and a framework of four lenses is proposed to understand leftover spaces from multiple perspectives. In **Chapter 2 Reading Interstices**, I developed further detail on the four lenses – 1) morphological characteristics, 2) social usage and activities, 3) ecological succession, and 4) material world— associated with the contemporary scholarly discussions of urban leftover spaces. This review prepared the theoretical foundation to apply the four lenses as the methodological apparatus for the case study. In **Chapter 3 The Transformation of Interstices**, I presented eight designed cases of leftover spaces and an additional non-designed case study for comparison. Analysing these cases with a matrix describing each case's relationship to the spatial-physical design and the following spontaneous social-ecological processes, three seminal cases were selected for a more detailed study.

In **Chapter 4 Pavilion Valby Smedestræde 2**, **Chapter 5 Jardins du Tiers-Paysage**, and **Chapter 6 Dalston Eastern Curve Garden**, the three design projects are examined with the four lenses, to reveal how the design in each case responds to the qualities of leftover spaces. During the analysis, I have translated the reading from different lenses into a series of analytical drawings, visualising them in the spatial, physical realm. Through making drawings for each lens, the analysis reveals how design responds to the site qualities in each lens. For example: how the design's layout anchors to the existing morphological characteristics, how the design delivers a layout for various social activities, and how the new material world invites bodily experiences. When adding a temporal dimension to the reading, the transformation of the situation of the site before and after the design can be examined and translated to a set of chronological drawings. The sequenced drawing represents the physical

transformation of the site that demonstrates whether the design enables a continuity in this process, so to say if the design derives from the site's existing conditions and if it facilitates the upcoming processes. This **Chapter 7 Conclusion: The Analysis and Design of Urban Interstices** presents a cross-case analysis that distils design approaches for urban interstices. The discussion reviews valuable design instruments in each single lens individually. Following that, the discussion focuses on the complementarity of different lenses, which demonstrates valuable combinations of lenses and indicates the shortcoming when a design focuses only on a single lens.

During this research, the most crucial role of the lenses is that they provide focuses and awareness on the different dimensions, qualities, and characteristics of the leftover space. The unkempt and abandoned image of leftover spaces tends to prevent people from recognising the potential benefits of these spaces. In this respect, the four lenses provide a basis for reading leftover spaces' characteristics and conditions. Focusing on reading these qualities through each lens helps to further understand the connections and synergies between multiple lenses. For example, the design of Dalston Curve Garden investigates and responds to the social, ecological, and material lenses. Through social practices such as volunteering in gardening, and through enriching the material world with abundant horticultural species, the design brings visitors into a closer relationship with the garden.

The lenses, as the framework for analysis, support the reading of cases in a consistent and comparable manner. During the case study, all three design projects were filtered through all four lenses, and it turns out in each case that the design emphasised different lenses. For example, the Valby Pavilion focused on a social lens, the Garden of the Third Landscape integrates the ecological lens, morphological lens, and material lens, while in Dalston Curve Garden, the design simultaneously plays with all four lenses. In this way, observing the transformation of three cases, the framework of lenses allowed a comparison of design that engages a single lens or the combination of multiple lenses. This is the reason, for example, why Valby Pavilion quickly lost momentum in hosting temporary public activities. It is partly, as has been stated in earlier reports, because of the lack of funding for the project and partly because the pavilion was built to accommodate only social events. However, the analysis through four lenses shows that it is also because the focus of design is much on the social function of the pavilion, which results in fact that material characteristics and existing ruderal ecologies of the site are excluded in the design proposal. As a consequence, new visitors can hardly understand the unique characteristics of the site but only take the site as a temporary social event place. When the analysis of cases goes through all four lenses, the examination of the design intervention could be more independent from project descriptions offered by design offices or other reports. In this way, it will enable the analysis of different cases in a systematic and objective manner.

However, applying specific lenses may result in the exclusion of new lenses found along the research process. Reflecting on the analysis of case studies in this thesis, more lenses might be added. A first one is the semiotic lens, which discusses the signs and symbols present and perceived within a space (Riesto et al., 2018).

The analysis of Dalston Curve Garden, in *6.6 Material Lens: A Tamed Urban Oasis*, demonstrates that experiencing the garden as a meaningful, specific place is crucial for the open-endedness of this case, because in this way local people are attached to the garden at a deeper level and develop an initiative to engage the garden's transformation. Examining the design through this lens allows us to understand how people's interpretations of the narratives, memories, and meanings of the site relate to its spatial-physical conditions. Another potential lens is the political lens. In the process of reserving the site of Valby Pavilion, described by Wagner in her article "Contingency, debate, and popup 'hygge' at Valby Pavilion: Situating temporary public urban settings in design critique" (Wagner, 2018), an entangled political contest between the Valby Local Committee and the City Council of Copenhagen is crucial for saving the site from being sold to the supermarket developer, which makes the further public appropriation of the site possible. The rivalry between different political agendas existed through the whole process of the site's transformation.

For a vacant site such as this, in a central urban district, the decision and support of local government tend to have more influence than the design solutions. Therefore, examining the design through a political lens could provide insights on legal circumstances, urban planning visions, and the interests of different social actors that influence the site transformation.

7.2 Designing Leftover Spaces (I): The Singular Lenses at Work

In this thesis the lenses are used as a research method. Most importantly however, they should not only be considered for research, but as a design approaches, only then the paradox of designing leftover spaces can be countered. In this section, I will reveal their value as design instruments from the analysis of the three seminal cases. Reviewing three cases through each single lens, design instruments can be identified that transform leftover space responding to specific qualities of the site and facilitate an open-endedness in the further transformation.

7.2.1 Morphological Lens

The prerequisite of design through the morphological lens is to recognise the site as a specific place, rooted in its specific geographical location. It is the location of a leftover space that determines its various characters including its nature condition, and its urban, and social-cultural context, etc. In order to understand the leftover space as a specific physical place, the designer can read the latent geometric and spatial qualities of the leftover space and understand how these formal characteristics are formulated during the site's past transformation. The information gained through a morphological lens provides the designer with the basis for composing a new spatial-physical layout of the site. Design through the morphological lens also demonstrates a paradox: on the one hand the leftover space is an inextricable part of its surrounding urban composition, on the other hand it has an interstitial form that is vague, disordered, and unregistered. The task of design is to integrate both conditions, helping a leftover space to simultaneously connect to its surrounding while distinguishing itself from other everyday urban spaces.

Understanding the site's location as a spatial-temporal interstice

Recognising each leftover space as a specific geographical place means the design will no longer take the emptiness of the site for granted and project new urban functions and programme abruptly. Instead, the design is inclined to consider the so-called emptiness of the site as a promising condition to host multiple social-ecological pioneers in the local context. In Dalston Curve Garden, the initial vision of the design was to transform the site into a secret route and a wildlife reserve, as a part of the local pedestrian system (Figure 7.1). This idea is primarily developed from the linear characteristic of the site that is defined by its previous use as a railway. In the design of the garden, the linear feature is utilised as the principle for composing the space. As the result, the designed space lets visitors recall the previous trajectory of the site, conveying a unique sense of place that is part of the historical transformation. This way of approaching leftover spaces highlights them as spatial-temporal interstices of the urban environment. Interpreting the potential of such spaces needs to be embedded in their urban context as well as their previous site transformation.

FIG. 7.1 The first design proposal of Dalston Curve Garden
The design exposes the linear vacant site as a passage in the local pedestrian system. Copyright 2009 by J&L Gibbons.

Exposing the geometric and spatial characteristics

The situation of a leftover space often seems cluttered and disordered, therefore prohibiting visitors from perceiving the space as a specific, meaningful place for future engagement. Exposing the morphology of a leftover space—its geometric and spatial characteristics—through design principles such as an axis, grid, dimension, and proportion, makes a connection between the existing and the new layout of the site. In Valby, the design places the pavilion along the extension line of Smedestræde (Figure 7.2). The pavilion allows visitors to perceive the diagonal direction of Smedestræde—as a historical lane in the neighbourhood. Additionally, people from Smedestræde could see the roof of the pavilion corelating to the roof of houses on Smedestræde because of their same orientation. Through exposing the geometric and spatial characteristics, the design enhances the site, reconnecting it with the surrounding urban realm.

FIG. 7.2 The plan of the pavilion
The pavilion is projected in line with the historical street Smedestræde, speaking its relationship between the pavilion and the urban context. Copyright 2018 by A. Wagner.

In conclusion, the design could give expression to the morphological characteristics of the leftover space as a specific geographical place. The key is to read the leftover space as an interstice. The findings on the design's reading could be directly represented in the new design composition or serve as a reference for design. These ingredients elicit visitors to perceive the site as a unique place. Furthermore, these design approaches in the morphological lens, embedding the site in the urban surroundings, allows more exchanges between the site and its multiple contexts. In this way, it provides the basis for opening up the transformation of the site.

Social Lens

Leftover spaces might be ideal places for informal social activities. The hidden character and vagueness of ownership of this space encourages people's appropriation. However, these conditions simultaneously raise a sense of insecurity that prohibits the usage of the general public, described by Oswalt and Overmeyer as "inhibition thresholds" (Oswalt, Overmeyer, & Misselwitz, 2013). Under such circumstances, the primary task of the design is to re-introduce the site into the social realm, welcoming different types of social activities. At the same time, the designer needs to avoid losing the charm of hiddenness and vagueness of the previous leftover situation – another paradox the design could embrace.

Inquiring the desired and the potential social activities

To think of new social usage in a leftover space, the first step for the designer is to explore possible social activities. The decision of the designer should not only satisfy the interests of the decision-makers, nor a specific social group. Instead, the vision should be developed in combination with an understanding of the existing urban programme and ideas from the local public as well as an exploration of possible futures. The design process of Dalston Curve Garden shows a participatory design workshop could be scheduled in the beginning stages of the design process, to involve residents in the decision-making process. This early-stage involvement lets them become more open to, and more inclined to accept and cooperate with, a final design solution, even a design solution that is not exactly what the local people proposed at the beginning. Apart from talking with local social groups, the designer also studied the social context of the neighbourhood, diagnosing the potential of the site simultaneously from the structure of urban open spaces, demographic profile, and existing cultural activities. The case of Dalston Curve Garden also shows that the voice of local people sometimes does not have to be leading. They may only be

able to respond to their current requirements and interests. Furthermore, because they do not have insights on the larger urban scale as the designer, their desired programme tends to miss the role of the site's becoming in the ongoing urban development. Therefore, the design should not only satisfy the desired use from local groups but also allow the site to complement the existing and future urban social life.

Enabling multiple social activities

To accommodate new visitors, the leftover space should first cater for basic human needs in using the space, for example, a shelter offering shade and a sense of protection, or a comfortable sitting area. Both in Valby Pavilion and Dalston Curve Garden, the spontaneous vegetation was cleared away, and built constructions provided a sense of shelter, and a frame for different uses. In Dalston Curve Garden, both the pavilion and the garden space are designed to provide the requirements of shade and seating.

To do justice to the quality of indeterminacy of interstitial spaces, besides satisfying the basic needs of people's usage, the design also needs to provide opportunities for unplanned activities and creative practices. In Valby Pavilion, the pavilion is merely a skeleton without any suggested form of occupation. The design could further entice the appropriation of the site from new users. The final section of the Dalston Curve Garden is left without definition. The butterfly bush that was trimmed into an arch shapes a half-covered space underneath. This advantageous setting inspires the neighbourhood children to use the space as a playground. In the middle part of the garden, the trees and planting beds provide a fixed spatial framework, while people could freely move tables and chairs. This arrangement—a combination of a formal structure and flexibility of usage encourages visitors to appropriate the space for their own purposes (Figure 7.3).

FIG. 7.3 Social activities hosted in the garden
A diverse range of social activities are organised in the garden in weekly basis. Copyright 2014 by dalstongarden.org

Establishing a role of stewardship

By providing a flexible, inclusive foundation, design can facilitate the site to accommodate multiple social groups and diverse social events. However, what design can do to the long-term open-endedness is only part of the story. To support the site continuously in its exchange with social-cultural dynamics in the local context, a stewardship is required to take care of the process after the design. In Dalston Curve Garden, the daily management of Murray and Cumming from the local campaign group OPEN Dalston—taking care of the gardens' everyday affairs, setting rules for special visitors such as beggars, and planning different social events with neighbourhood artists or volunteers—guarantees the maintenance of the garden and further nurtures a strong social identity within the space. The managers mediate between the requirements of various users and the role of the site in the overall urban agenda, allowing the site transformation to be inclusive and open-ended.

The case in Valby also shows that a host helps the site to develop a unique identity and to attract attention from local people. After Nima Alijani took over the site, he became its spokesperson. People felt more attached to the site because there was a person there to talk to. However, Alijani's primary interest was his bar, rather than the site as a public space; in addition, he actually didn't know much about the site's future. Like Alijani, Murray and Cumming don't own the site; their focus is on taking care of the needs of the public and developing the social, cultural activities. Stewardship allows the site to be maintained according to the vision of design, but also to develop in tandem with local initiatives. This would attract attention in the local environment and invite more practices from different social groups. The concept of stewardship further highlights that for maintaining an open-endedness of the site, it requires shared responsibility from multiple social actors. In the following section *7.4.4 Sustaining*, the relationship between design and multiple social actors will be elaborated.

7.2.3 Ecological Lens

When designing through an ecological lens, the first concern is given to the existing ruderal ecology of a leftover space. Next, the design could consider if and how to enrich this ecosystem through improving habitat conditions or diversifying the species groups. Furthermore, formal and artistic design languages could be borrowed to expose the aesthetics and temporalities of nature, which will call forth visitors' sympathy and affection for the world of non-human beings. In this case, the design also needs to concern the underlying ecological aspect of the paradox: introducing human visitors and artificial interventions to these spaces will inevitably endanger the existing species. Therefore, the designer needs to make a conscious decision on the balance of protection and development and between social usage and ecological process, to decide the frequency of social activities, and to demarcate spaces for ecological evolvement. Furthermore, minimal design interventions can be applied to engage with existing ruderal ecology, improving the ecological conditions without excessive input of energy and resources.

Valuing the site condition as an ecological reservoir

The ecological value of the leftover spaces, as the reservoir of wild species in the human-controlled urban environment, tends to be undervalued by design. Thus, reading the ecological qualities of the site deserves attention at the starting phase of the design process. It is especially interesting to review the design process of the Dalston Curve Garden. The starting point of the design recognised the site as an ecological corridor in the existing urban green network. Although the following discussion with local groups changed the original design proposal, the designer kept abundant natural qualities in the garden's final design layout. The design inserted many planting beds in the garden and kept several ruderal plants from the leftover situation on site. Hence, the designer's awareness of the leftover space's ecological qualities determines if natural processes could be integrated in the site's future transformation. Although the landscape architect's expertise cannot be compared with that of the ecologist, a preliminary assessment of the ecological condition of the site should be included in the site reading phase. These conditions include the microclimate and plant species, especially the indigenous species, trees, and shrubs.

Laying foundations for ecological evolution

As valuable components in the urban ecosystem, the design could consider preserving the biotope of the leftover space as an ecological reservoir. Or, in other ways, the design could artificially diversify the site's ecological process. In Gardens of the Third Landscape, the design introduced several new types of substrates to further vary the fertility and moisture for growing. The later process was left to be developed by unforeseen artificial or natural factors such as human and non-human visitors, the climate, and the relationships between different species (Figure 7.4). In contrast, in Dalston Curve Garden, new plants were directly introduced to the site and were regularly maintained by the gardener and volunteers. The two seemingly contradictory design approaches have a common aspect: enriching the ecological condition of the site, adding complexity to the situation.

FIG. 7.4 The initial stage of the Garden of Labels
After several spring rainfalls, the wild plants started to emerge on the substrates laid by the design. Copyright 2009 by Coloco.

Exhibiting the performance of nature

Another design response is to reintroduce to people the independent agencies of nature. This design tactic manifests in both the Garden of the Third Landscape and the Dalston Curve Garden. In the Garden of the Third Landscape, the design deliberately gave artistic expressions to the layout, making the garden satisfy more than just the functional requirement of establishing a new ecology. Species with different textures were mixed in the planting schemes, and the layout of the planting bed was further elaborated into different artistic patterns. The setting establishes a stage on which to show visitors the temporalities of nature and the succession is displayed in an artistic, sensitive manner. The design speaks to human visitors about nature's capacity to bring in changes and to recover the environment exploited by human practice.

Material Lens

As unmanaged and unorganised spaces, the material world of leftover spaces is usually unkempt, wild, and even in ruin. The image of such a material world is too disordered in most situations to be appreciated by ordinary visitors. Therefore, adding or adapting to space, a designed layer that frames, counteracts, or orders the existing is necessary. The design provides an inviting, welcoming, and everyday language that enables the perception of the space. However, an encounter of uniqueness and "outsideness" still needs to be experienced in the new environment. Interlacing the existing and the newly added materials and creating dialogues between complication and order and between surprise and familiarity could play a crucial role in the design intervention.

Knitting old material in the new narrative

The results of the design will bring new materials to the existing situation of the site. The old and new materials come from four different sets of origin: new materials introduced by design, original material from the site's leftover situation, materials from the (natural or social) appropriation in the meantime, and materials from the transformation after the design. Examining three design cases in this research presents three different approaches in this respect.

In Valby Pavilion the old and new materials juxtapose each other. The design's very focus is to project the new architectonic object—the pavilion—onto the existing site. The original material world—the overgrown land and shabby houses—offers an irrelevant backdrop. The contrast between the white wooden pavilion and the wildness highlights the pavilion, but in the most basic sense, the white pavilion does not speak to the rest of the site.

In Dalston Curve Garden there is subtle contact between the four types of materials. Although the design has changed most of the original material, at the garden's edge, the shabby wooden boards and brick walls are kept and a row of climbers and bushes has been added as an extra layer to the original edge. The overlaying allows people to speculate about the garden's previous situation and to relate the garden to its surrounding environment.

In the Garden of the Third Landscape, the design deliberately introduced a dialogue between the old materials and new materials; the erosion pattern of the porous concrete surface simultaneously contradicts and plays with the texture and the colour of plants growing in the shallow planting beds. The old and new materials are

tied together to tell the story of the site's history and the connotations of the Third Landscape. To create such dialogues, the design can dramatize the contradiction or connection between the existing material world and the designer's intervention, making the old and new materials speak together about the narrative of the site.

The designer's experience and perception of the leftover spaces—the characters of otherness and unique sensory experiences—could be sources for the later design of the material world. These intuitive and fluid dimensions of the designer's experiences could be captured in the moment of entering the site, when the material entity of leftover space firstly unfolds to the designer.

Serving the restorative nature

Accompanied by the decay of artificial material, the growth of nature comes to reoccupy interstitial spaces. The process of such growth transforms the site into the city's small-scale interstitial nature refuge, becoming a restorative green space close to the everyday life of city dwellers.

In the three design cases, the leftover space's wildness was kept or even enhanced. In Valby Pavilion, the growing grass, the wild bushes, and climbers on the border were moderately cleaned but not wholly swept out. Therefore, the site still presents a natural image. The popularity of TH Bar has much to do with the natural and garden-like ambiance of the site. In the Garden of the Third Landscape, on the concrete roof where hardly any original vegetation survives, the design established conditions for spontaneous nature. In Dalston Curve Garden, a variety of horticultural species were cultivated in the garden, replacing the previous ruderal species.

To enhance the restorative experience in leftover spaces, a balance between order and wildness can be made through design. As discussed in *2.2.4 Material Lens: Unfamiliar Encounters*, a fascination of nature is important in offering a restorative experience. Therefore, certain mysterious characteristics of original leftover space could be kept or transferred in the new design layout. The design could keep the materiality of the previous leftover situation while introducing the newly established nature as the destination or as the 'centre,' as in the case of the design of the Garden of the Third Landscape. Or, the design could keep certain species of the leftover situation and add to it more plant species and groups, striking a balance between cultivation and wildness, like the design of Dalston Eastern Curve Garden.

Augmenting material temporalities

Mainly visited by wild species and incidental human visitors, the change of material world is mainly driven by natural agencies: the decay, erosion, and overgrowth. The design, in this respect, could amplify or exaggerate those material transformations. In the Garden of the Third Landscape, the gardens exhibit the evolution, annual growth, or fading of species that adapt to the roof's unique microclimate. In Dalston Curve Garden, objects from its social events are kept as decorations and the furniture brought by local residents could be spotted here and there. From this perspective, the design could exhibit the material transformation of the site. The complexity of the material world will accumulate through time. It requires the initial definition of the design to reserve openness for other things to be added gradually over time.

Three types of material temporalities can be recognised in the three cases. In Valby pavilion, the material transformation is vibrant, but the separate phases didn't illustrate themselves as having developed from the previous situation; the initial wildness, the objects from social events, and the TH Bar are more like separate sections rather than a continuous transformation. In the Garden of the Third Landscape, the planting changes gradually according to the ecological principles. The process reflects the conditions of the concrete roof and the adaptivity of the newly established ecological community. In Dalston Curve Garden, the material is accumulated along with the everyday usage of residents. Looking at the furniture and decorations of the garden, people start to wonder who uses the garden and who "cultivates" this interesting and creative material world. The rich characters of the changes to the garden's material world delineate the social background of the garden (Figure 7.5).

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FIG. 7.5 The restorative natural environment in Dalston Curve Garden
With abundant natural material in the enclosed garden space, visitors enjoy the staying in the garden and detaching from their everyday urban life.

7.3 Designing Leftover Spaces (II): Multiple Lenses at Work

The previous discussion reveals design instruments for single lenses. The discussion already suggested that the design often addresses the qualities of leftover spaces using multiple lenses. Indeed, to combine several lenses in the design of leftover space is not optional but a necessity to offer an open-ended, inclusive design for leftover spaces. This section will show some examples of how different lenses could be combined. The examples do not present all the possible combinations, but they are the ones that specifically respond to the otherness and indeterminacy of leftover spaces and hence, deserve more attention from the designer.

7.3.1 Morphological + Social

Incorporating the leftover space in the urban realm

Most leftover spaces are closed to public entry, being either physically restricted because of the presence of fences or gates, such as Valby Pavilion and Dalston Curve Garden, or inaccessible to the public, like the location of the Garden of the Third Landscape. Creating a sequence of changes would reintroduce the site to the public realm, gradually bringing people to the leftover space. The sequence could play with the changing spatial form, visual connections, sign of enticement, and programme.

Thus, in most cases, the design needs to find or establish a new entrance for the site. Therefore, the designer needs to consider how the surrounding urban fabric defines the site's geometric and spatial character and what might be the best choice of the entrance location to connect the site to the public realm. Incorporating leftover spaces in the public realm presents a paradox between opening the leftover space that invites more public and retaining the hidden character of the site that elicits individual's creative practices. In Dalston Curve Garden, the entrance square offers a sign of welcoming. However, at the end of the square, one's sight is blocked by a black wall—only a small doorway carved from the wall, approximately one metre wide, serves the gate to the garden. The tunnel-like doorway indicates the garden inside but avoids the garden being fully exposed to the main street. Dalston Square, sitting opposite the garden on the other side of the urban main street, offers a direct contrast to the garden.

The square directly opens to and connects with the main road. Because of this, the square is perceived much as urban atmosphere. The contradiction between two public spaces is first and foremost defined by how they are introduced to the urban realm (Figure 7.6).

FIG. 7.6 The entrance of Dalston Curve Garden
A small gate and an entrance tunnel, constructed at the intersection between the garden and the urban street, delivers a strong sense of entering a new place.

Morphological + Material + Social

Augment the sense of dwelling: balance between orientation and identification

According to Christian Norberg-Schulz, the dwelling is when the space is known as a place and becomes home to people (Norberg-Schulz, 1996). The condition of a space to be perceived as a place is the presence of something "special and significant, being distinguishable from the environment" (Stenros, 1993, p. 80). In this sense, some leftover spaces may offer a strong sense of place, because of their hidden character, together with a cluster of wild, deteriorated material, allowing the space to be recognised in contrast to its surrounding urban context. However, mostly because of these characteristics, leftover spaces can offer little sense of dwelling. As a result, the visitor can hardly establish deeper connections and attachment to the place.

To perceive a leftover space as a place to be attached to, one needs both something different and unique, as well as something familiar and identifiable, according to the theories of place and human perception. Anne Stenros explains that people have two primary spatial orientations: being on the road and nesting. Being on the road describes a sequence of spaces heading towards something new, and nesting refers to static and fixed spots responding to one's need for safety (Stenros, 1993, pp. 79-80). What is mostly missing in the leftover space is a sense of orientation, and gaining this orientation requires a certain spatial order. From this perspective, a structural arrangement of fixed points and a sequence of transitional spaces could be arranged for the leftover space. This provides a mental structure by which to understand the site, serving as the first step to developing site attachment. In the Garden of the Third Landscape, the planting bed unfolds to the visitors through a series of either extremely open or enclosed spaces. Notably, a glimpse of the garden, long before physically being in the garden, is offered by a tiny frame cast on the gaps between two concrete walls. This trick creates in people a mental destination along the route, providing orientation in the maze of concrete walls.

Besides enabling spatial orientation, the design could moderately adjust the material world, to enhance the identification of the spatial image. In the Garden of the Third Landscape, the evolving wild herbaceous plants initiated by the design represent the image of pristine nature. In this way, it makes the garden appear more connected to its visitors, referencing our collective memory of mother nature (Figure 7.7).

FIG. 7.7 The image of nature in the Garden of Stonecrops and Grasses
The garden recalls visitors the pristine nature and offers a unique sense of place.

Furthermore, the sensory aspects are also vital for one's experience of space, as revealed by de Wit: "sensory data do contribute to the perceptual unity of the composition" (2004, p. 350). In Dalston Curve Garden, the sensory experience is intensified by the enclosure of the tree canopy. It helps magnify the sensory perception of the garden, surrounding the visitors with the sound of leaves, the talking of people, the birds twittering in the early morning or twilight, the fragrance of blossom, and the smell of fresh leaves. In contrast, in the Garden of the Third Landscape, the garden is completely exposed to the sky, resulting in the intangible sensory perception. The burning of the sunlight at midday distracts people from the being-in-the-garden. From this perspective, the design could emphasise the enclosure of the leftover space that allows visitors to capture the sensory perceptions of the garden (Figure 7.8).

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FIG. 7.8 The vast openness on the roof of the submarine base
The burning of the sunlight at midday distracts people from the being-in-the-garden.

However, if the design fully orders the site, it may lose the ambiguity and mystery of the leftover space, resulting in the specificities of the place being no longer identifiable. Thus, the order projected by design needs to develop a dialogue with the previous leftover situation. This dialogue could be shaped into a contradiction, like the case of the Garden of the Third Landscape, where new plants directly contrast with the concrete roof. Or, the dialogue could express a continuity, as in the case of Dalston Eastern Curve Garden, where the design transforms the site into a hidden world of nature. The new situation represents the previous leftover space as a green oasis in the surrounding urban environment.

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Social+ Material

Inscribe narratives into the material world

The unfamiliar material world of leftover spaces often seems to be in contrast to a welcoming image for people. Instead of fully refurbishing the site, the design can allow subsequent social practices to gradually enrich the site's material world and develop the identity of the place. In such cases, the material world can be understood as recording the narratives of social practice in the site's transformation. In Dalston Curve Garden, one will immediately be attracted by pieces of domestic furniture, decorative fabrics, and various workshop products. Those materials, spontaneously added by the garden's manager or local community, fabricate a thick layer of memories upon the initial design layout. It is reminiscent of Lefebvre's concept of "lived space" that has been discussed in *Chapter 2 Reading Interstices*. As lived space, the garden represents a layer of the space that is defined by the users, being shaped and re-shaped by their practices in everyday life. In this way, the identity of the garden, and its narratives, are not predefined but in a state of becoming. These vivid characteristics of the site allow first-time visitors to quickly become involved in the story of the garden. One could see domestic furniture and crafts that are familiar and intimate, while at the same time, one is enticed to know more about the garden and to be attached to the place (Figure 7.9).

FIG. 7.9 Material of appropriation
The garden is full of domestic furniture and objects brought by local residents, exposing the lived space that is nurtured in the local social context.

Ecological + Social + Material

Involve people in the ecological process: gaining an affection for wildness

The ruderal ecologies in the leftover spaces recover the site from human exploitation and enrich the habitat assortment in the urban realm. If the intrinsic value of this process lies in the fact that the underlying law of nature drives it, then any artificial intervention within the leftover space's ecosystem would be unnecessary. However, to address this ecological value does not mean that human engagement of this interstitial wildness needs to be restrained. Instead, introducing to people the aesthetics and transformative potential of these ruderal species, while the design can raise people's sense of affection to the world of nature and influence people's everyday behaviour, benefits the sustainability of ecosystem (de Block & Vicenzotti, 2018).

If leftover spaces are merely shown by an image of overgrowth, then people will only pass by these spaces without noticing the value and meaning of these spontaneous natural processes. Hence, part of the role of the design is to exhibit the system and logic behind this spontaneous nature environment, showing how natural elements such as soil, light, and moisture shape a habitat condition for the flora and fauna that inhabit there. Further, the artistic design language can be applied to exhibit the beauty and succession of this unique ecosystem, amplifying a sense of affection. In the Garden of the Third Landscape, the design does not merely respond to the requirement of growth. Instead, the stretching canal, the varied planting beds, and the pattern of planting scheme are orchestrated to make the garden's ecological system visible to visitors and to affect visitors with the spectacle image of spontaneous nature.

At the same time, social participation can be introduced to facilitate the growth of this newly established ecosystem. In Dalston Curve Garden, the regular gardening workshop brings them close to the natural world within the garden. Taking care of plants requires one to gather knowledge about these plants and to observe their growth and performance. Hence, it treats the cultivated species as not merely ornamental objects but as the inhabitants of the garden. Encouraging people to practice with the ecological process of the site will reduce the barrier between humans and the natural world and call forth sympathy (de Block & Vicenzotti, 2018). It could be done either through the practice of gardening or through artistic practices, translating and illuminating the cultural meaning and aesthetics of the spontaneous ecological process.

Morphological + Material + (Social and/or Ecology)

A spatial-physical framework for spontaneous agencies

To allow the open-ended transformation of the site, a mindset is required that allows the design to be understood as a foundation instead of a fixed product. This foundation not only functionally prepares the space for new social practices, non-human occupations, and material changes, but also serves as a framework that guides upcoming changes. This framework could be attained in the physical dimension of the site by designing through the morphological and material lenses.

In Dalston Curve Garden, the position of planting beds and tree trunks provides a flexible structure, which provides freedom for arranging outdoor furniture but prevents them from filling up space. A central axis is marked by design, and the end section is left open for undefined activities, and these structural elements save the space from being fully occupied by only the function of outdoor sitting. A singular form of occupation may run a risk of becoming dominant and excluding alternative processes (Figure 7.10). The framework of design could reserve some part of space without fixed function or apparent meaning. It would avoid one social group, one type of activity, or one ecological community to dominate the space and sustain the open-endedness in the leftover space's transformation.

FIG. 7.10 Sitting in the middle section of the garden
The tables and chairs are flexibly arranged in the spatial framework composed by planting beds and silver birch trees. The well-defined framework allows for diverse usages of local people after the design implementation, while guaranteeing the garden as a defined space.

7.3.6   The Merits of Designing with Multiple Lenses

The design instruments on combined lenses could guide designers to respond to and simultaneously elevate multiple qualities of a leftover space in the design composition. In summary, the design that engages multiple lenses has two merits. First, the design bridges: the combined lenses allow the design to introduce human visitors to the leftover space's natural world and latent identities with bodily experiences. The design opens a portal for visitors to know, to appreciate, and to involve multiple living beings or inorganic elements that co-define a given site. Second, the design facilitates: design with combined lenses calls forth visitors' affection for the site's natural world and persuade visitors to reconsider his relationship to the world of non-humans. This alternative way of knowing is not based on a utilisation point of view that approaches others as an exploitable unit, but with an attitude to engage as part of its system. In this case, the visitor would spontaneously participate and facilitate the site's open-ended transformation with individualistic capacities.

7.4 Approaching Leftover Spaces: Four General Modi Operandi

Discussing design instruments for leftover spaces from each single lens and from combined multiple lenses, I found that four general *modi operandi* can be discerned time and time again. The four operations are *disclosing*, *selecting*, *founding*, and *sustaining*, which correspond to the design procedure of site reading and site intervention. Similar operating modes has already been addressed by landscape architects including Christophe Girot. In Girot's article "Four Trace Conception in Landscape Architecture", four steps landing, grounding, finding, and founding are presented to serve a tool for disclosing and transforming site specific qualities. Deviated from Girot's proposal, the four modi operandi are discussed specifically responding to the interstitial condition of leftover spaces. Particularly, the operation of sustaining is proposed to emphasise the need that maintain the open-endedness of the site in the process after the design.

Disclosing refers the reading and interpreting of the site qualities; selecting refers to the step that filtrates the most interesting and important site qualities as the focus of the design; founding refers to the design intervention where new spatial, physical compositions are projected to the existing site, and sustaining refers to the site maintenance after the design, to prolong the effect of the design by responding to natural factors or artificial impacts that emerged during the transformation of the site. These four operations navigate designers to bring both the architectonic design intervention and the indeterminacy of leftover spaces into play in the site transformation process, allowing the design to facilitate more dynamic practices and processes that are inherent in the existing conditions of leftover spaces.

7.4.1 Disclosing

Disclosing would be the first design operation that responds to the interstitial condition. It primarily asks the designer to look at the leftover space not as merely empty and worthless. On the contrary, it requires the designer to regard the site as a potential container of hosting heterogeneous urban dwellers and spontaneous process. Further, the operation of disclosing suggests that the designer examine what could be nurtured with the site existing conditions. Disclosing indicates a mindset that concerns the leftover space not as a neglected site separated from

the surrounding urban context and urban life. Instead, it reads leftover spaces as embedded in the network of multiple human and non-human agencies. With this operation, the design of each leftover space needs to recognise the connection between the site and its various contexts, as well as the continuity between the history, identity and memories of the site, the current situation, and the future tendencies. Sebastien Marot states: "the landscape architectural reading of sites is not limited to quantities and capacities. Rather, it views the land and public space as an expression of ancient culture, or as a palimpsest that evidences all of the activities that contributed to the shaping of that particular landscape and no other" (Marot, 1999, p. 81). In the case of Dalston Curve Garden, the design not only reads the qualities of the site as a communal space for social usage but also it identifies unique aspects of the spatial configuration, material world, and ruderal ecology in the leftover situation of the site. This critical step allows the current garden to represent a strong identity and a sense of place. In the design practice, disclosing emphasises the responsibility of the designer when receiving the design task of a leftover space. It suggests that the designer can be to some extent independent of the client's requests and can examine the specific qualities of the site through multiple lenses.

7.4.2 **Selecting**

Selecting as an operation follows disclosing; it emphasises the designer's decision to work with specific qualities of the site. After understanding the leftover space's characteristics and conditions, the design comes to the stage to decide which qualities of the site are to be expressed or facilitated through the design intervention. This filtration of the site qualities is often spontaneously developed along with the design analysis and unintentionally leaves out other qualities of the site. Examining the design transformation in the three cases explored in this thesis demonstrates that manifesting certain qualities of the site will lead to other qualities being limited. For example, in the case of Valby Pavilion, the frequent social practices of the site led to the gradual diminishing of the ruderal ecologies established during the leftover period. With this in mind, the operation of selecting entails more deliberate concerning of designers on the potential consequences of the design intervention. When the design chooses to work with specific qualities of leftover spaces, it will inevitably affect other site qualities. Reminiscent of the operation of selecting, it ensures the design responds to the multiplicity and indeterminacy of leftover space in a better way.

7.4.3 Founding

Founding refers to the spatial-physical intervention undertaken in the leftover spaces.[20] The operation of founding initiates the first steps of the transformation of the site without strictly framing the outcome. To start the transformation, it requires spatial-physical intervention, to build something on site. To consider this intervention as founding—laying the basis, the first steps for future developments—means that there are two characteristics in the design's operation of founding. One is that the notion of founding means it is flexible, and open to participation and appropriation from multiple groups. The other property is that founding needs to be firm enough to provide a guiding framework and to provoke future adaptations or appropriations, thus constituting architectural qualities such as unity, balance, rhythm, emphasis, contrast, and sequence. Those architectural qualities facilitate an individual's spatial orientation and perception, which is fundamental to allow visitors to understand leftover spaces as unique places, and to encourage place attachment.

As a supportive foundation, the design could facilitate potential ecological processes like the case of the Garden of the Third Landscape, or it could provide a stage for diverse undefined social activities like in the situations of the Valby Pavilion and the Dalston Curve Garden. Furthermore, in Dalston Curve Garden, the design bestows on visitors an aesthetic experience, affection, and a sense of place. In this way, the design brings a deeper connection between the visitors and the garden. Because of this attachment, there are many local initiatives that demonstrate willingness to host activities in the garden, and local people like to visit the garden. It makes the garden a place for everyone and an incubator of cultural practices. The founding asks for the design composition to be neither completely fixed nor completely open for appropriation. Instead, it offers a formally defined framework that invites more engagement and practices to the leftover space.

The three design operations provide general concepts to engage with the multiplicity and openness of urban interstices. The steps of disclosing—selecting—founding comply with the conventionally applied design process. So, if disclosing can be seen

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[20] The operating concept of *founding* was introduced by landscape architect Christophe Girot in his article "Four Trace Conception in Landscape Architecture." Together with *landing*, *grounding*, and *finding*, they serve as a tool for landscape investigation and design, with special focus on the site. As Girot denoted: "Founding can be also understood as bringing something new to a place, something that may change and redirect a particular site" (1999, p.64), the four operational concepts enable the designer to understand the specificities of a place and transform them wisely. See Corner, J. (Ed.). (1999). Recovering landscape: Essays in contemporary landscape architecture. ProQuest Ebook Central Retrieved from https://ebookcentral-proquest-com.tudelft.idm.oclc.org

as site-reading and founding as spatial-physical design intervention, selecting is the node of transition between site-reading and the design intervention. However, although designers are used to seeing these steps in the above consecutive order, the three operations could also be applied vice versa; for example, founding could instigate a further disclosing of the site's potentials and qualities. The three operations allow the design's engagement of urban interstices as a process that enhances the characteristics of the leftover space.

7.4.4 Sustaining

The last operation—sustaining—highlights a requirement of stewardship that takes care of everyday processes of the site after the design has been implemented. The discussion of stewardship is presented in *7.2.2 Social lens: Establishing a Role of Stewardship*, elaborated by the practice of the two managers in Dalston Curve Garden. The stewardship's practice requires less the expertise of the designer and the architect, but it engages the site in its everyday transformation, making situated decisions on how certain adjustments can be made to sustain the dynamics and inclusiveness of the site. It is the responsibility of the designer to encourage multiple social actors to perform such stewardship.

At the early stage of the design, the designer can involve local groups in the design development process. It not only acknowledges these people's role in conceiving new spatial realities, but also lets them gain insights into site conditions including political, legal issues, local social groups, undergoing ecological process, etc. This early-stage involvement could foster an attachment and responsibility to the site, serving the basis for establishing the stewardship.

Furthermore, the designer can develop the site design in close communication with interested social actors. This communication between the designer and social actors is two-way: on the one hand, it collects ideas of desired usages or spatial arrangements, which allows the designer to synthesise them in the new proposal of the site. On the other hand, the designer could explain the design concept to these people, to let them understand how different design components work together as a whole. In this way, the designer simultaneously motivates interested social actors to participate in the site transformation in the long run, and provide them with the required knowledge to work with the necessary adaptations.

7.4.5 Conclusion

The interstitial condition of leftover spaces, as non-functional parts of urban system and as temporary intervals during urban transformation processes, leads to these spaces being commonly regarded as merely empty and worthless. However, with the operations of disclosing, selecting, founding, and sustaining, the design can now identify multiple qualities of leftover spaces and open-up the site for more diverse processes, practices, and meanings. These four operations are inherited in the practice of landscape architecture, derived from the discussion and analysis of the projects' basis from the landscape architecture perspective. However, only the operations of disclosing and selecting are commonly applied in the design practice of landscape architecture, while the operation of founding and sustaining—introducing architectonic design as an initiation of the transformation of the site and inviting stewardship that facilitates an openness in the future—are not consciously brought into landscape architectural design. Learning from the design paradox of leftover spaces, with the insights gained from the four design operations, I will now move on to discuss the new prospects for the design of urban built environment.

7.5 Towards an Open-Endedness in Urban Built Environment

The research question of this thesis on how the design of urban leftover spaces highlights a paradox of design and the previous discussion has provided a set of design instruments for engaging this paradox: through manifesting the specific qualities of each leftover space and inviting diverse human and non-human agencies to come into play, an open-endedness in the site transformation can be sustained. In the following section, I will move forward to identify a set of valuable prospects on leftover spaces in specific as well as the design of urban open spaces in general. These prospects contribute to making future urban environment inclusive for heterogeneous human and non-human dwellings in the urban realm.

7.5.1 The Multiplicity of Leftover Spaces

A feature in the current discussion of leftover spaces is that each research concentrates on separate aspects. The discussion is dominated by highlighting leftover spaces' social potentials (e.g., space for communal practices and informal cultural events) or ecological values (e.g., restoring the exploited ecosystem, accommodating urban wildlife). Other discussions have drawn on the dilapidation, waste, and decontextualised materiality of leftover spaces. Those single aspects of leftover spaces are worthy of the designer's attention; however, they remain partial and are not adequate to address various dimensions on the topic of the leftover space. Multiplicity is an essential quality of leftover spaces, highlighting these spaces' opportunities for change and spontaneous processes. By using different lenses, the research highlights the reciprocity between each lens, which bridges and mediates the social, ecological potentials and the aesthetic experience of the site, natural transformation, and the sense of place.

Acknowledging the plural qualities within a leftover space is a way to respond to leftover spaces' essential role in the urban environment; as interstitial spaces for multiple human beings as well as non-humans, and as vacancy of defined functionality that opens to undefined processes, communication, and exchange. The qualities of leftover spaces ought to be emphasised on multiple instead of singular levels.

Engaging Rather than Intervening

This research has examined the design transformation of urban leftover spaces. Admitting the value of design, the comparison between non-designed and designed cases reminds us of the merits of leftover space. The design may transform leftover spaces with new urban functions. However, the designer might also cherish those purely undesigned leftover spaces. These spaces of indeterminacy are valuable ingredients that diversify the category and capacity of urban open spaces. As interstices, those leftover spaces are capable of satisfying any needs and serve any urban function but are simultaneously open to becoming everything.

Therefore, although the main body of this research examines the design of urban leftover spaces, reflecting on the research findings, I would propose that it does not require the design to **intervene** in every leftover space, but the design can **engage** with those particular spaces. The design could take the initiative to examine whether there are valuable potentials and then decide whether to pursue an intervention. Neglect is a visible characteristic of leftover spaces, which influences the designer to presume the need for design intervention. Examples show that in some cases the intervention of design worsens the situation when the intervention has been made without questioning the potential changes brought to the current site. Therefore, the nuanced site reading from different dimensions and perspectives can be emphasised as a prerequisite. The site reading judges the necessities of intervention and sustains other cherished qualities within in a leftover space.

On the other hand, the design of the three central cases in this thesis, especially the Valby Pavilion, reveals that under certain circumstances design could safeguard the leftover space, prolonging its interstitial situation. The design could be a claim of the site's vacancy and provide an open structure that gathers more activity and attention from the public.

The Value of Designing Leftover Spaces

Regarding leftover spaces as urban interstices, many researchers have identified several potentials of leftover spaces. However, most of the existing discussion focusses on revealing the characteristics and potentials of leftover spaces, instead of focusing on design interventions. Existing insights on design often address the design strategy on the planning and management level, instead of site design. For example, a "'Light Touch' framework for intervention" is championed by landscape architects Krystallia Kamvasinou and Marion Roberts, in their study of the interim use

of London's leftover spaces (Kamvasinou & Roberts, 2014). In this case, the local authorities set up a framework for local interested groups to develop the unused land. This framework prepares the basic legal and programmatic requirements for local people to further develop their desired use. The proposal shifts the common trend on activating leftover spaces through empowering local groups, but it proposes that the intervention should combine both authorities and local initiatives. However, the discussion of how such a framework can be implemented on the spatial, physical level is not explicit.

Some scholars have proposed interesting design concepts, but at the moment, these concepts remain relatively abstract. De Solà-Morales, for instance, introduced the concept of design with the continuity of *terrain vague*, which he uses to persuade the designer to look into "the flows, the energies, the rhythms established by the passing of time and the loss of limits" (de Solà-Morales, 1995, p. 122). With a similar undertone, Luc Lévesque proposed that the designer should "start from what exists and generates new connections to reality" (Lévesque, 2002, pp. 16-18). Regarding these proposals, this research delivers design instruments with an emphasis on the spatial, physical, and compositional aspects of the design. In this way, the research findings complement the current theoretical knowledge on the design of leftover spaces.

7.5.4 Design with Multiple Lenses

Reflecting upon the four lenses in this research, I found that this lenses-based site-reading and design approach is relevant for the design of general urban open spaces. The design of urban open spaces nowadays is driven by different fields of interest. The design objective is frequently given to environmental issues or social, political agendas. However, the specific places, history, and memory of a site, and the aesthetic and bodily experience are also crucial in enabling the identification of a site as a specific place and one's role within the urban environment. Providing multiple lenses to conduct design would remind the designer of the various interconnected conditions and components of an urban open space. It allows design to nurture those intrinsic qualities of the existing site and to offer a productive future.

Meanings, Narratives, and Specific Places

To introduce open-endedness in the design of urban open spaces requires something more than inclusive and flexible design strategies. The architectural qualities in the design composition are equally important. It is the designed form that articulates the meanings in each open space, allowing them to be perceived as specific places.

This research explored the paradox of design, between the frame of design and an open-endedness in the future. The findings demonstrate that the paradox of design—as an initial foundation to facilitate undefined processes and as a formal, compositional definition—could be integrated into the design to enhance the open-ended transformation of the site. Therefore, instead of solving the paradox, designers can embrace the paradox in their design process as a productive element.

Taking account of the formal architectural principles in the informal, flexible design approach lets us reflect upon the designer's role in the current prevailing co-design mindset. Oswalt and Overmeyer state that "the heroic and visionary designer is replaced by an agent working on other's behalf. He or she is not a "decider" but rather an enabler who brings the various actors together. The users themselves become producers of space (Oswalt et al., 2013). It is necessary to acknowledge that the designer needs to negotiate with different stakeholders and interest groups. However, it is still worth emphasising the designer's expertise on the site-level, in terms of the spatial composition and material arrangement.

"If there can be no form without meaning, there can be no meaning without form" (Peterson, 1980, pp. 88-113). Overlooking the formal and compositional design, the design may lose the essence of expressing the manifold meaning of the site. If the designed form translates the site's historical and cultural narratives, and expresses them with the associated mystic and intuitive human dimensions, people will not only use the site but also engage with it. When people engage with the multiple dimensions, processes, and qualities of the site, their creativity and imagination could contribute to the dynamics of the transformation of the site. The design of urban open space needs to be a concern of both the functional and the artistic dimensions to invite dynamics, spontaneity, and multiplicity in the transformation of the site.

Design with Process: Open-Endedness and the Gardeners

Discussing the design of leftover spaces opens possibilities concerning what designers could do. In most situations, the designer can only decide upon the initial stage of the site's transformation. After the design implementation, the site process is mostly dependent upon the usage of the space, site maintenance, surrounding urban developments, and social changes. Open-ended design approaches prepare the initial condition that facilitates natural processes and social appropriations during the site transformation. However, to continue the open-ended transformation it needs the participation of multiple social actors to take care of the everyday operations and to respond to unforeseen changes, discussed under stewardship in *7.2.2 Social Lens* and in *7.4.4 Sustaining*. Here, I would like to further elaborate this role with an analogy of the gardener[21]. Like the work of the gardener: once the garden is constructed, it requires a gardener to adapt to the processes of growth and decay, to take out plants that might suppress others and nurture the unexpected but wanted ones, and to strike a balance between the growth of different species. The gardener plays a crucial role that keeps the garden's profile in line with the designer's vision, as well as making the garden more fascinating and fruitful over time. The open-endedness requires the site to consistently invite different human and non-human agencies, and the gardener is the one who continuously cultivates the site's openness and inclusivity in the process after the design implementation. In the case of urban open spaces, the role of the gardener can be expanded to a group of social actors, as the "gardeners" of the site. The gardeners fulfil the role of the site in long-term urban planning while engaging local needs and desires, to be played out in the site; they organise events on a daily basis and make decisions upon favourable adjustments; they can forge a network of decision makers, knowledge institutions, and social initiatives in the local environment, thereby sustaining dynamic, spontaneous, social-ecological processes to take place in tandem with the site transformation.

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[21] This role of the gardener is discussed in the writing of Gilles Clement and the thesis of Julian Raxworthy. Both authors propose the gardener's working approach as having a potential to engage with open-ended processes. See Clement, G., Morris, S., & Tiberghien, G. A. (2015). *"The Planetary Garden" and Other Writings.* University of Pennsylvania Press, and Raxworthy, J. R. (2013). *Novelty in the Entropic Landscape: Landscape architecture, gardening and change.* School of Architecture, the University of Queensland.

Coda: Landscape Architectural Design of Process

At the beginning of this thesis, I introduced two essential design practices of landscape architecture: reading site-specific qualities and exposing those qualities with the spatial-physical composition of design. The particular quality of landscape architecture, in the case of design in leftover spaces, is that landscape architectural design never abruptly imposes changes to the existing site but expresses the intrinsic qualities of the site and allows it to change and to evolve. In this coda, I will revisit several crucial notions from landscape architecture that repeatedly emerged in the discussion of open-ended design approaches for urban leftover spaces: landscape architecture as open-ended practice; site-specific design that enables open-endedness; landscape architectural design as mediation.

7.6.1 Landscape Architecture as Open-Ended Practice

The case study of the Garden of the Third Landscape highlights the open-ended nature of landscape architectural design. Dealing with the elements and processes from nature, the designer would never be able to fully define the outcome of a process, because there are always unforeseen factors that emerging over time. The outcome of the design intervention proposed by the landscape architect needs to be saved from fixed definitions, leaving room for subsequent natural changes or artificial practices that are still hard to predict at a specific moment. Indeed, because of this limitation of control, the design of landscape architecture is adapted to acknowledge multiple site qualities and prepare for a variety of potential processes.

7.6.2 Site-Specific Design Enables Open-Endedness

Landscape architecture primarily derives from special characteristics of a given site instead of market interests or functional requirements. Landscape critic Sebastien Marot distinguishes the landscape design as "the conscious interpretation, modulation or transformation of a given territorial situation or substratum, i.e. of a 'site'" (Marot, 1996, p. 11). By working with specific qualities of the site, the design serves the basis by which the human beings, plants, animals, and inorganic elements that

co-define the present site are invited to participate in the next transformation. Even though the design can only facilitate certain qualities of the site, other processes will not be drastically disturbed by the landscape design intervention. In the Garden of the Third Landscape, the design did not fully enrich the habitat condition of the garden but made a special setting that exposes the micro-climate of the concrete roof. In this way, this habitat not only accommodates the flora introduced by the design, but also invites the wild species from nature. The design knits together artificially introduced processes and the processes of natural and incidental occurrences.

Furthermore, by exposing characteristics of the site, enabling the site to be experienced as a specific place, the design opens people's new interpretations of the site to people through bodily engagement. In this circumstance, the visitors could develop a deeper understanding of the site, not only through pre-established knowledge but also through their own body and their past memories and experiences. This aspect might be what most distinguishes Valby Pavilion and Dalston Eastern Curve Garden; the design of Dalston Curve Garden, beyond satisfying social functions, further explores the site specificities, especially the aesthetics and natural qualities in the site's leftover situation. With enclosure of birch trees, fences, and bushes and a layer of deteriorated residential façade and shabby fences showing behind, the design allows visitors to dwell in this specific place and actively engage in the garden's transformation.

7.6.3   Landscape Architectural Design as Mediation

The close communication with the given site requires a special position of landscape architectural design: the design *mediates*. This mediation is manifested in the contradiction between original shabby fences and new planting on the border of Dalston Curve Garden and the interplay between a spectacular mixture of drought-resistant perennials and deteriorating concrete structure in the Garden of the Third Landscape. Through bringing together what is originally there and what is artificially provided, the design activates narratives of the site's transformation, celebrating the process of change driven by multiple natural, artificial agencies. These designed elements allow visitors to trace the system and network of the existing site, and to understand the site's manifold relationships. Words by Marc Treib elucidate that: "Time reflected in change and change reflected in time may just be the keys to understand the natural world and our place within it" (Treib, 1999, p. 41). Through the mediation of multiple conditions and processes of a site, landscape architectural design persuades visitors to observe their entangled relationship with multiple living beings or inorganic elements that constitute the urban living environment.

Designing with site-specific qualities and employing the design as mediation in space and in site transformation, landscape architectural design enables the transformation that derives from the multiple conditions of the existing site. In this manner, the design not only improves the physical conditions for the usage of human and non-humans but more importantly, it communicates, engages and triggers a sense of affection and motivates people to give tension and care in the on-going process of the site transformation. Playing with site-specificities while acknowledging the transformative agencies of multiple human and non-human participants, the design of urban open spaces now is capable to facilitates the exchange and communication between diverse inhabitants in the contemporary urban realm.

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Curriculum Vitae

Biography

1991   Born in Gansu, China

2009 – 2013   BSc Landscape architecture, Beijing Forestry University

2013 – 2015   MSc Landscape architecture, Delft University of Technology

2015 – 2016   Designer at Lodewijk Baljon, NL

2016 – present PhD candidate, Landscape architecture, Delft University of Technology

2021 – present Research fellow, AMS Institute, Wageningen University & Research

Sitong Luo was born in Gansu, China in 1991. She obtained her bachelor degree in landscape architecture at Beijing Forestry University in 2013. In 2015 she finished her master study at the landscape architecture of Delft University of Technology, with the graduation thesis "Edible gardens: agricultural gardens in the interstices of Duisburg". After her master study, she worked as an internship at the landscape office Lodewijk Baljon from 2015 to 2016. Start from September 2016, she embarked on her PhD research at the landscape architecture section of TU Delft. Sitong has conducted KIEM project "Open-up Interstice", where she worked with professionals from academia, field of practice, and Den Haag municipality, together exploring the opportunities of underused courtyards in the urban regeneration of Den Haag Zuidwest. In her research and practice, the focus is given to urban interstitial spaces – the small-scale leftover spaces inside the city that open to diverse informal social practices and natural succession. Her current research is focusing on the green infrastructure of the city Amsterdam, where she further explores the theme of interstitial urban green spaces with a focus on enhancing multiple ecosystem services offered by these unique spaces of the city.

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Luo, S., & Havik, K. (2020). Gardens of Interstitial Wildness. SPOOL, 7(1), 9-22. doi:10.7480/ spool.2020.1.5478

Luo, S., & de Wit, S. (2018). Unlocking Interstices: Multiple lenses enriching the participatory design of urban leftover spaces. In S. Delarue, & R. Dufour (Eds.), Proceedings of the ECLAS Conference Ghent 2018: Landscapes of Conflict (pp. 527-536). University College Ghent.

TOC

Disclosing Interstices

Open-ended Design Transformation of Urban Leftover Spaces

Sitong Luo

Leftover spaces are neglected and obsolete spaces within the city. As they are temporarily unoccupied by defined urban functions, leftover spaces provide unique "interstitial conditions" that open for wild species as well as different informal social activities, offering crucial complements to the formal and defined urban spaces. In this context, the design of leftover spaces poses a paradox between the practice of design that projects a set of definitions onto the site, and the indeterminacy of leftover spaces that opens for appropriation and interpretation. By recognizing this paradox within the design of leftover spaces, this thesis strives to explore open-ended design approaches that engage leftover spaces without losing their essential qualities of indeterminacy. Three case studies—Valby Smedestræde 2 in Copenhagen, *Le Jardin Du Tiers-Paysage* [the Garden of the Third Landscape] in Saint-Nazaire, and the Dalston Eastern Curve Garden in London are scrutinized with a uniform framework consisting of four lenses: the morphological, social, ecological and material lens. The plan, the section, the perspective and axonometric drawings are used as tools to examine the cases and further, to represent the results of reading through each lens. The study delivers four general *modi operandi*—disclosing, selecting, founding, and sustaining—for engaging with the interstitial condition of leftover spaces. This thesis further invites for an exploration on the role of "gardeners", nurtures and balances diverse social and ecological practices in the on-going transformation of the site.

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