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Designing Urban Natures.

Ambiguities in Urban Space Design on the Threshold of Climate Disaster

In an age when more than half the world's population lives in cities, the effects and growing awareness of the ecological crisis pose new challenges to urbanism. Air, soil and water pollution, the worsening health of city dwellers, and shrinking biodiversity, are entering the agenda of cities worldwide. *Greening* has become an attractive tool for cities in their search for ways to overcome such challenges and to improve the well-being of their inhabitants. Promoting vegetation in cities is bound up with hopes of fixing environmental problems as well as making people happier and healthier, and even improving our social coherence. This interest is connected to a broader striving to re-constitute the city and nature beyond modernist binaries. Increasingly, ‹nature› is not seen as something outside cities; rather, the city is seen as part of nature and vice versa. Contemporary strands of design theory reconceive the design of cities from a broadened ecological perspective that includes humanity, human artefacts and activities, expressed in concepts such as ecological urbanism[1], metropolitan nature[2], and urban nature.[3] Such positions are formulated in an era when cities are also increasingly branding themselves as green—a ubiquitous buzzword in the increasing competition to attract tourists, investors, and desirable taxpayers. For multiple reasons, nature is conceptualised as a positive aspect of cities and as an aspect that can be enhanced by people and for people. However, as previous research has pointed out, the various uses of the historically loaded term nature in an urban context are often less straightforward than its powerful role in urban discourses and policies suggests.[4]

Although associated with hope and optimism, nature in cities is also connected with apprehension of what humans cannot control. Cities all around the world are increasingly facing imminent disaster scenarios caused by climate change—storms, floods, heavy rainfall or drought depending on the geographical location. Within the last decade, planners and policymakers have begun to craft action on how to ameliorate the damage caused by such events, and how physical changes can make cities more resilient to climate change-driven disasters. Yet, as ecologist Nina-Marie Lister reminds us, we are only at the beginning of finding out what physical measures would make cities adaptable to climate disasters and balancing such adaptions with other needs in the city. Lister points out that we need a much more critical and nuanced debate about what a resilient world *looks like,* and how we can plan and design for resilience.[5]

This article is a contribution to such a debate. We examine how contemporary landscape architects rework specific urban spaces in response to climate change-driven disasters in a time when much hope is placed in nature in the city. In particular, we are interested in how climate-driven urban space design takes place in dense cities with long histories, where the starting point is not a tabula rasa but a multi-layered urban situation shaped by past uses, thoughts, and design actions.

We ask: What spatial expressions do contemporary designers choose for climate change-driven alterations to existing urban public spaces? What assumptions about nature in the city underpin such design projects? And how do they balance climate adaption with the social and cultural aspects of urban spaces? Our aim is not to judge certain looks as more appropriate than others, but to consider how to frame a nuanced and critical debate about how we choose to shape urban spaces in the context of climate change and desires to assemble *nature* and *city* in new ways.

Few places are more appropriate for such a study than Copenhagen, which is often considered to be at the global forefront of climate adaption-driven planning and design. In February 2017, Copenhagen was chosen to host the headquarters of G40, a «green growth coalition» of the world's 90 largest cities.[6] Furthermore, the city has committed to a comprehensive storm water management plan[7] and will work towards enhancing the quality and quantity of urban nature over the next decade.[8] Based on these policies, Copenhagen city council has decided to rework more than 300 central urban spaces in the next two decades—a vast number when one considers that Copenhagen has approximately one million inhabitants.[9]

One of the first subjects of these emerging urban space design projects is Enghaveparken public park, which offers an opportunity to study the physical articulation of the thinking of climate adaptation and enhanced urban nature. By scrutinizing three of the design proposals for a 2014 competition for Enghaveparken and unravelling the assumptions that underlie them, we ask: How do these projects strike a balance between the new demand for adaption to heavy rainfall events and other concerns in an existing urban space? How is *urban nature* spatially articulated in these projects? What underlying notions about the role of nature in cities do they express and where can we identify different approaches in this rapidly growing discourse? [10]

Theoretical background

A premise for our investigation is that every park relies on certain assumptions about what can be understood as *urban* and *natural* and their relationship. Further, urban planning and design actions not only express existing ideas but are also cultural utterances that have the capacity to ignite new thinking about the urban setting, nature, and the relationship between the two.

Our starting point is an article by landscape architecture historian Anne Whiston Spirn, published almost 20 years ago yet still relevant to the emerging spatial articulation of contemporary ideas about urban nature facing future climate change.[11] Spirn focuses on the practice of landscape architecture—a discipline that is playing a large and growing role in the design of urban spaces today, and from whence the design teams in the Enghaveparken competition came. Spirn discusses the notions of nature that impinge on landscape architecture theory and practice. She identifies multiple concepts of nature, which she links to the various lineages of this relatively new profession with its links back into landscape gardening, urbanism and more.[12] She lists some of these:

– the engineer's concept of nature: a force that must be controlled and overcome
– the artist's concept of nature: not an active agent but symbolic form and source of inspiration
– the gardener's concept of nature: people are stewards who manage the processes of nature through plants, animals and habitation for human ends.

– the ecologist's concept of nature: humans are interlopers in nature who disrupt its self-regulating processes.[13]

These lineages should not, of course, be understood as static and separate but as an array of analytic tools that can help us differentiate various rationales and values in discussions and practices concerning the relationship between urban spaces and nature. The professions that Spirn names are just as much metaphors as factual expressions of the way in which landscape architecture gathers knowledge from multiple fields. The point here is not that one perspective is better than the others but that we should be more aware of how we conceive of nature in urban spaces in the knowledge that we are capable of transcending mono-perspectives and substantiating our choices when we plan the future of urban spaces. By negotiating between different concerns regarding the role of nature in the city and balancing these with other agendas, designers can assemble multiple dimensions in one proposal. Spirn's lineages will form the basis for the following analysis of three proposals for Enghaveparken. The basic premises of the design were set in a larger planning context prior to the design competition, which we will begin by introducing.

Urban policies focus on controlling nature's powers

In 2011 and 2013 the flat, coastal landscape of Copenhagen experienced two so-called 100-year rainfall events that overloaded the city's 19th-century sewer system; wastewater filled the streets, stopped traffic and contaminated thousands of cellars and ground floors. Responding swiftly to these events, in 2012 the city council decided to use one all-encompassing approach for the entire city.[14] Copenhagen could have enlarged its existing sewers but instead chose to retain and mitigate rainwater at strategically chosen places in the terrain, only rarely using subterranean tanks and tunnels. The city identified many existing parks, lakes and urban spaces as rainwater foci in a comprehensive rainwater system to collect and retain storm water. The Copenhagen Cloud Burst Strategy has received numerous awards and Copenhagen is now officially advising New York and other cities around the world.[15]

Enghaveparken climate adaption—a complex design task

One such urban space that is strongly affected by the new storm water management agenda is Enghaveparken, a historical park in the densely populated district of Vesterbro in central Copenhagen (ill. 1). Created in 1928 by city architect Valdemar Fabricius Hansen, Enghaveparken was part of a modern urban area to improve living conditions for the working class, and today is a popular hub for the mixed population in this neighbourhood—students, immigrants from various backgrounds, young and middle-class families—with more than a million visitors a year and events in every season.[16]

The Enghaveparken lay-out is symmetrical, with a broad central axis leading to an open-air theatre. Typically for Danish landscape architecture of the early 1900s, it has monoculture plantings and hedges that divide it into smaller, more intimate enclosed gardens. Today, these spaces are used for various purposes: playground, sports field, rose garden and gardens that locals use for barbeques, sunbathing and small events. These intimate spaces are also used by homeless people, who value the relative privacy provided by the hedges, behind which they can sleep and gather, and which they use as outdoor toilets.

1 Enghaveparken, Copenhagen, Denmark. It is a popular hub for the mixed population in this neighbourhood—students, immigrants from various backgrounds, young and middle-class families—and has more than a million visitors a year and events taking place here at every season.

Between 2011 and 2017 Enghaveparken was part of a large participatory project, initiated because the area is identified as socially challenged.[17] One of the conclusions was that Enghaveparken was popular—«everybody felt it was their park» – yet also that it should be renovated to become more suited for various activities, more «safe» and «light».[18] The safety issue reveals dissonances between the homeless users of the park and families with children, who regarded them as a threat.

The *Cloud Burst* plan introduced in 2012 brought an entirely new concern into the participatory renewal of Enghaveparken; it was now to become one of the key points in Copenhagen's water mitigation system. [19] The agenda of storm water management brought a more than tripled budget and exerted a strong influence on the park's renewal. Also, a third agenda entered the planning process; the Danish Agency for Culture designated Enghaveparken as a potential object for listing because it was seen as a unique example of neoclassical garden design.[20]

The competition brief asked the design teams to synthesize potentially opposing aims:

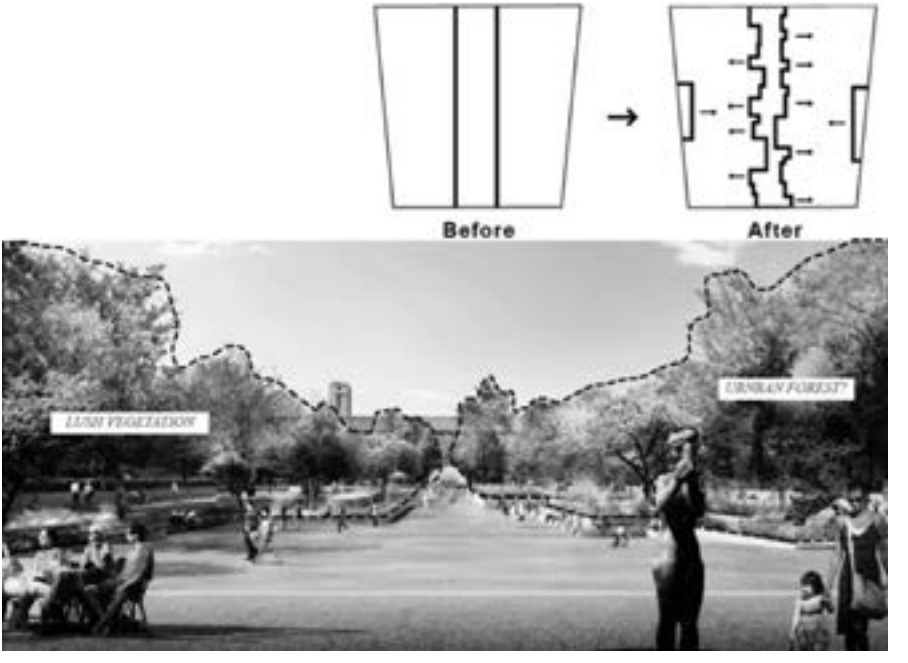
- maintaining the neo-classical spatial structure (cultural heritage)
- keeping the park's large water basin and some rare bats (nature preservation)
- enabling the park to retain a massive 24,000 m3 of potential storm water
- handling such volumes on the surface (not in pipes and subterranian tanks) and in a way that also contributed to the quality of everyday life in the park
- giving the park a more 'green and lush' expression.[21]

Five design firms were invited for an architectural competition, and in the following we examine three of these to understand different ways of treating urban nature in the context of climate change and an existing urban park. Using Anne Whiston Spirn's concepts of lineages about nature, we show how the competition proposals articulated different positions towards what nature can be in an urban context.

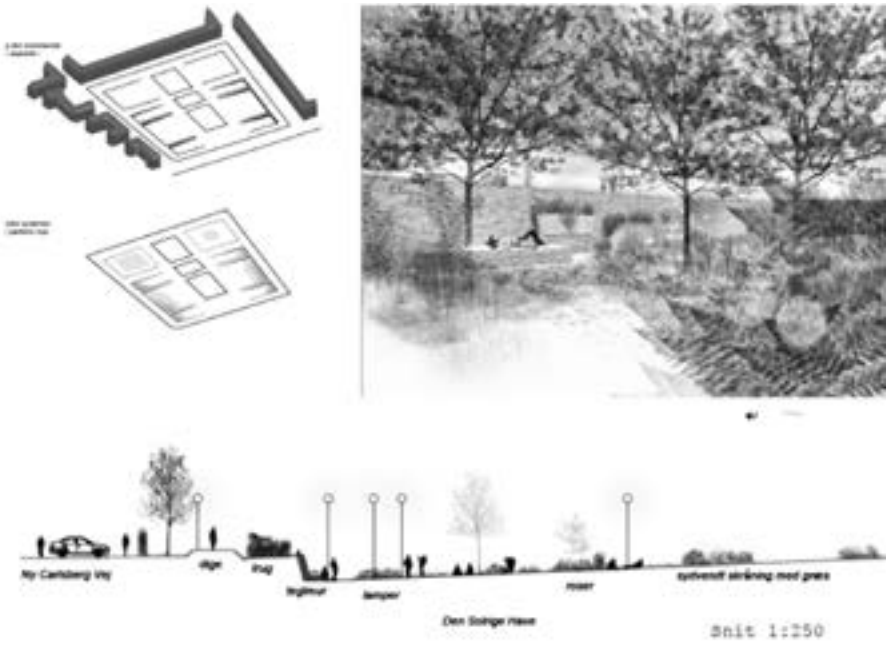
Designing urban natures—ambiguities

One of the competition entries, by GHB Landskab, was called *Enghaveparken. The green Gardens of the Vesterbroians* (ill. 2). This project proposes radical changes to the terrain of the park; it creates sunken areas in the smaller gardens to each side that can work as storm water retention basins. Instead of the existing hedges, GHB proposes that new secluded areas should be bounded by brick walls. The designers refer to Copenhagen's 17th-century fortification structure in the appearance of the new rainwater basins in the sunken areas. GHB's proposal preserves little of the existing park structure apart from its symmetry when seen in plan. Controlling storm water is the main narrative in this fortification-inspired urban park. The proposal appears to be based on what Spirn would call the engineer's perspective on nature: a threat that must be controlled.

The internationally renowned landscape architecture firm SLA (ill. 3) submitted a proposal that also meets the requirements of storing large amounts of rainwater on the terrain, extending the existing central lake because the centre of the park would lie low compared to its proposed high edges. This lower middle axis is proposed as a large public space for simultaneous multiple activities, surrounded by edges to sit, play and walk. The proposal adds to the existing monocultural plantings and strict alleys of trees by introducing densely planted masses of trees of various species. The proposal argues that this will create both more biodiversity and more aesthetic variation for visitors. Nature is here understood in its pastoral, aesthetic guise, in contrast to the geometrical order of the existing neoclassical park. SLA work with nature as symbolic form and aesthetic language, in what Spirn



2 SLA design proposal 2014: *Renewal of the Enghave Park*. In their design proposal SLA turns the main axis into the principal lush and social space, and by lowering the area enables it to retain large amounts of rainwater. However, this breaks with the park's grid structure.

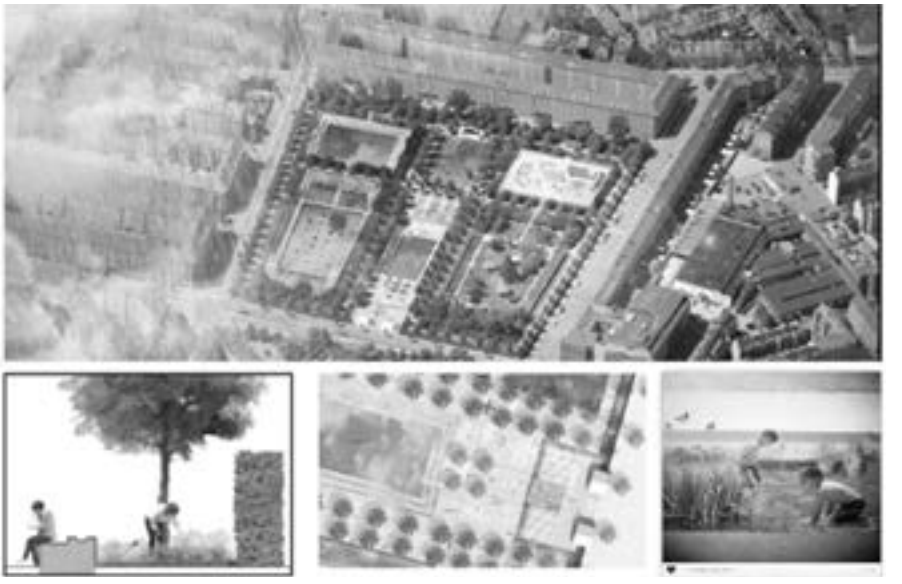


3 GHB design proposal 2014: *Enghaveparken. The green Gardens of the Vesterbroians.* It exaggerates the spatiality of the existing compartmentalisation by altering the terrain, and thus dramatically changes the park's uses and the spatial experience of it.

would call the artist's concept of nature. Many new tree species are introduced to the park, characterised by great variety in their appearance; multi-trunks and leaves ranging from light green to dark, from small to large trees together exaggerating an image of a lush and abundant, yet highly articulated nature. SLA also works with nature as a possible setting for large human gatherings by enlarging and emphasizing the public space at the park's central axis.

The winning proposal, *Common and Unique* by design firm Tredje Natur, is remarkable for the way it downplays the storm water crisis scenario (ill. 4). Contrary to the competition brief and the city's urban policy, the proposal chooses not to make space for handling large amounts of storm water visible on the park's terrain, suggesting a vast underground tank. The proposal adds smaller visible rainwater basins without letting the rainwater agenda dominate the everyday uses of the park; the sports field remains a sports field and only turns into something else in the event of excessive rain. The proposal also includes spaces for rainwater along the edges of the park in with a low wall. The wall is basically a technological installation to control the water, but also an artefact that provides seating, water for irrigation and play, and furthermore delimits an area between the wall and the perimeter hedge that is ‹undisturbed›: the ecologist's approach to nature. The likelihood of heavy rain is not the main narrative of this proposal. Rather, water is present as a playful component in an everyday perspective.

The proposal suggests retaining the neoclassical alley system of trees, even almost dogmatically insisting on authenticity in planting; new trees, they propose, should literally be clones of the existing ones. The hedges that secluded the smaller gardens



4 Tredje Natur, winning design, 2014: *Common and Unique*. It manages storm water underground, making it possible to maintain and enhance the tree structure and current multiplicity of social uses.

should become thinner and easier to see through, which will affect the homeless people's possibilities for withdrawal in the park. The designers insert a giant wooden structure to replace an existing espalier (ill. 5). This obviously human-made frame supports the seemingly uncontrolled growth of roses, and the giant espalier becomes a signature by the designers as auteurs in a project that is otherwise only making minimal changes. Later, the designers entitled their strategy «Nature on Speed».[22]

Following Spirn, the project combines several lineages of thinking about nature. Responding to the water management brief, the project applies the engineer's concept of nature as a force to be controlled, yet leaving parts of the park without design intervention according to the ecologist's notion that humans are interlop-

5 Tredje Natur replaces an existing espalier with a huge wooden structure, reinterpreting the grid structure but on an oversize scale, for giant rambling roses to grow wild: «nature on speed».

ers in nature who disrupt its self-regulating role. The giant espalier expresses the artist's notion that nature is not active agent but symbolic form and source of inspiration. And finally, the cloned trees may be understood as an expression of the gardener's concept of human stewardship, managing the processes of nature for human ends using plants, animals and habitation.

Conclusion

The current trends of urban greening and climate adaptation hold out promises of reconciling city and nature. Yet the inherited ideas of *city* and *nature* are multivalent, sometimes even contradictory. The design proposals for implementing a cloud burst plan in the existing urban spaces of Copenhagen—a city promoting itself as global frontrunner in greening cities—together illustrate the complexity of this issue. These multiple and divergent concepts of nature impinging on the Enghaveparken competition show the need to identify, differentiate and question these agendas, as they are entangled with different frames of thought that reach far beyond reducing damages caused by climate change.

The lineages of thinking about nature as defined by Spirn were operative in the design entries of the Enghaveparken design competition—sometimes in a highly recognizable form, as in GHB's strong narrative about controlling nature or in SLA's envisioning of nature as symbolic form. The different ways in which the proposals articulated nature shows that we should thus not confine discussion about urbanism on the threshold of climate disaster to technical rainwater management, to measures for ecological standards, or to the degree of *nature* in cities. Rather, we need a nuanced debate about the different ways in which *nature* and *city* are assembled in specific urban spaces when plans and policies are articulated in physical form. The proposals for Enghaveparken mediate between multiple concepts of nature, and negotiate the significance of such *natures* with that of other aims and agendas in the city. These choices have to be made in a time of growing awareness that the future is unpredictable, an awareness that changes the lineages of landscape architecture. The concept of ecology, for instance, which has historical links to a belief in sustaining more or less stable systems, is increasingly connected with concepts of adaptability, uncertainty and resilience.[23] However, it is difficult to think of Enghavenpark in terms of ecology since it is small and does not offer sufficient critical mass to amount to a substantial ecological component; its ecology remains a symbolic gesture.

The Enghaveparken competition proposals respond to a particular challenge connected with storm water management and a request for more lush urban nature in the city: to the fact that such agendas cannot be dealt with on a blank sheet of paper but must be addressed within the existing city. Tredje Natur's proposal demonstrates the challenges of redesigning existing urban spaces on a climate emergency agenda and a greening discourse dominated by discussions about novelty. Tredje Natur chose to retain the neoclassical park structure with its plants and even reinforce it, thus addressing the «more lush» design brief in a way that emphasizes the historical depth of the park. Simultaneously, Tredje Natur paid much attention to nurturing local people's ways of using the park, regarding everyday life also as a form of heritage worth preserving even though this aspect was not put forward by the Heritage Agency.

Rather than choosing one main lineage for thinking about nature in the city, Tredje Natur's proposal reflects a refined understanding of people's practices and

of different people's access to public spaces and their uses of the park. However, not all groups are given space in their design. By making the hedges thinner and lower and by removing all shrubs, the project complies with the wish expressed during the public participation process to make the park safer. This marginalises the homeless park users and thus contributes to unjust power relations in the park. Such social and political aspects should not be muted while the urban discourse is increasingly occupied with resilience and greening, but be part of wider discussions about the role of nature in cities.

Anmerkungen

1 *Ecological Urbanism,* ed. Mohsen Moshtafavi & Gareth Doherty, Zürich 2010.
2 Matthew Gandy, *Concrete and Clay: Reworking Nature in New York City,* Cambridge Mass/London 2002.
3 Anne Whiston Spirn, *Granite Garden. Urban Nature and Human Design,* New York 1984.
4 Anne Whiston Spirn, «The Authority of Landscape. Conflict and Confusion in Landscape Architecture», in: *Nature and Ideology. Natural Garden Design in the 20th Century,* ed. by Joachim Wolschke-Bulmahn, Washington DC 1997, pp. 249–261; Matthew Gandy, «Above the treetops: Nature, history and the limits to philosophical naturalism», in: *Geoforum* 39, 2008, pp. 561–569.
5 Nina-Marie Lister, «Resilience Beyond Rhetoric in Urban Landscape Planning and Design», in: *Nature and Cities: The Ecological Imperative in Urban Design and Planning,* ed. by Fritz Steiner et al., Cambridge Mass 2016, p. 305.
6 Copenhagen is not among the world's 90 largest cities, but joins the collaboration on the strength of its urban policies.
7 The City of Copenhagen, *Cloudburst Management Plan,* Copenhagen 2012.
8 The City of Copenhagen, *Bynatur i København 2015–2025,* Copenhagen 2016, p. 2.
9 «København klar med 300 nye skybrudsprojekter», Press release 03.11.2015 from the City of Copenhagen, http://www.kk.dk/nyheder/k%C3%B8benhavn-klar-med-300-skybrudsprojekter, accessed 01.02.2017.
10 The research for this article was conducted collectively with 45 international Master Programme students in the course *Theories and Methods in Landscape Architecture,* University of Copenhagen, 2016. We wish to thank all students for valuable input and interesting discussions.
11 Spirn 1997 (see note 4), pp. 249–261.
12 Landscape architecture became the most-used term in various educational programmes during the mid 20th century, often replacing what was previously garden art, landscape gardening or planning/architecture education.
13 Spirn 1997 (see note 4.), p. 254.
14 City of Copenhagen 2012 (see note 7).
15 Elisabeth Braw: «Tackling Climate Change: Copenhagen's sustainable city design», in: *The Guardian,* 8. October 2013.
16 Finn Edvard, *Vesterbro Lokalavisen,* December 2013.
17 This is a national and municipal project called Area Renewal.
18 The City of Copenhagen and the Ministry for City, Housing and Rural Areas: *Kvartersplan Områdefornyelsen Centrale Vesterbro Øst og Vest,* Copenhagen 2011, p. 36.
19 It was programmed to retain a large amount: 24,000 m3 of rainwater (equivalent to 200 m x 120 m covered with 1 m of water or 24,000 1x1x1 m cubes of water).
20 The Agency of Culture Denmark: *Rapport om Fredning af Selvstændige Landskabsarkitektoniske Værker,* Copenhagen 2013.
21 City of Copenhagen et al.: *Program for fornyelse af Engahveparken,* Copenhagen, 2014.
22 Quote from Anders Juul Jensen, landscape architect at Tredje Natur, 30th March 2016.
23 Lister 2016 (see note 5).