

DESIGNING HUMAN / NON-HUMAN PUBLIC SPACES  
FOR NEIGHBORHOOD RESILIENCE

# Design Exploration #1: Design charette for a resilient Holendrecht

From Prevention to Resilience  
2020 – 2022

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PARTNERS



# Preface

This case study report describes one of three case studies conducted as part of the ZonMw project 'From Prevention to Resilience'. Each design case is described in a separate report, each of which can be found in the Publications section at: <http://resilientpublicspaces.nl/resources>. In each of the design cases a concept version of our design perspective *Human/Non-human public spaces* was implemented. At the time of the design cases, we still referred to this design perspective as the '*Design Framework for Neighbourhood Resilience*'. Before reading one or more of the reports, it is useful to first get familiar with this initial concept version of our design perspective (available [here](#)). The three reports are an intermediate step towards a publication in a scientific journal, in which we analyze and discuss the three design cases together. For this reason, the reports should be considered detailed accounts of the design cases and findings, while not yet coming to general insights and conclusions.

# Table of Contents

<b>PREFACE</b> .....	<b>4</b>
<b>TABLE OF CONTENTS</b> .....	<b>5</b>
<b>1. INTRODUCTION</b> .....	<b>6</b>
<b>2. DESIGN FRAMEWORK FOR NEIGHBORHOOD RESILIENCE</b> .....	<b>8</b>
<b>3. DESIGN CHARETTE WITH ARCAM AND EIGENHAARD</b> .....	<b>9</b>
3.1 THE BRIEF.....	9
3.2 THE TEAMS.....	9
3.3 DESIGN PROCESS AND OUTCOMES.....	10
<b>4. METHODS</b> .....	<b>11</b>
4.1 CONVEYING THE FRAMEWORK.....	11
4.2 DATA COLLECTION.....	11
4.3 DATA ANALYSIS.....	12
<b>5. FINDINGS</b> .....	<b>13</b>
5.1 HOW WAS THE DESIGN FRAMEWORK USED?.....	13
5.2 HOW WAS THE FRAMEWORK VALUED?.....	14
5.3 HOW ARE THE TWO SIDES OF THE FRAMEWORK COMBINED?.....	15
5.4 CHALLENGES OF IMPLEMENTING THE FRAMEWORK AND SUGGESTIONS FOR IMPROVEMENT.....	16
5.5 USE AND UNDERSTANDING OF FIVE KEY CONCEPTS.....	17
5.5.1 <i>Agency</i> .....	17
5.5.2 <i>Connection</i> .....	18
5.5.3 <i>Diversity</i> .....	20
5.5.4 <i>Rhythm</i> .....	20
5.5.5 <i>Abilities</i> .....	21
5.6 OTHER FINDINGS.....	22
<b>6. DISCUSSION &amp; CONCLUSION</b> .....	<b>23</b>
6.1 DESIGNING FOR NEIGHBORHOOD RESILIENCE.....	23
6.2 COMBINING THE HUMAN AND OTHER-THAN-HUMAN SIDES OF THE FRAMEWORK.....	24
6.3 VALUATION OF THE FRAMEWORK AND ITS KEY CONCEPTS.....	25
6.4 IMPROVING THE FRAMEWORK: TOWARDS A VERSION 2.0.....	26

# 1. Introduction

Around the world, the Covid-19 crisis brought out renewed debates about the design of urban public spaces. Initially the focus lay on the design of interventions in public space that sought to prevent the further spreading of the virus. However, it didn't take long before cities also started to realize that well kept, green public spaces - especially at the neighborhood level - were also instrumental in coping with the crisis, as sites for - socially distanced - recreation, social encounter and (covid-related) care. So while public spaces may indeed be a hazard for contamination, they also contributed to the resilience of urban society in coping with the covid-crisis.

The research project From Prevention to Resilience aims to contribute to this debate and provide designers with a design perspective that can aid in designing public spaces such that they contribute to resilience at the neighborhood level. This perspective, initially called a framework, also aims to broaden the scope for public space design. We believe that public spaces can contribute to more resilient cities by strengthening not only human communities, but also non-human communities. And whereas urban designers, social policy makers, urban ecologists, and other professionals often work in different silo's of urban governance, we see opportunities for a more integrated approach in which designers start seeing both humans and non-humans as their 'clients' or 'users'.

Our position builds on the growing awareness that humans are interconnected and therefore, interdependent with the natural world around them, and proposes a nature-inclusive approach to building more resilient neighborhoods. Such an expanded scope is of importance in order to mitigate and respond to the impacts of climate change, biodiversity loss, and future pandemics, but also recognizes and takes care of the non-human life that is present in urban ecosystems.

To test whether this is a viable approach, in the winter of 2021 and spring of 2022 we ran three design cases in which designers worked with our design perspective while tackling challenges in particular neighborhoods of the Amsterdam metropolitan area. The design perspective was at that point referred to as a framework, and a concept version was used with the title '*Design Framework for Neighbourhood Resilience*' (available [here](#)). The design cases were conducted in close collaboration with architecture center of Amsterdam Arcam, social design agency The Beach and the experience design department of architectural firm UNStudio, called UNSx, as well as with social housing organizations Eigenhaard and Rochdale. The goal of these design cases was to explore and evaluate

the framework in practice, seek insights to improve it, but also to gain a more general understanding of designing for neighborhood resilience and how to integrate human and other-than-human perspectives in such a process. Guiding questions were:

How do designers use and value the framework? How do they integrate it in their practice? Which aspects are fruitful, and which aren't?

How do designers appropriate the framework? Are they making adaptations to the framework, and if so, for what reasons?

How do design outcomes instantiate the (adapted) framework? What design strategies or other forms of intermediate-level knowledge can we derive from their concept designs and the descriptions of it?

How do designers combine human and non-human perspectives? What are challenges and opportunities when integrating the two perspectives?

## 2. Design Framework for Neighborhood Resilience

The Design Framework For Neighborhood Resilience was printed as a leporello leaflet (see Figure 1), which contained two sides. One side introduced the framework and the rationale behind it. In short, a focus on both human and non-human communities is argued to be relevant in the light of building more resilient neighborhoods and cities. These two communities are graphically separated as two sides of the framework. Subsequently, five concepts are introduced as important conditions for resilience to emerge in both human and non-human communities: agency, connection, diversity, rhythm, and abilities. Finally, a distinction is made between spatial and civic design, which can contribute to these conditions in distinct ways.

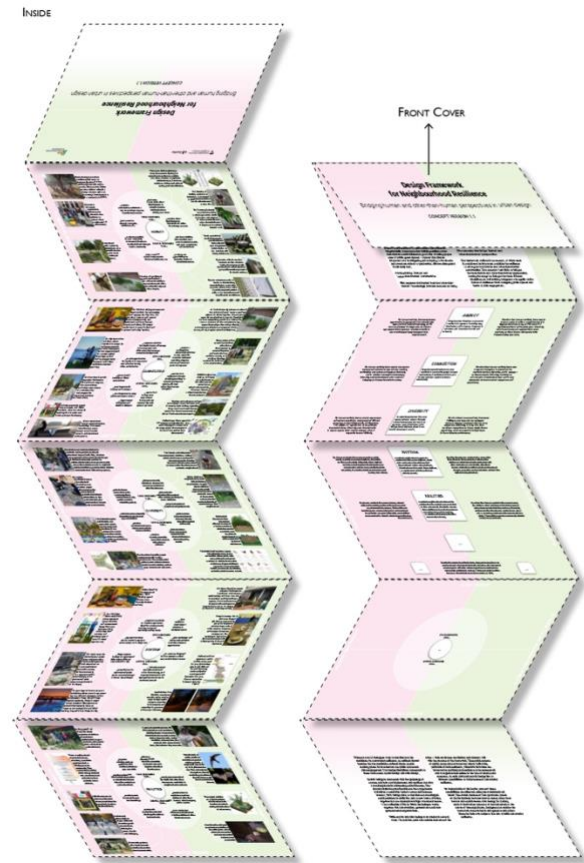


Figure 1: The Design Framework For Neighborhood Resilience was printed as a leporello leaflet

On the other side of the leporello leaflet, concrete design examples and strategies are used to give designers actionable insights in order to design for the five concepts, considering both human and non-human communities. Around each concept ideas are organized in four quadrants, based upon a human / non-human axis and a civic design / spatial design axis. For getting a better grasp of the *Design Framework for Neighbourhood Resilience* we encourage the reader to scan through the digital version that is available on our website (available [here](#)).



## 3. Design charette with Arcam and Eigenhaard

In December 2021, together with Arcam and Eigenhaard we organized a 'design charrette' – i.e., a one-week design sprint in which three multi-disciplinary design teams gathered in a studio in order to develop new plans and concepts in response to an open call while working with our framework. Arcam had the lead in organizing the charette and from their network of expertise invited two design coaches and several lecturers to support, inform and inspire the participating teams.

### 3.1 The Brief

The context and assignment were provided by social housing organization Eigenhaard. The assignment focused on the Amsterdam neighborhood of Holendrecht, in which new plans for the built environment were being made, to redevelop parts of the neighborhood. In line with our research goals and the goals of the social housing organization three questions were articulated as central to the charrette:

How can social and ecological resilience in the 'Heart of Holendrecht' be improved through spatial interventions?

What role can a reinterpretation of the zone between private and public space play in such an effort?

How can the existing built environment benefit optimally from the new construction goals in the 'Heart of Holendrecht'?

For a more detailed description of the brief, it is available [via this link](#).

### 3.2 The Teams

Three multi-disciplinary teams were selected to participate in the charette:

- **Team W** consisted of five members with backgrounds in architecture, social design and the arts: Edith Winkler, Floor van Ditzhuyzen, Lotte de Haan, Hedwich Hooghiemstra and Nadia Pepels.

- **Team Time** consisted of four members, each with backgrounds in architecture and urban design: Edo Bakovic, Mireia Martín, Ieva Mileika and Tamara Yazigi.
- **Team +** consisted of three members, with a background in architecture and photography: Sven Hoogerheide, Michael Daane Bolier and Ruben San A Jong.

More elaborate descriptions of the teams can be found at the Arcam website (in Dutch, available [here](#)).

### 3.3 Design Process and Outcomes

The design charrette took place from the 9th till the 15th of December; a mid-week with a weekend break in the middle. On the first day, the teams were given various presentations about the neighborhood, had a guided walk through the neighborhood, and familiarized themselves with the framework. From this point on, each started working with their own planning and goals in mind. Team W focussed on obtaining rich stories from the neighborhood, which could then serve as starting points for design. Their final result was a collection of these stories, together with a set of conceptual design proposals. Team + took a more top-down perspective, building a story and plan that would contribute to the already existing plans of Eigenhaard. Team Time would focus on conceptualizing their proposal for a locally embedded design team, which would engage with local residents while communicating with the more top-down urban designers and planners. On the final day of the charrette, each team presented their final outcomes. The presentations can be viewed [here](#).

## 4. Methods

### 4.1 Conveying the framework

For the charette an open call was created, in which the core idea behind the framework was introduced, emphasizing neighborhood resilience from both a human and other-than-human perspective. An information meeting was organized for applicants, in which the framework was briefly introduced, including its five key concepts. During the charette, the selected teams received a more elaborate presentation about the framework, were given the leporello leaflet, and were then asked to do a familiarization exercise. For the familiarization exercise, the teams received three A3 canvases, each focusing on one of the five concepts. Each canvas depicted the two sides of the framework, a short definition of the key concept in the middle, and triggering questions that asked participants to think of examples that they know, and how the team might learn from these for the Holendrecht brief that they received.

### 4.2 Data collection

During the charette, one or two researchers were present at all times, except for weekend days in which some of the design teams continued their efforts. The design process, evolving design proposal and use of the framework, was documented through rounds of observation, in which a researcher would take a seat at a team's table and observe for a minimum of 10 minutes while note-taking. For the note taking, a form was used in which the researchers were asked to write down observations concerning the current activity, how the framework was used, and how it was valued. The forms were digitized and written out more clearly. All teams were observed in this way two to four times a day, depending on the day's schedule. On the second day of the charette, a plenary discussion was held, in which the teams were asked to share their first impressions of and experiences with the framework. This discussion was audio-recorded. On the third day of the charette, each of the teams was interviewed in a semi-structured way. Here they were asked to describe their design process up to that point, how they used the framework, and how they valued the framework. Interviews were audio-recorded. On the final day, each of the teams presented their design proposals, which were audio- and video-recorded. Finally, the teams delivered a final report that presented their design proposal, which in some cases also contained explicit reflections on the framework.

### 4.3 Data Analysis

The plenary discussion, interviews, and presentations were all transcribed, using automated transcription software. In general, the quality of the transcripts was sufficient for analysis, while in some cases minor corrections were made. The transcripts and final reports were analyzed, while digitized note-taking forms were used occasionally for recalling certain details. We used a digital whiteboard (Miro) to visually organize our data. For each document, we lined out our key questions horizontally on the whiteboard. While going through the document, relevant quotations were identified with the key questions in mind, copy-pasted on digital post-its with a time stamp, and placed underneath one or more of the key questions. On the post-its, the researchers also added their interpretation of the quotations. On several occasions, the researchers gathered and shared their quotations and interpretations with one another, reaching consensus about the interpretation and making minor modifications. For each of the key questions, we summarized our findings based on the collected quotations. These summaries are written down in the results section below.

# 5. Findings

## 5.1 How was the design framework used?

Team W explained that the human and other-than-human perspectives of the framework were taken as a common thread in their process. The team carefully studied the framework before the charrette, which is also shown in the initial proposal they submitted in their application for the charrette, in which they present their vision while giving attention to each of the five key concepts separately. During the charrette, the framework was more in the background and not continuously used. The team did take inspiration from several of the design examples provided on the back-side of the leporello leaflet; for example, the idea of 'nature sanctuaries' found its way into their final design proposal.

Team Time used the framework to go beyond 'green and blue infrastructures', really focussing on what non-humans are living in the area. When asked how they used the framework, they all agreed they used it to confirm some of their already existing ideas. More specifically, they said they sought matches between their original mottos and the framework. They also took inspiration from the design examples. They made a conscious effort to come up with integral solutions with both humans and other-than-humans in mind. More generally, the framework helped the team think in a new way, and they used it to expand their original design proposal with an other-than-human perspective. In this team, the various key concepts of the framework appear not to play an important role; it is the distinction between human and other-than-human that received most of their attention.

Team + used the framework mainly to supplement their own general design proposal. Their proposal consisted of a general urban plan, and to flesh out the narrative for this general plan the concepts of the framework that resonated with the team were used. For the specific programming of the more general plan, the design examples of the framework were considered useful. In the final design, the human and other-than-human distinction finds its way in their proposal for the use of public green spaces. In the final presentation, the team presents a possible programming of the general urban plan, in which the key concepts are used to organize a variety of possible interventions, some of which are derived from the leporello leaflet. When asked about the spatial versus civic distinction, the team indicates that this dimension of the framework went unnoticed.

## 5.2 How was the framework valued?

For Team W, the focus on humans and non-humans was the main reason for them to apply to the open call for the charrette. When asked what aspects of the framework they appreciate, they mention how the concept of rhythm resonated with them. One team member, for example, mentions how it was the first quality she could easily see implemented spatially. In the end, however, the team says 'it is just the whole story' of the framework they appreciate. The framework forced them to think differently and it triggered discussions within the team about how specific ideas (e.g. mushroom breeding) could also benefit other-than-humans (e.g., improving the soil and mycelium networks).

Team Time indicates, similar to Team W, that "it is creating very interesting discussions and it forces us to think in another way." It is also considered a "handy tool" for considering other-than-humans, particularly in combination with the design examples on the backside of the leaflet. With regard to the other-than-human perspective that the framework proposes, they state in their final report: "We are happy that [the framework] brought us awareness of this perspective so that we can identify and introduce it in our future projects." The framework also discourages greenwashing, the team suggests, inviting them to go deeper than a superficial "layer of green". Their perception of the role of urban green space had changed because of the framework: "We learned that [adding gardens, parks or trees] is more about creating spaces where animals, insects and other organisms can find their place to live and grow."

Team + said that the framework offers clear and explicit themes that create a scope to work within. During the interview, their impression is that the concepts on the front side of the leaflet and the design examples on the backside work well together; the first, they suggest, helps to create a narrative, while the second helps to fill in / flesh out that narrative. This is also how they actually used the framework throughout the week (see the previous section). They also thought the framework connected well with the story the team was constructing before and during the charrette, and as such acted as a confirmation of their ideas.

### 5.3 How are the two sides of the framework combined?

Team Time consciously addressed both sides of the framework simultaneously. They explain how they found some design examples located on both sides of the framework, realizing that the two sides can work together. The two sides reappear in some of their discussions. For example, when discussing the current problematic road infrastructure in the neighbourhood, they proposed “giving [the roads] back to people and other-than-humans”, and later they state that the roads are “completely breaking the connections between the neighborhood also with the nature we are aiming for”. The key opportunity for combining the two sides is considered the envisioned green-blue infrastructure in the neighborhood: “That is definitely going to be a place for both human and other-than-human to meet. [...] I mean, I think we will try to do it everywhere, but this is the place where we can maybe put the best examples.” Also, as part of their design proposal, which consists of a locally embedded design team, Team Time suggests that experts concerning both human and other-than-human matters are included.

Team W indicated that integrating the two sides of the framework was central to their effort. They proposed to create green areas where nature has priority. Roof gardens can be “hubs for insects and birds [...] but also on the ground level we would like to explore interventions that really give nature priority”, and they wondered aloud in what areas nature can be allowed to run its own course. In their final design proposal, Team W proposed ways to lower the speed on bike lanes, making them more meandering around various green hubs, or “pocket parks” as they called them. They mentioned that, in this way, public space really becomes a “multi-species shared space”. The team recognizes how measures for humans may harm the concerns of other-than-humans: “For those gardens a lot of shrubs were cut down, supposedly for safety. But a local resident let us know that for that reason there are no more garden birds around; only crows and magpies.”

For new buildings Team W proposed “hybrid structures”: “More than a green haze or a nice roof garden. No greenwashing, but really inherent; where do you allow nature to go freely even within the building structure. Well, then you might have to create a connecting layer, in which those plants or those animals can do something. The theme here might be porosity.” Some reflections were shared on how residents may relate culturally to other-than-humans; for example, birds were suggested to play important roles in some Islamic streams. An interesting part of their ‘treasure digging’, was that they gave voice to several residents they encountered, including a young girl, a group of adolescents, an elderly woman, as well as a great tit and a hedgehog. Team W shared their

stories, and also tried to give voice to the other-than-humans. For example, for the hedgehog, they wrote:

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*"I want to sleep. Winter is coming. But I can't find a pile of leaves in which I can hide, or a nice messy garden. And I also have to move to the other side... You have to watch out; you never know when he comes – the big black one with the curly hair. You also have to watch out for the fast ones – the ones that cross that path. They move so fast – when you see them it's already too late."*

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Team + consciously started with a focus on human issues in the neighborhood, emphasizing the needs of existing local residents: "We're going to focus a bit more on the social, or at least as our starting point". At this early stage, the team did see the potential of green areas, where fauna and flora can "grow wildly". In their final design proposal, these green areas are indeed integrated, serving both humans and other-than-humans: "Those new courtyards we will arrange on a scale from culture to nature. Culture in the broadest sense, so human activity. And nature as a space where nature can find a place in all its forms; so that place for other-than-humans." Cultural spaces are where nature is cultivated, such as a vegetable garden, and natural spaces consist of "wild gardens", where people let "the green run its course". The combination of culture and nature in their urban plan is proposed as a new "spine for the neighborhood". They also give honeybees as an example, where humans benefit from honey production. Here it is less clear how other-than-humans benefit, in particular from an ecosystemic perspective.

## 5.4 Challenges of implementing the framework and suggestions for improvement

One of the challenges for implementing the framework, mentioned by Team + but also by one of the design coaches, was that the issues in the Holendrecht neighborhood were considered challenging enough, let alone bringing in topics of biodiversity and climate adaptation into the picture. Also, the framework is hard to implement due to a lack of ecological expertise, mentioned by both Team W and Team Time.

There were also some unclarities with regards to concepts and terminology of the framework. One of the designers of Team + also mentioned he found it difficult to define what, for example, agency in other-than-humans is: "So I have a sense of agency, but a squirrel not, I would say. [...] To make it very concrete, [take] an ecoduct [as an example], right? So you open up the possibility of moving. So



you can interpret it in that way. But actual agency... I find it difficult to define." This point raised some discussion and disagreement from other teams, with designers having different understandings or beliefs of agency in other-than-humans.

Team + and Team W noticed similarities between agency and abilities; during the familiarization exercise they noticed how their ideas for abilities also fitted agency. Team W adds that what is meant with abilities is unclear. When the researcher, in response to this feedback, referred to the concept in terms of skills and knowledge, the team sees a clearer distinction from agency. It appears 'abilities' was interpreted as having the ability or freedom to do something, rather than a competence or an acquired proficiency of residents. Finally, a participant wondered why the term 'civic design' was being used, as it comes with a human connotation; should we not think of a term that is inclusive towards other-than-humans?

Some suggestions were made for improving the framework and its leporello format. Team time suggested that the current visual display of the different sides as opposites of one another is not so productive; it didn't invite them to look for synergies. As already mentioned in the previous section, the realization that one design example was present on both sides of the framework made them realize that integrating the two sides was possible. Team W reflected upon the relation between the concepts and that there might be some kind of hierarchy – for example, that diversity is achieved by promoting some of the other qualities. When hearing from the researchers that this wasn't the intention, they suggested organizing the concepts differently, so that they don't convey a temporal order or a hierarchy. Turning the leporello into a card set would allow for such a reorganization, as well as more flexible use.

## 5.5 Use and understanding of five key concepts

### 5.5.1 Agency

The design proposal of Team Time aimed to give local residents more control in local urban developments. They proposed to allow new projects to emerge from the encounters between residents and a team of experts that is locally embedded on a permanent basis. "The permanent team enables residents to actively participate in the improvement of their direct surroundings and communicates their needs to the urban planning team." Agency of other-than-humans was not talked or written about, but it can be seen as central to their design proposal. While the team does

not explain how their design proposal contributes to resilience, their proposal could clearly enable adaptive and transformative responses to shocks and stressors.

A motto of Team W that resonates with agency, was taken from artist and musician Brian Eno: 'design beginnings, not endings'. "Designs are made with a loose grip, ready for future participation." The team wanted to support the already present residents and qualities of the neighborhood; to strengthen what is already there. Through a process they called 'treasure digging' (in Dutch 'schatgraven'), they wanted to give voice to, and create awareness about, the diversity of residents that live in the neighborhood and the stories that they carry with them. They also did this for other-than-humans, as described above. Also in their final proposal other-than-humans' agency was considered by creating areas where "nature has priority" and "can run its course".

Team + explained that the agency of human residents is central to their design proposal. They emphasized that existing residents should have agency in the face of the new urban plans for the neighborhood. "People are being helped with filling in forms to pay off debts; those kinds of issues, yes. But really that spatial urban planning, and the plans that are being made? To what extent are they aware of these plans and to what extent are they involved in those?" Agency was associated with terms such as autonomy and freedom. They also talk about giving residents the possibility to appropriate public space, "giving them this ownership to really make something out of it." Finally, they consider their design outcome a "general framework", which can be filled in in a bottom-up way: the specific programming of the north-south axis needs to be done together with the local residents. For other-than-humans, like Team W, they propose wilde gardens where nature can run its course.

### 5.5.2 Connection

In their design proposal, Team W suggests different places for encounter. With regard to humans, they see the value of encountering one another in everyday routines and activities, such as bringing away trash. These are the kinds of encounters, they suggest, that build community. They identified various places where these encounters can take place. One important place was a particular parking area: "In the evening, this area flourished. Because it turned out to be a meeting place for youngsters. For boys that pick up their girls. They had various tunes playing. A sort of mini street party." With their story and design, the team suggests that these kinds of places may go unnoticed and could serve as valuable starting points for designing public space. The team also proposes 'niksie moeties' (i.e., 'nothing-have-to's'), as places where people are not obliged to do anything;

many of the existing places, in contrast, have expectations of visitors, the team observed (such as paying for a drink). Connection is also talked about in terms of mobility, and that different residents move throughout the neighborhood in different ways (e.g. hedgehogs are contrasted with people in small vehicles or electric bikes). For other-than-humans, they consider their idea of pocket parks as forming a connecting landscape that “would make it easier for them to move through the neighborhood.” On a larger scale, the team wonders: “Why is Holendrecht not part of the ecological green structure of Amsterdam? Here there are opportunities as well!” Pocket parks and roof parks are proposed as such opportunities.

Team Time considers connection to be an important value in their work. Central to their problem framing is the disconnect between the neighborhood in relation to its surroundings, mainly due to the elevated roads that enclose the neighbourhood. So one of their main goals became to make the neighborhood more connected and accessible. They also consider this from an other-than-human perspective: “Holendrecht is a green neighbourhood but lacks connection to the surrounding nature areas. We see [it] as an opportunity for strengthening [and diversifying] the green character of Holendrecht by bringing water into the central area of Holendrecht. It creates the possibility for other-than-human ecosystems to redevelop and reconnect to nature areas nearby Holendrecht.” Another important part of their design proposal is to set up local experiments that facilitate spontaneous encounters as well as collaboration: “Every intervention is an opportunity for dialogue with the residents, a setup for a conversation, and a chance for them to participate and influence the process. The interventions can be seen as educational and collaboration opportunities.”

Central to the design proposal of Team + is avoiding a disconnect between new residents that will be brought in with the newly planned developments, and the old residents in the existing areas. They explored for example, how the existing areas could also become interesting to visit for new residents, rather than only focussing on how the new developed area could be made relevant for old residents. The team also suggests it is important to bring together various local stakeholders and to facilitate collaboration among them. A possible way to do this would be by creating space in one of the new buildings for several small and larger organizations to settle or be represented. At one point, one of the team members reflects on the concept of connection, and explains how he interprets it as a sense of belonging, and that this belonging of a larger whole is a nice counterpart to agency, which he interprets as individual freedom and autonomy. For other-than-humans, they introduce a hedge structure in their final design proposal which can form “a framework for different fauna of the area, to move through the area”.

### 5.5.3 Diversity

Team Time did not address diversity specifically but touched upon this concept on some occasions. They mainly spoke about increasing diversity in the functionality and aesthetic of buildings and landscape. For example, they described the current public green areas as ‘flat’, wanting to make it more lively by creating space water and using the excavated soil to add a new dimension to the landscape. They also proposed to diversify what are now uniform apartments, when making renovations with the permanent local team. The entire neighborhood is considered monofunctional, consisting mainly of housing “with few communal facilities located at the heart of the neighbourhood”.

Team W expressed a sensitivity to the variety of stakeholders that are present in the neighborhood, belonging to different age groups and cultures. Talking about the local residents they say “these are youngsters, elderly, these are children, the Surinamese, the Dutch; just for convenience here, because they are all Dutch.” Also the way of working of this team was focused on diversity, as reflected in the feedback that one of the design coaches gave to this team and the response of team W. The coach expressed how original this team was in having created a diversity of ways of looking at, and listening to, the neighborhood. One team member then responded: “You now touch upon this diversity; we really stood face to face with this diversity when going into this neighborhood.” A place where this diversity is reflected was in an existing local café, where people of various cultural backgrounds come for a drink. For other-than-humans, the team hoped to slowly attract new species with their design proposal, thereby increasing the local biodiversity.

Team + talks about diversity in terms of bringing together a variety of stakeholders, such as local residents, local foundations, social housing organizations and municipal departments. In their view, it is important to do so, as it will allow different stories to be told. Central to this team’s efforts is also a potentially negative aspect of diversity. Team + anticipates the new residents in the newly built areas will be of a different socio-economic status, bringing the risk to create a divide between old and new residents, and they ask: “How can we avoid that two different worlds come into existence?” Much of their design proposal is centered around this key issue.

### 5.5.4 Rhythm

For Team Time rhythm didn’t clearly surface in their design process and outcomes. Team + had one explicit reflection about rhythm, concerning how the new developments will likely produce a

different rhythm than the rhythm in the existing neighborhood. A clear link to resilience was not made.

For Team W, rhythm was one of the concepts that triggered them most when first getting familiar with the framework. During their design process they considered seasonal rhythms, and reflected on how public space could provide a pleasant climate for people throughout the seasons, for example, through the use of public green houses. More prominent in their design outcomes were day-night rhythms, although not clearly related to resilience; instead, rhythm appeared to be a valuable concept for them to understand the neighborhood in their 'treasure digging' process. An example is the parking place that comes to life during the evenings. They also reflect upon how current efforts to understand the neighborhood might fail, as the people working on this have only day shifts, while many of the neighborhoods rhythms, such as residents' work rhythms, play out in the evenings and during the night. The team also reflected on what might be considered diurnal (e.g. birds and elderly) and nocturnal residents (e.g. hedgehogs and rappers). It was not entirely clear whether and how rhythm was integrated in their design proposal in order to promote resilience; rather the concept seemed valuable for gaining a rich understanding of the neighborhood.

#### 5.5.5 Abilities

Team Time considered setting up low-tech experiments or temporary 'construction sites' in public space, which would attract curious people and eventually invite them to join the experiments and to use and share their skills. They expected people living in this area to have relevant construction skills, and that bringing them together with others can result in new connections and collaborations and different people complementing one another. The experiments can also be educational and informative for local residents, although it remains open what knowledge or skills would be conveyed.

Team W appears to have had less attention to abilities compared to the other qualities. Something they recognized, which may relate to abilities when broadly conceived, is that there are many "hidden entrepreneurs" in the neighborhood, which they show on Google maps. They proposed that these entrepreneurs can be facilitated, for example, by offering shared work spaces that they can use for parts of the week.

Team + suggests it is important to inform local residents about new building plans, and to make them able to respond. They refer to the Center for Urban Pedagogy in New York, which informs local residents about such matters and supports them in taking action, such as filling in forms to object to governmental decisions. They also are positive about the example of Casa Japie Makandra, an organization in Holendrecht which, for example, helps people with paying their debts: “So I think it’s those kind of facilities, which are embedded in the existing social network, that are crucial for building a more resilient neighborhood.” They also make reference to the particular skills that residents may have in the neighborhood. One team member provides an example: “For instance, if you look at the [vegetable gardens] here in the city: [...] there are a lot of Marroccans. They have these beautiful and well kept gardens. They really invest in it, they really take care of it in the right way.”

## 5.6 Other findings

During the plenary discussion people expressed different views of other-than-humans and what their capabilities are. One member of Team + asked: “Do other-than-humans have interests?” This question is not addressed in the current introductory text of the framework, as the research team assumed a general agreement among people that, yes, other-than-humans do have interests. A contrasting example is how Team W not only assumed these interests to exist, but also believed it was important to care for these interests. Team W, this member explains, joined the charette solely because of the equal attention to humans and other-than-humans. Later on in the discussion the contrast between these two views emerges again: Brining in other-than-humans in the scope of consideration is a matter of empathy, says the member of Team W; she views other-than-humans as living beings that you can relate to and care for. The member of Team + views ‘nature’ as necessary for human survival, and so considering other-than-humans is ultimately done for human interests (Team +).

## 6. Discussion & Conclusion

### 6.1 Designing for neighborhood resilience

In the design charette, our framework played various roles for the participating design teams. It inspired and informed their design processes, forced them to think in a new way, while it was also used to confirm or flesh out the ideas that designers already had without using the framework. The framework also gave rise to various questions and discussions, which were often related to the two sides of the framework as well as on the key concepts of the framework. While these discussions were relevant and triggering, they may have also taken some of the attention away from the topic of resilience. The terms 'resilience' or 'neighborhood resilience' were barely used when teams explained their design processes and outcomes. We suggest that the key concepts of the framework, as well as participants' unfamiliarity with taking an other-than-human or ecological perspective, may have distracted the participating teams from the overarching goal of resilience. Also other commonly used concepts in literature about resilience were barely used. For example, when a team had proposals about increased participation, this was not described as allowing residents to be more 'withstanding', 'adaptive', or 'transformative' in the face of 'shocks and stressors'. This made us realize our current version of the framework does perhaps not do a good enough job in introducing neighborhood resilience, as we understand it, properly.

Since the key concepts represent qualities that allow for neighborhood resilience to emerge, having the design teams focus on these concepts would in theory mean that the design proposals are likely to contribute to neighborhood resilience. Based on our findings, however, we can question this assumption. In several cases, designers explain their designs in terms of the key concepts, while a link to a more resilient neighborhood is not always clear. For example, understanding agency as individual autonomy and freedom is not necessarily beneficial on a neighborhood level. Another example is how participation was central in each of the teams' proposals, often linked by the teams to the concept of agency. Team Time proposes close collaboration between residents, a local permanent team of designers and a more top-down urban design team, to steer urban developments in line with residents' interests. Team + proposes a general plan which needs specification, in which local residents should play a key role. Team W, in their process of treasure digging, already took first steps in having local residents' concerns be voiced, which they consider an

important starting point for new developments in the neighborhood. However, it is not entirely clear how participation makes the local community better able to deal with future shocks and stressors.

Connected to the above, this charette took an interesting and unexpected turn, in which each of the teams focussed on empowering local residents in the face of already existing urban plans for the neighborhood. With their design proposals, each team stressed the importance of participation of local residents in the urban design process, which was related by the teams to the concept of agency. Framed from a resilience perspective, the new plans were treated as a shock or stressor that required some form of response. In this light, it is difficult to characterize the design proposals as 'withstanding', 'adaptive' or 'transformative' responses. Public space certainly would adapt or transform, when viewing the proposals of each of the three teams. Design processes are also transformed into more participatory practices, when compared to standard urban design practices. Simultaneously, such participation may also be seen by local residents as an opportunity to counter, or 'withstand', certain elements of urban plans. Because of the focus on responding to the new urban plans for the neighborhood, it is less clear how the design proposals enable local residents to be more resilient in the face of other shocks and stressors, such as those relating to a pandemic or the impacts of climate change.

## 6.2 Combining the human and other-than-human sides of the framework

What can we learn from the charette in terms of finding synergies or developing integral solutions, in which both human and other-than-human resilience are addressed? Team W demonstrates how contextual research can dig up both human and non-human stories, resulting in a rich diversity of starting points for urban design. Team Time indicated how blue-green infrastructures was for them a logical starting point for considering both sides of the framework simultaneously. Also the other teams mainly considered other-than-humans mainly in relation to existing or proposed green areas of public space. We consider it likely that the framework in future use will also steer design processes towards such green solutions when it is used by architects. However, such work would mainly represent the 'spatial design' part of our framework. In future work we hope also to explore the 'civic design' part further. Another important insight with regard to finding synergies, is Team Time's account of how they discovered that the two sides of the framework can work together in the first place. Apparently the framework in its current format does not clearly communicate this possibility and it does not invite integration of the two sides clearly. It was by seeing one design example represented on both sides that made them realize the possibility.



For Team +, the human side clearly had priority in the design. This team considered the human issues in the neighborhood to be challenging enough to address, and they also questioned some of the basic assumptions of the framework, such as whether other-than-humans have agency or interests. While the other two teams expressed the importance of integrating both sides of the framework, their proposals were also predominantly addressing the human side of the framework. A combination of factors may have played a role here. For Team + this includes a predominantly human-centric worldview, and the pragmatic choice to prioritize considering the time available within the charette. Furthermore, for all teams there was a clear lack of expertise about other-than-humans. Each of the teams gave indications of lacking such “ecological expertise”, or showed, through their proposals, that they missed a nuanced understanding of ecological matters. None of the teams included an ecological expert as a member, and relevant information was hard to find. Thus, while the framework stimulated the teams to combine the two sides of the framework to some degree, it did not offer the ecological expertise that the teams deemed necessary.

### 6.3 Valuation of the framework and its key concepts

For two of the teams, the framework was valued for offering a new perspective, and for inviting them to go beyond superficial solutions that had only a ‘layer’ or ‘haze’ of green. The new perspective is mainly to be attributed to the other-than-human side of the framework, which received much of the teams’ attention. For Team + the key concepts were considered useful themes that create a scope to work within and to create a narrative, while the design examples could be used to flesh out that narrative.

With regard to the key concepts of the framework, we gained several valuable insights. As a set, and in combination with the human and other-than-human sides of the framework, they may have drawn away attention from the underlying goal of the framework, namely to promote neighborhood resilience. This is illustrated by how the design proposals related to the concepts in various ways, but that it was not always clear how this, in turn, would be conducive to a more resilient neighborhood. Furthermore, the relations between the concepts were not always clear; for example, some concepts were considered prerequisites for others. Also the way in which the concepts were visually organized suggested a hierarchy of some sorts.

Considered separately, some concepts were taken up more than others by the teams, and some were considered confusing or redundant. Rhythm was mainly used by Team W, who clearly resonated with this concept, although it was not clear how that related to resilience. We interpret

their use of rhythm as a useful lens that allows for a rich understanding of the neighborhood, both from a human and other-than-human perspective. The concept of abilities was considered similar to agency by two teams during the familiarization exercise. At the end of the charette, each of the teams had design proposals that could be related to this quality, but, as with rhythm, the relation to resilience was generally not clear. Team W considered diversity in age and cultural background; in their work, diversity seemed to be about having a variety of voices heard and considered in the design process, but also here the relation to resilience was not made explicit. Similarly, Team + aimed to bring together a variety of stakeholders and have them exchange their points of view concerning the development of their neighborhood.

The concepts of agency and connection were used most clearly in relation to resilience, although there were several exceptions. Agency for humans, as mentioned earlier, was mostly considered as having a say in local urban developments, in which more top-down urban developments could be seen as shocks or stressors that required a response. For other-than-humans, agency was mostly addressed by demarcating areas in which nature was allowed to run its course, such as 'nature sanctuaries' or 'wild gardens'. Connection was designed for in various ways; for both human and non-human communities Holendrecht was considered disconnected from its surrounding areas, which became an area of focus for two of the teams. All teams considered the design of places where people could gather, either with or without shared activities and goals in mind.

## 6.4 Improving the framework: Towards a version 2.0

Based on our findings and discussion, we propose to take along the following considerations for a version 2.0 of the framework:

- Rhythm and abilities were least represented in the design proposals in relation to resilience. Their importance in the framework should be critically questioned.
- All of the key concepts had at least some interpretations that were not necessarily connected to neighborhood resilience. In our definitions of the concepts, connections to resilience need to be made clearer and more explicit.
- Different views with regard to other-than-humans were expressed, which could be called anthropocentric versus biocentric. Our framework should take some sort of a stance. Clearly we aim to integrate human and other-than-human perspectives, but beyond that,

how do we propose to value and include other-than-humans? Considering the focus on neighborhood *resilience*, which is a quality of a system, an ecosystemic perspective would be appropriate.

- One of the teams realized the two sides work together, only because they found one of the design examples on the leporello to be present on both sides of the framework. This shows, on the one hand, that the framework in its current format does not invite synergies / integration, and on the other hand, that showing integral examples may be a way to solve this.
- Often it was mentioned that expertise was lacking, in particular in relation to other-than-humans. Yet, at the same time, the framework provides 'strategies' and 'design examples'. This raises the question whether the framework, and the expertise it presumes to represent or assumes to be present in urban designers, is not at a sufficiently advanced stage yet. If we consider most designers to lack ecological expertise, perhaps instead of providing strategies / solutions, perhaps it's more appropriate to first ask the right questions that they should think of. These questions would perhaps be best if they somehow allow designers to concretize the framework in a particular context; what are the kinds of questions they should be asking about a particular neighborhood, which can serve as starting points for design?  
For example, with connection: How to connect the neighborhood to its surroundings? How to facilitate desired and appropriate forms of mobility within the neighborhood? What places for encounter does the neighborhood already have; what is missing and what could be strengthened? What stakeholders are relevant to connect, and how to do so? How to establish long-term collaborations? How to connect people with their natural surroundings? How to balance and combine pathways for humans and other-than-humans to be able to move? For each of these questions, the relation to resilience should be clear.
- Besides showing integral examples (suggestion mentioned earlier), attention needs to be given to the visual elements of the framework, so that they clearly communicate that the goal is to find synergies.
- Participants in the charette perceived a certain hierarchy in the key concepts. Some suggested a tool with more flexible use. A cardset might be interesting here, with cards that show integral examples, as well as cards that explain the key rationale and concepts of the framework.

