Capture nature

Exploring emotional attachment towards nature with a photographic walking tour for a nature-inclusive redesign of two former warehouses in Faro, Portugal

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Introduction

My personal interest in the field of architecture is pointing mainly toward heritage. I am always interested in how buildings have been built in the past and how to redesign them to make them suitable for new functions in the future. For this master thesis, the graduation studio Revitalising Heritage: Faro Convention Lab as part of the Heritage and Architecture Chair is chosen. The graduation topic is related to participation methods that can be used in the research and design process to engage local communities and create more inclusive architecture. This research is strongly related to the importance of nature in architecture, which is a currently valid topic in this field to create healthier cities.

This booklet can be divided into three parts. First, the cultural significance chapter focuses on revealing the values and attributes of the community by using participatory methods. This research results from a group work in which four different age groups are assessed. Four participatory methods are developed and completed on-site during a fieldwork trip to Faro in Portugal. My focus within this research is a photographic walking tour to identify the relationship between emotional attachment and the natural elements of the younger generation. The second part of this booklet is the implementation of the results of the research in a strategy for a value-based redesign. The chosen case study for this thesis is two former warehouses located in Estaçao, Faro, at the waterfront of the Ria Formosa Natural Park. The redesign aims to design nature-inclusive based on the needs of the younger generation in Faro. The last part of the booklet is the impact assessment, in which the interventions that took place in the redesign are critically assessed with each specific value and attribute.

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Chapter 1

Cultural significance

Cultural Significance Survey

By Willem Elskamp, Marloes Drijver, Sara Szulc & Qiyang Tao

Abstract

The role of nature in historic cities has been a growing debate in creating healthier environments as society pays more attention to mental and physical health. The relation between nature, city, and community is growing in understanding but still limited in practice.

Recent research evidences that high cultural significance of green places, where people like to spend time, positively impact their well-being. Moreover, the community well-being was proven to be connected to the presence of nature because of strong emotional attachment to greenery in historic cities.

This paper focuses on the neighborhood Estação in Faro, Algarve, Portugal, which historically was an agriculture area but nowadays contains only a few green areas and lacks connection with the Ria Formosa National Park (lagoon). Assumingly, these natural elements primarily convey, e.g., aesthetical and ecological values but may also bring a broader cultural significance to the community of Faro.

Participatory methods, in particular gaming, are used to reveal the values of the community. Gaming is a participatory method that enables co-creation in representing, visualising, and redesigning architecture and the urban landscape. Both sides can learn by engaging the local community. The method supports raising awareness about values and considering them in the redesign process. Four participatory methods are developed in these regards to be suitable for engaging different age groups. The methods consist of: 1) A walking tour, 2) cultural mapping, 3) a card game, and 4) Minecraft video game. 86 participants took part in the research, divided into four different age groups, from children to elderly.

The results of each method were coded using the values framework of Pereira Roders (2007) and the attributes typologies of Veldpaus (2015). By comparing the results of the different age groups, it can be concluded that for all age groups, the ecological, social, and economic values are the most important. When further breaking down these values, the most significant overlap between younger and older generations can be seen in the secondary (social) emotional-collective and (ecological) spiritual values. However, when looking at the attributes, a significant difference can be seen as younger generations feel more attached to tangible attributes since they might perceive the environment through more visible and physical aspects. On the other hand, the older generations are more attached to intangible attributes as relation attributes consisting of memory, meaning, and identity.

By understanding the local community's values, design guidelines can be made to restore nature within the neighbourhood of Estação. These guidelines will be further used to develop a strategy for implementing value-based redesign in order to improve the living environment of different age groups. The set of participatory gaming methods can be applied to other cities in consultation processes that aim to prioritise solutions to restore nature in historic cities.

Keywords: cultural significance, heritage values, public participation, healthy cities

1.1. General introduction to the topic

In this chapter, the grounds of this research will be explained, and the general topics of nature, well-being, and intergenerational and emotional attachment will be elaborated. The values-based approach will be presented. Additionally, an introduction to the case study will inform the reader about the context of this study.

1.1. General introduction to the topic

The role of nature in historic cities has been a growing debate about creating healthier and climate-proof environments. In economic and health crises, where stress and depression increase, society pays more attention to mental and physical health. After decades of disciplinary isolation in architecture and heritage, the relationship between nature and society is growing in understanding what contributes to society's well-being. [1] Earlier research evidenced the value of nature in places where people like to spend their time, which positively impacts their well-being. Walking in green spaces, considered of high natural and heritage values, significantly reduced feelings of anger, depression, tension, and confusion. [2]

Moreover, exploration of the topic showed that community well-being is connected to the presence of nature because of stronger emotional attachment to local areas attributed to the nature of the heritage environment. [3] This paper aims to research the values of nature in the city of Faro in Portugal, to understand the relationship between nature and people. Barrio Estação, a neighborhood in Faro, contains some green areas conveying aesthetic and ecological values to the local communities, but they are getting abandoned and making the city "sick." It is believed these areas can tell much broader cultural values, largely unknown. The driving force for this research is the admiration of nature and the desire to explore intangible relationships between nature, people, and heritage. Therefore this cultural significance survey will investigate and understand local communities' values on nature and heritage. Because the complexity of the theme requires investigation of various perspectives within the community, the participatory practice will be divided into different age groups and will be examined with several methods.

1.1.1. Theoretical framework

The presence of nature in the city enhances peaceful feelings and provides spaces for relaxation, exercise, and meeting with other people, according to Kim and Miller's (2019) research. [4] Additionally, it helps to reduce anxiety and supports thinking and reflecting. Nature makes people proud of the place where they live and make them care about their neighborhood—taking those environmental and social aspects into account when designing cities is an essential factor in enhancing the health and well-being of the users. Urban green spaces are a crucial catalyst for "the quality of the environment and human health and well-being" in cities. [5, p.23] Trees and green spaces participate in filtering air pollution, stabilizing ground surfaces, enhancing biodiversity, and lowering the temperature, which is especially meaningful in climate change. Walking in a green environment raises social interaction and "increases the ability to function better at work and home." [5, p.24] Furthermore, green spaces can support economic regeneration by creating more attractive spaces for new employers, and as a result, new employment opportunities are generated.

Heritage is considered to have a distinctive ability to contribute to physical and mental well-being on an individual and social level. For example, in a survey described in the Heritage Alliance Report [3], 94% of adults admitted that caring about heritage is very important, underlining the value of heritage for people

and their place of living. In addition, National Trust [2] research indicates that 74% of the respondents value the presence of nature in areas where they like to spend their time, which positively impacts their wellbeing. Other research [6] proved that walking in green spaces, considered of high natural and heritage value, significantly reduced feelings of anger, depression, tension, and confusion.

Another concept that is used for this research is place attachment. Place attachment is a bond between an individual or group and a place that can vary in terms of spatial level, degree of specificity, and social or physical features of the site. Because this concept is focused on places with a high level of agreement, it is mainly associated with positive emotions and experiences of people. [7] In addition, emotional attachment is derived from place attachment because it says something about the symbolic relationship that an individual can have based on cultural, social, and individual bonds with a place. This relationship describes the experiences and memories of an individual based on their perception of the area. [8] However, place attachment may also lead to adverse effects, such as prejudice against other regions or neglecting the potential risks around the neighborhood. [9] What does the place of place attachment mean? Previous studies have proposed several different models to clarify the definition of place. Based on research, we could assume that place is a geographic scale [10] as the collection of three factors to which people can directly feel attached to activities with people [11], physical settings, and meanings of conceptions. [12] According to the extended attribute typology of Veldpaus (2015), physical setting belongs to tangible attributes, social network belongs to intangible societal attributes network, and meaning belongs to intangible relation attributes.

Because this research is conducted among different stakeholders, the term intergenerational needs more elaboration. Intergenerational reflects something involving people of different generations. The term focuses on involvement in which there is an interaction between the different generations. [13] This means a relation or connection is present between these generation groups. Within this research, the different generation groups will be divided into categories based on the work of P. Laslett. [14] This system aims to understand the life rhythms of each generation. “Age groups” are not separated due to a specific age but by a period characterized by lifestyle and needs.

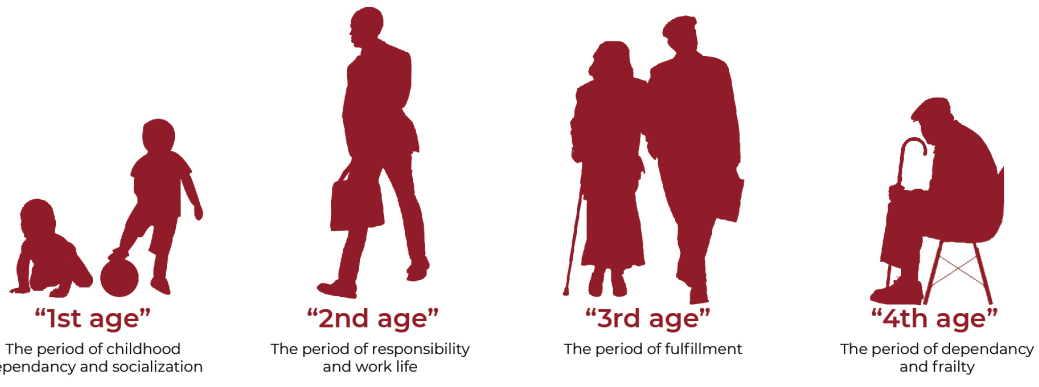


Figure 2: Intergenerational division of stakeholders. Diagram based on the word of the work of P. Laslett.

Furthermore, this research is organized around a values-based design approach developed by Pereira Roders and Tarrafa Silva (2012). [15] The foundation of this approach is the cultural significance of heritage. Cultural significance considers two elements: values and attributes. The value of heritage is referred to as importance. It is understood as "the importance or worth of something for someone." [16] Attributes refer to "a quality or characteristic that someone or something has." [17] Cultural significance is defined as: "Aesthetic, historical, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places, and objects. Places may have a range of values for different individuals or groups." [18] However, Pereira Roders expanded the list of values with additional ones: economic, political, age, and ecological, and assigned other secondary values to them. [19]

The question what? is answered by the attributes, while the question why? is linked to values.According to the attributes taxonomy made by Veldpaus, attributes are divided into tangible and intangible. [20] The tangible attributes are divided as follows:

- asset: building, building elements, urban elements, a natural element
- area: ensemble, context, setting, area
- landscape: landscape, layering

Intangible attributes are the following:

- product: concept, artistic tend, relations to context, character
- practice: use, function, knowledge, traditions, customs, relation to meaning, community, people
- process

Figure 3: Values framework by Pereira Roders. [21]

1.1.2. Relevance

There is still a gap in using participation methods during the design process in architecture and heritage research. Avrami [21] stated that it is generally agreed that bottom-up participation by the community will lead to better choices for values-based conservation, but the applications are still largely understudied. This values-based approach aims to reveal the interests and perspectives of different stakeholders in terms of the cultural significance of places by assessing the values held by different generations.This research will add to the development of new methods in participatory practices, and particular gaming will be used to explore stakeholders' values. Gaming is a participatory method that enables co-creation in redesigning the urban landscape. Both sides can learn by engaging the local community in research about values and the redesign process. We, as future architects, can learn to understand the needs of people better. Citizens can learn about the importance of the quality of their living environment and enable them to be part of the design process. [22]

The municipality of Faro supports this research to underline the importance of the Faro Convention for cultural heritage for society. This framework aims to put people and human values at the center of cultural heritage management and underline the potential of cultural heritage as a source for sustainable development and the well-being of the community. [23] The outcomes of this study will lead to inspiration for the community and raise attention for the Faro Convention.

1.2 Case Study

1.2.1 Introduction Faro - Estação

The research focuses on the neighborhood of Estação in Faro, Portugal. It is a neighborhood adjacent to the lagoon on the north side of the historical center of Faro. Various problems have gradually accumulated in this neighborhood with the urban development, and the coexistence of challenges and opportunities draws our attention to this site.

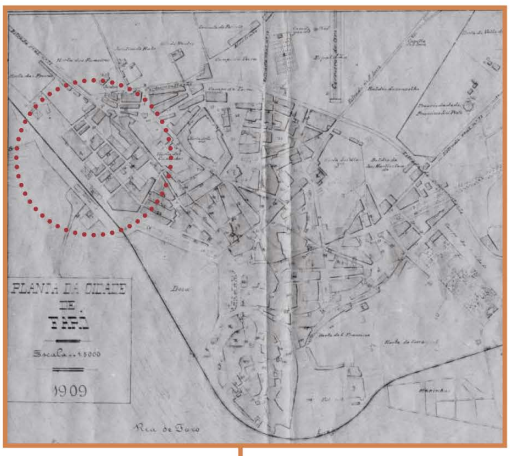
Originally Estação was built on the 'Horta da Carreira,' one of the three private gardens in the city. With the advent of the train station in 1889 and the emergence of industrialization, they transformed the green area into housing, and the urban development of the neighborhood increased rapidly. In 1920 they started building the milling factory on the northside of the neighborhood, which became a landmark building. Eventually, the flow of people and goods in the area caused more traffic, which became a problem. [24] Four north-south roads crossing the neighborhood connect the city's main entrance from the north to the historic city center. Based on our own observation and confirmed by the locals, this causes parking and logistic problems for the residents.

Figure 4: Historical timeline of Estação. [25]

Another problem, derived from our personal knowledge, because of the train station's development is the barrier created by the railway tracks between the Ria Formosa National Park and the city. The city was always focused on the inner side, and therefore the waterfront was only used for industrial purposes. As a potential result, there are only a few places where the railway track can be crossed, which resulted in a disconnection between the Ria Formosa and Estação.

Based on our observations confirmed by locals and the municipality, the majority of the people living in the neighborhood are elderly. Most of them live in one or two-story-high self-owned houses built around 1925. Therefore, they still own their properties when they eventually need to go to an elderly home. This, in combination with the financial crisis, caused a high number of vacant buildings in the area compared to the rest of the city. Also, the vast plot of the factory building has been left vacant for many years. Nowadays, a renovation plan to demolish the entire industrial block for high-rise dwelling buildings will happen. [25]

1.2.2 History timeline



1901 1909 1931 1940

2.1 Research Framework

2.1.1 Problem statement

People living in cities need a greener environment to stay healthy and fulfill their social needs. The necessity to spend time and relax in nature and green spaces became especially urgent in the context of pandemics that the world has been facing in recent years. Additionally, problems related to climate change, like rising temperature in the cities, are issues that future urbanists and architects need to address.

The neighborhood of Estação in Faro, in Portugal, was chosen as the graduation project case study due to its location and the challenges this place faces. The municipality of Faro developed a rehabilitation program in 2018 for the city, with intense concentration for the city's waterfront. [27] The neighborhood of Estação is part of an area called Frente Ribeirinha, which means riverfront. This area directly borders the Ria Formosa Natural Park. It, therefore, has a privileged territorial and landscape framework that needs recognition during the requalification process of the riverfront. Furthermore, the railway station and tracks are physical obstacles between the city and nature and may prevent the population and visitors from enjoying the city's proximity to the Ria Formosa.

Additionally, the neighborhood of Estação lacks green spaces where citizens can meet and spend time in the public realm. Furthermore, the neighborhood does not take advantage of its connection to the national park, which harms people's well-being and understanding of nature values. Furthermore, in the demolition program of the old factory, such rapid renovation on the block with conspicuous volume and historical value might negatively affect the legibility of the neighborhood and the place attachment of the community. Furthermore, high-rise dwelling buildings appear due to the city's rapid growth, which will cause little interaction and separated values between older and younger generations.

2.1.2 Research questions

The research aims to understand the values on nature of the different stakeholders in the context of emotional attachment and how this knowledge can serve in the following redesign phase. The research question is formulated below, and the following sub-questions are meant to support answering the main question.

How can the values on nature of different generations influence the emotional attachment to Estação, Faro and support the redesign of a vacant building?

Sub-questions:

1. How can an intergenerational relation be created by using the values on nature of the local community of Estação?
2. How could the tangible and intangible attributes affect different generations' place attachment to Estação?
3. How does the younger generation feel emotionally attached to nature in Estação?
4. How can children's values on nature be applied to redesigning vacant buildings?

2.1.3 Aims and expected results

With the above-stated arguments, this research expects to identify the value of nature in the current urban renovation. The research aims to determine the values and attributes relevant to the natural asset in Estação, Faro, and how this influences

different generations' emotional attachment to the neighborhood. Furthermore, the research sets out to gather information about all age groups with the most suitable participatory gaming methods. It empowers participatory gaming for decision-making in design processes (see figure 5). As for expected results, the hotspot map will support the choice of redesigning buildings. The detailed attribute–value diagrams will answer the research question, supporting the master plan's design decision.

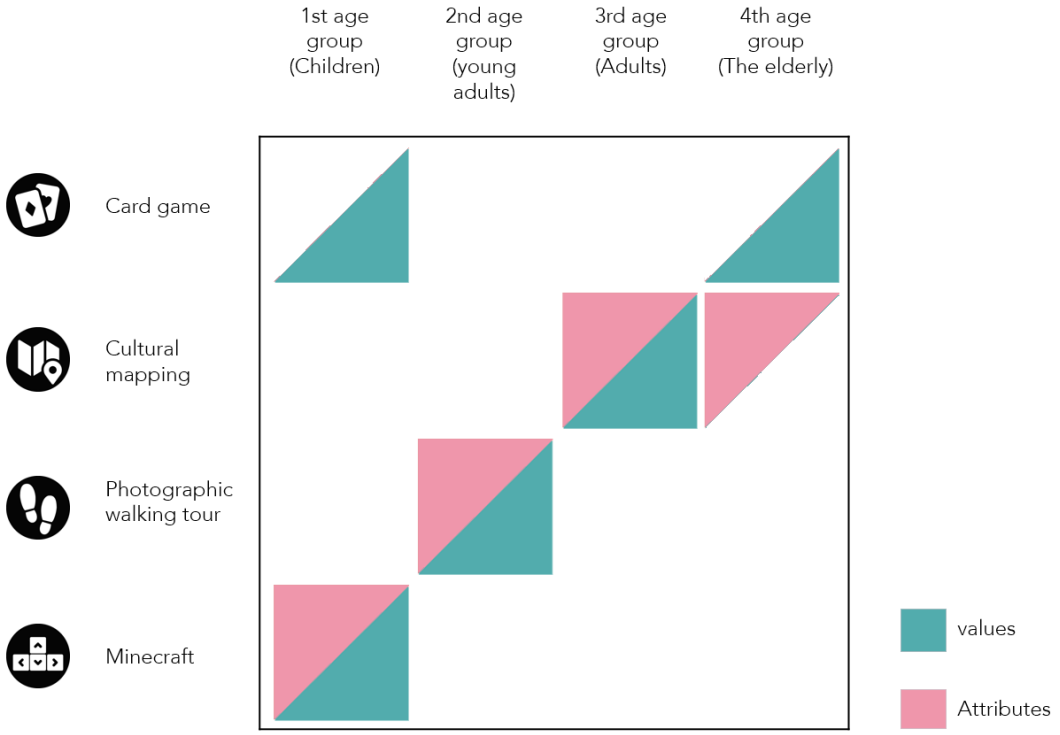


Figure 5: Diagram with different generations and methods.

2.1.4 Ethics

Research involving human subjects requires ethical and responsible discernment. As researchers, we are obliged to obey rules according to the field research executed with the participation of people. Following documents were established to fulfill ethical requirements: Ethics Review checklist, Data Management Plan, and Informed Consent form. These documents consider the possible risks associated with the study, the exact plan, and how the data obtained in the survey will be used. Furthermore, the preparation of the HREC application (Human Research Ethics Committee) was made as recommended by the Delft University of Technology.

2.2 Methodology

Due to the complexity of methods and stakeholders, symbols are assigned to each method. It will help the reader track the method used per type of stakeholder.

2.2.1 Card Game

The card game was made (based upon the existing game of “Reigns”) [28] to understand the values of both children and the elderly. The game is set around a set of proposal cards that need to be accepted or declined. In total, 72 cards have been made that each is containing a proposal for the city of Faro. Each card is linked to a value type (in total, 9 cards per value type) and a secondary value. Participants will play the game in groups of 4 to 6 people. One person will play as the “mayor” and decide which proposals to accept, while the other players will be their “advisors” and choose which cards to propose. Participants will be asked to explain their choice of a particular card and then negotiate with the group over which cards they find essential. The game also contains a board with sliders linked to the values on the back of each proposal card. The board has been added to increase the game aspect and allow for more engagement in the game.

Figure 6: The card game method tool.

2.2.2 Minecraft

Gaming is used in architecture to enable co-creation in redesigning the urban landscape. Minecraft as a tool for visualization and collaboration can provide possibilities for opening a debate between children and architects. [29] The workshops based on the use of Minecraft engage children to provide their perspective on their neighborhood and provide input for architects to develop more inclusive designs. The workshop aims to determine which values and attributes are essential for children. Firstly, each child will be given a set of cards with pictures of different places in the neighborhood, focusing on nature, vacant buildings, and public spaces. The selection of the pictures was based on the diversity of attributes in the neighborhood. Children have to answer the question “How important is the element in the photo?” and “Why?”. The purpose of the cards is to learn about the values and attributes essential to children. Secondly, children will be redesigning the vacant building and its area using the game Minecraft. Children will be asked to make the building and the area greener, and to give a new function to the building.

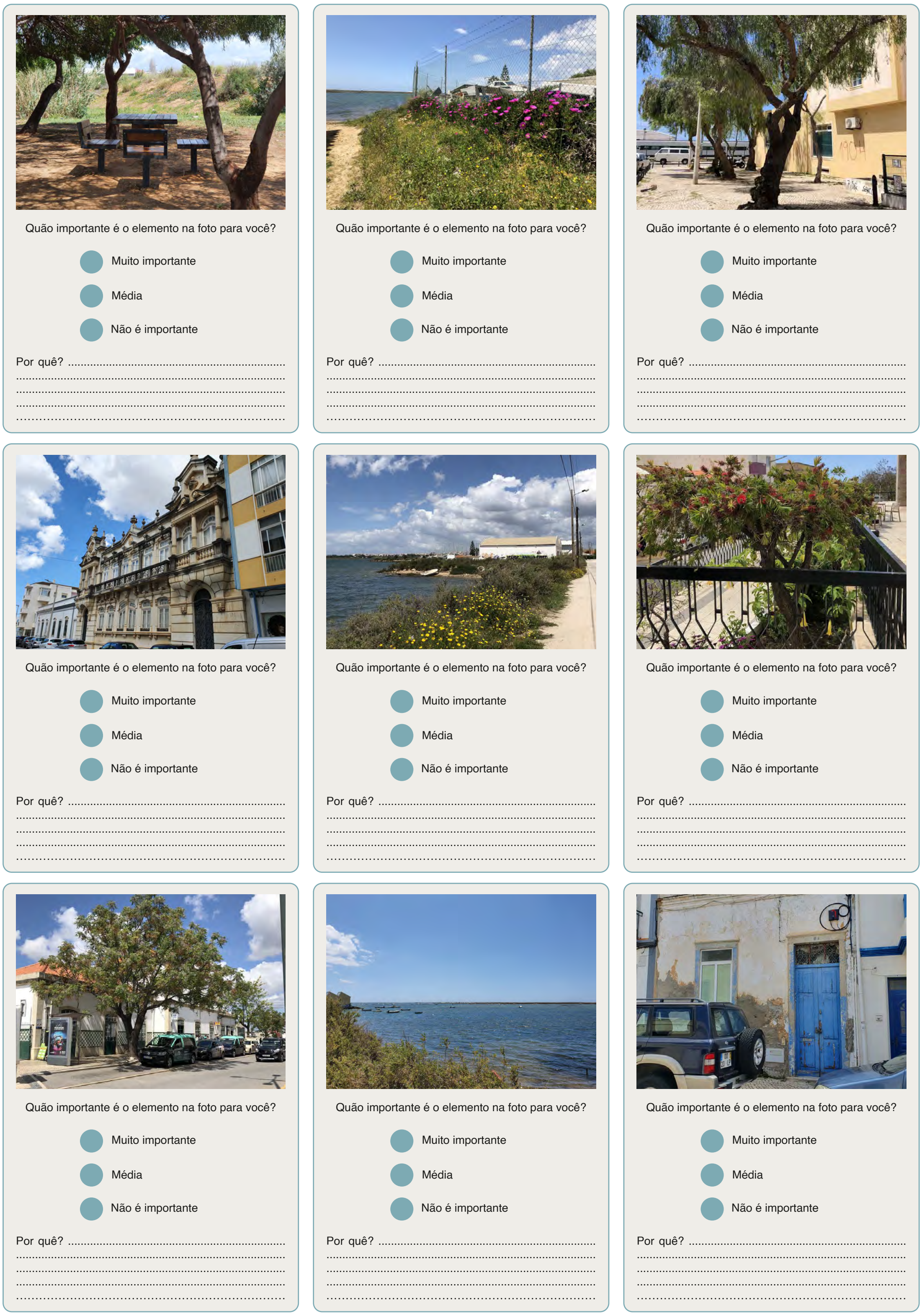


Figure 7: The questionnaire cards used with Minecraft.

2.2.3 Cultural mapping

Cultural mapping is a method suitable for adult and elderly participants familiar with the Estação neighborhood. During the cultural mapping street interview, the participants will be asked first to write down what they like or dislike in the area from three perspectives: environment, activity, and meaning. They will write the answers on sticky notes, simultaneously marking them on the map. Then, participants will answer “yes” or “no” to five questions measuring their level of place attachment, like “whether I want to stay in Estação.” Based on the number of “yes” and “no,” they need to choose only five positive or negative attributes that support the choice from the list they wrote at the beginning and explain the reason. In this way, the attributes related more to place attachment can be coded.

Figure 8: The cultural mapping method tool.

2.2.4 Photographic walking tour

The focus of the photographic walking tour will be to identify the relationship between emotional attachment and natural attributes in the area. People will be asked to take photos using the app 'Wikiloc' of natural elements in their neighborhood to which they feel emotionally connected based on their memories. Emotions and memories can be both positive and negative. During the introduction of the tour, the five different senses wherewith nature can be observed will be explained to make the participants aware of the different perspectives. They will also be asked to add a short description to each photo to explain why the specific photo was taken. In this way, both attributes and values of emotional attachment towards nature will be derived during the tour. The tour will lead through Estação for approximately 45 minutes (see figure 9).

Figure 9: The route of walking tour method.

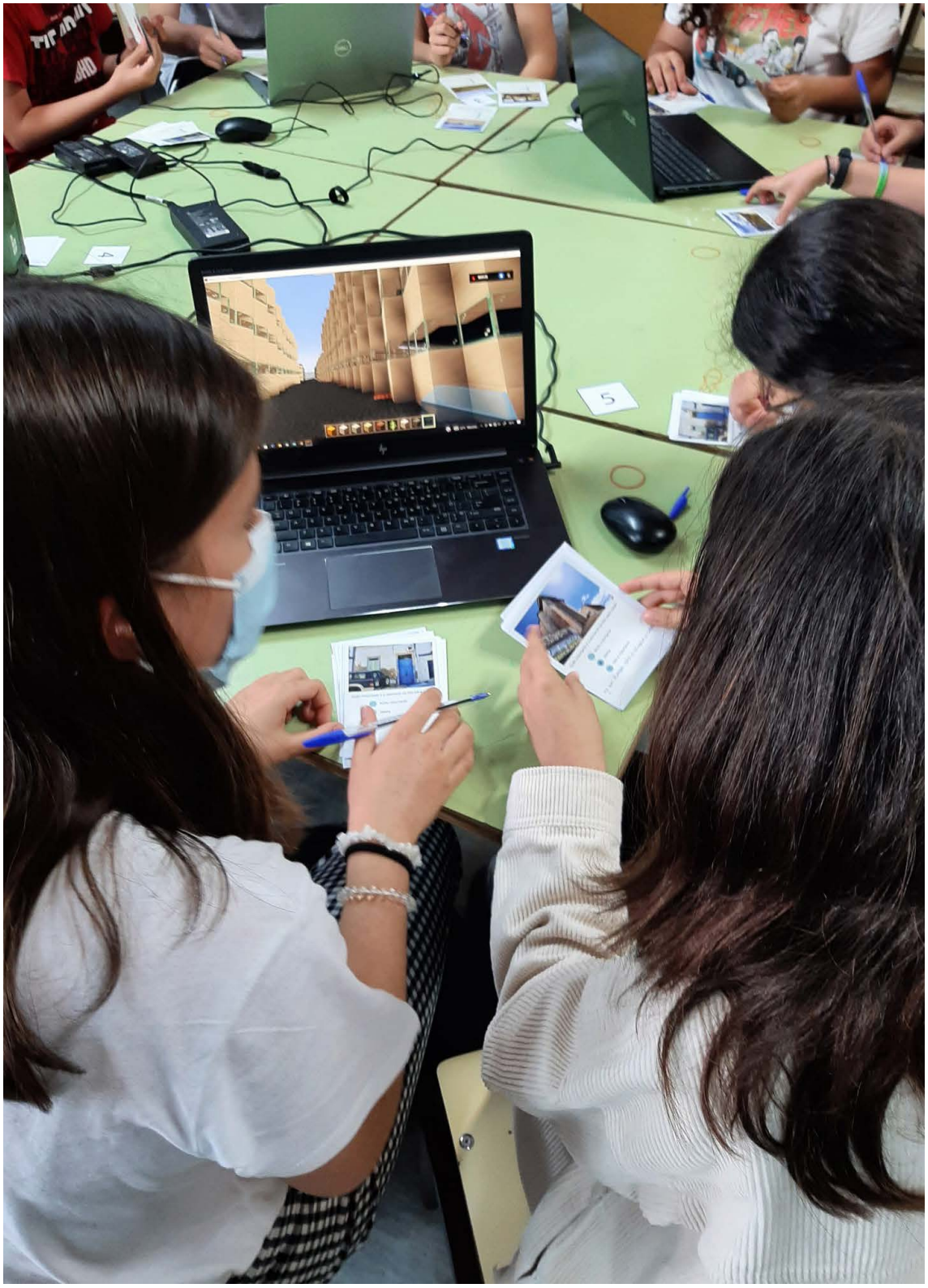
3.1 Applications

3.1.1 Engagement with 1st age group

Children were considered relevant stakeholders because their perspective is hardly ever considered in urban planning. The group consisting of 22 children was divided into two groups. The total time of the workshop could not exceed 90 minutes due to the school's decision. Therefore, the workshop was divided into two slots every 45 minutes. In this way, it was possible to play the card game and Minecraft simultaneously. Then, each group exchanged so that everybody could experience working with a different method. The time constraints influenced the final results because some of the questionnaires were incomplete, and children could not finish their designs. Nevertheless, analysis of the collected data made it possible to identify values and attributes.

The children played the card game as intended in groups of 5 to 6. After a quick explanation of the game, they played for about 30 minutes. Afterward, the results were discussed to understand better why they had chosen specific cards.

Figure 10: Workshop with children.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3.1.2 Engagement with 2nd age group

The group of young adults is vital for this research because of the growing aging population in Estação. By accessing them, the research can reveal their desires and needs in terms of values on nature and eventually lead to a more sustainable neighborhood for their future. First, the photographic walking tour was promoted by flyers and posters on the streets in Estação, trying to reach the young adults living in the neighborhood. However, it was hard to find participants because of the high population of elderly and the quiet streets. Then, the focus of promoting the event locally in the neighborhood switched to more general throughout the city of Faro. Eventually, with the help of volunteers, the Municipality of Faro, and social media, six local participants applied for the walking tour. Still, this number was too small, so it was also decided to run the walking tour with six non-locals. The result of this engagement arose an interesting opportunity to compare the results of the locals and non-locals.

Figure 11: Poster and the walking tour with young adults.

TU Delft UAlg Faro

HERANÇA & NATUREZA PASSEIO A PÉ

Em colaboração com a Universidade do Algarve e a Câmara Municipal de Faro estamos a organizar workshops de investigação sobre a natureza e o patrimônio em Faro. Procuramos pessoas que morem ou conheçam o bairro Estação para nos ajudar.

PASSEIO A PÉ FOTOGRÁFICO

Revele a relação entre seu apego emocional à natureza tirando fotos durante um passeio a pé pelo Bairro Estação.

15 minutes - Encontro e explicação
60 minutes - Passeio a pé
15 minutes - Encerramento incluindo um café grátis!

ROTUNDA
HOSPITAL LUSIADAS
6 de Maio / 10 de Maio
12 de Maio
17:30 - 19:00

Venha se juntar a nós em uma sessão divertida de aprendizado e participação!

Registre-se agora digitalizando o código QR!

3.1.3 Engagement with 3rd age group

As the third age group stakeholders, the adults are relatively easier to approach because they are able and willing to communicate in English. Since Estação is a neighborhood with a primarily elderly population, it is hard to find adults here during the day. As the solution, the cultural mapping street interviews focused on engaging people relaxing in cafes during the evening. It was always easier to approach people in a less formal way, through which people were more open to sharing their opinions and memories. Doing daily talk with people working in shops around the neighborhood was another interviewing strategy, which allowed us to conduct interviews with 12 adult participants.

Figure 12: Street and shop interview with adults.

3.1.4 Engagement with 4th age group

The elderly are the most common age group in Estação. We found it challenging to engage the elderly during the fieldwork and organize a workshop with them. Due to the language barrier, communication with them is possible only when translators support the interview. Therefore, the cultural mapping method was changed to a more simplified and efficient street interview method during the fieldwork. Similarly, the card game was also changed to be more suitable for short one-on-one encounters. Instead of asking the participants to pick cards and negotiate in groups, they were given half of the cards and asked to divide them into yes and no piles. Eventually, after three walking tours through the neighborhood and one workshop in an elderly home, the research concludes with 40 elderly participants in total.

Figure 13: Workshop with the elderly.

3.2 Results

3.2.1 Data processing

The data processing was conducted to combine the data from all four methods. Firstly, the value types were gathered by looking into why participants made certain decisions during the methods. For the walking tour and Minecraft, this was the text that participants wrote down with the pictures they made or that were on the cards. These texts were coded according to the values framework of Pereira Roders [19] to gain both primary and secondary value types. For the card game, the answers of all participants were counted and related to the value types and secondary values linked to each card. All three methods focussed only on the positive answers participants gave.

Then, the attributes coding mainly focuses on participants' choices made during the methods of the walking tour, cultural mapping, and Minecraft. Four sheets for different generations were made for coding and counting. The coding process strictly followed Veldpaus's attributes division of two categories (level 1), six categories (level 2), and eighteen categories (level 3). [20] From general to specific. The research developed the diagrams for high-frequency answers to the five most important attributes (level 4).

Eventually, the location information of the walking tour, cultural mapping, and Minecraft questionnaire is translated into one type of drawing. Through overlapping these drawings, a hotspot map for the location of place attachment with natural and non-natural elements was created (see figure 18).

3.2.2 Values

In the first part of the results (figure 14, bottom of the sheet), each value type is shown with the percentage of positive responses/decisions from each age group. From there, the average response to each value type is calculated. The highest-rated values on average are ecological, social, and economic. The most significant values per age group::

- 1st group: ecological and social;
- 2nd group: ecological and aesthetical;
- 3rd group: social and economic;
- 4th group: social, and almost at the same level ecological, aesthetical and economic.

However, there are still some significant differences between the younger and older age groups within these values. Therefore, these responses have been further broken down into secondary value types. In the pie charts, the division of the value type can be seen per age group. Although some value types have similar responses from all age groups, they differ in dividing secondary value types. The graph of the secondary value types shows the average of the four age groups.

Conflicts are visible between the 1st, 2nd, and 3rd groups. For example, when the ecological value is the most important for children and young people, it is the least significant for adults. This conflict might be an example of generational conflict when the children's perspective is enormously different from their parent's. In the context of the contemporary narrative of climate change and the disappointment of the young generation with past generations' decisions, the research results confirm this contrasting approach. Furthermore, the 2nd group considers social and economic values the least important, while for the 3rd group, those values are the most important. The difference in the context of social value between the 1st and 2nd groups seems meaningless since it is only 4%.

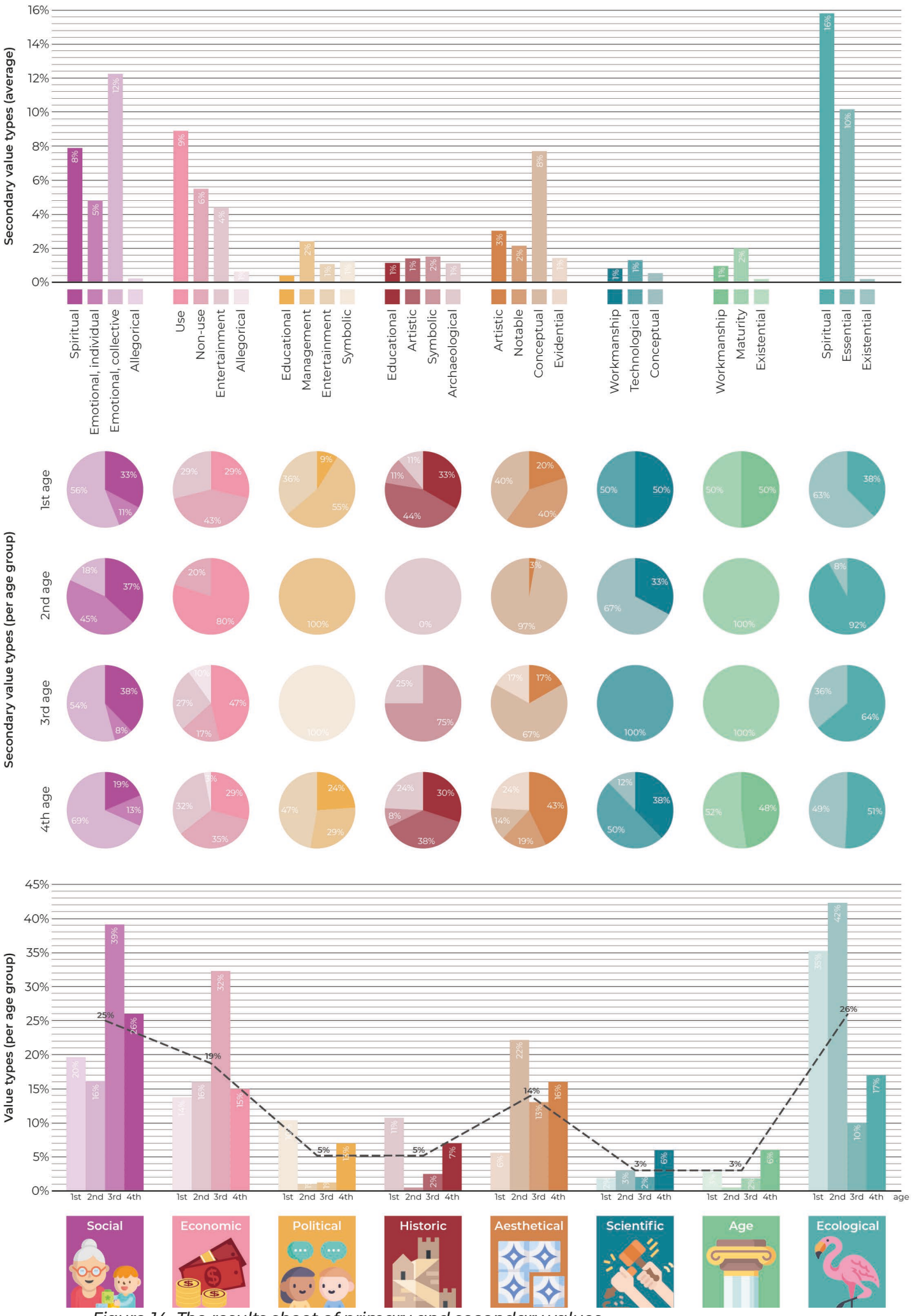


Figure 14: The results sheet of primary and secondary values.

3.2.3 Attributes

In the chapter on attributes, the results are presented from general to specific natural assets (see figure 15) and discussed from the intergenerational perspective to understand the similarity and differences between adults and the elderly. In the first level of attribute analysis, tangible attributes gain more attention than intangible ones in general. Most importantly, we could see that the older participants are, the more they feel attached to intangible attributes.

In the second level, with six categories of the attribute types, people focussed more on (I) societal attributes, (I) relation, and (T) asset attributes, while (T) landscape, (T) area, and (I) process gained less attention. This might result from participants' pragmatic attitude towards their social life. From the intergenerational perspective, the 1st and 2nd age groups considered the asset the essential attribute, while the 3rd and 4th age groups considered social and related attributes the same significance. Furthermore, there is a focus shift from (I) social attributes to (I) relation attributes between adults and the elderly.

The third level chart subdivides attributes on a more detailed level. Division describes eighteen subcategories of attributes. The six most important attributes are (I) Social – Community, (I) Social – Use, (I) Relation – Relation, (I) Relation – Character, (T) Asset - natural element, and (T) Asset – Building. From the intergenerational perspective, there is an upward trend in the proportion of community attributes with the increasing age. Secondly, when moving from younger to older generations, there is a shift from character attributes to relation attributes. Besides, a considerable decrease in natural assets occurred from the 1st age group to the 4th age group.

The last level of analysis clarifies four attributes relevant to nature in Estacao (natural asset, relation, use, community). The high-frequency answers about natural attributes are usually combined with the three types of attributes in the descriptions from stakeholders (see figures 16 and 17). As we can see from the table, the most high-frequency answers are sea, beach, park, trees, and plants for natural elements; family members, friends, and neighbors for the community; memory, meaning, and identity for relation; and exercising, drinking and talking for use.

The elderly feel more attached to intangible attributes than children. This is visible at levels 1 & 2 in the increase of (I)relation and (I) social attributes and the decrease of (T)assets. At levels 3 & 4, the older people are more attached to (I) relation-relation attributes because of memory, meaning, and identity. This result could point out that the elderly have more memories and life experiences than children. Level 2 of the attributes chart indicates that children are more related to assets since they might perceive the environment through more visible and physical aspects. On level 3 of the attributes chart, natural elements are high for young adults and children. This result might be linked to the choice and design of the methods. The Minecraft workshop and the walking tour were devoted to values and attributes related to nature that could influence the outcomes. Level 4 attributes indicate the most frequent natural elements: sea, beach, park, trees, and plants.

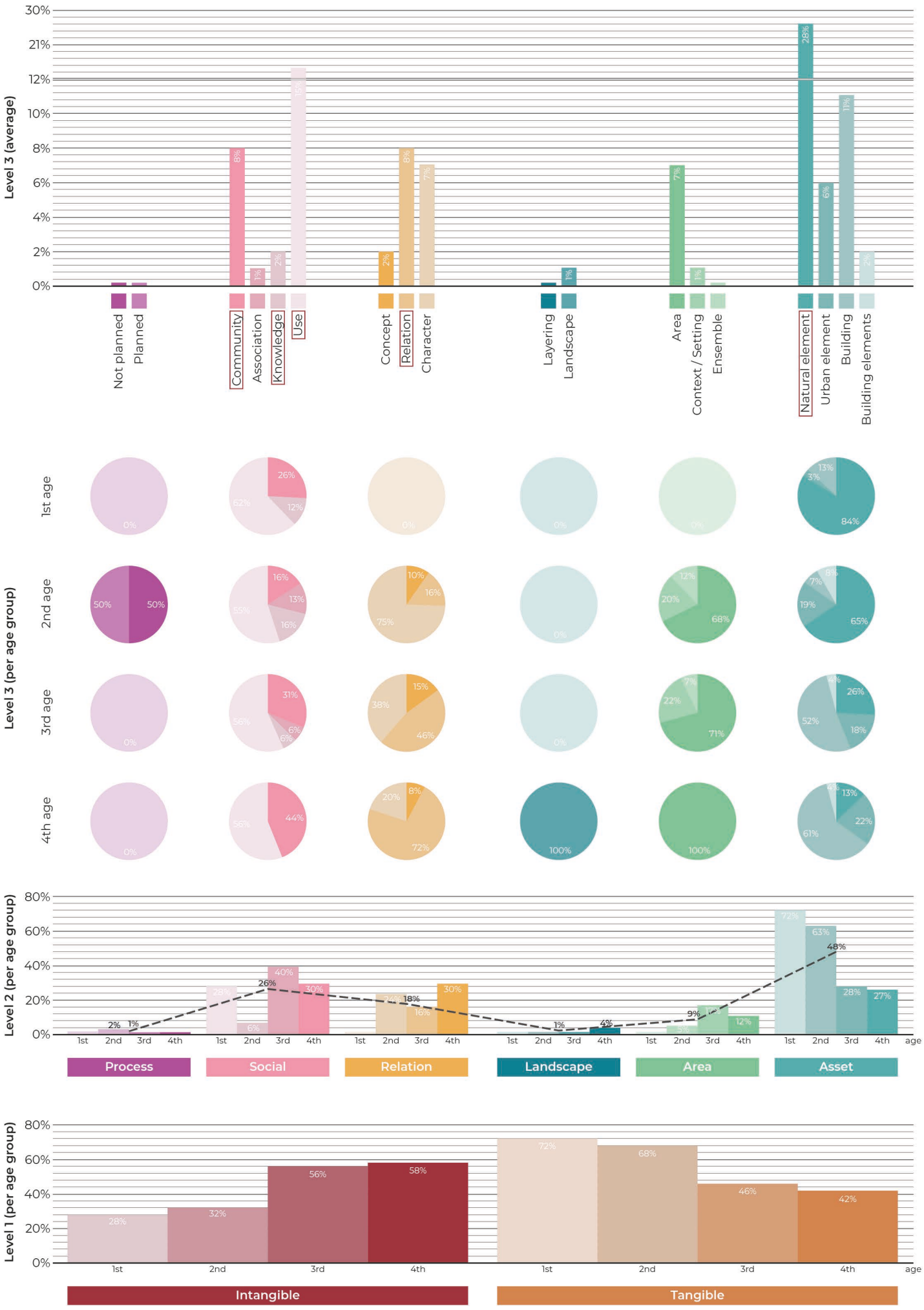


Figure 15: The results sheet of three category levels of attributes.

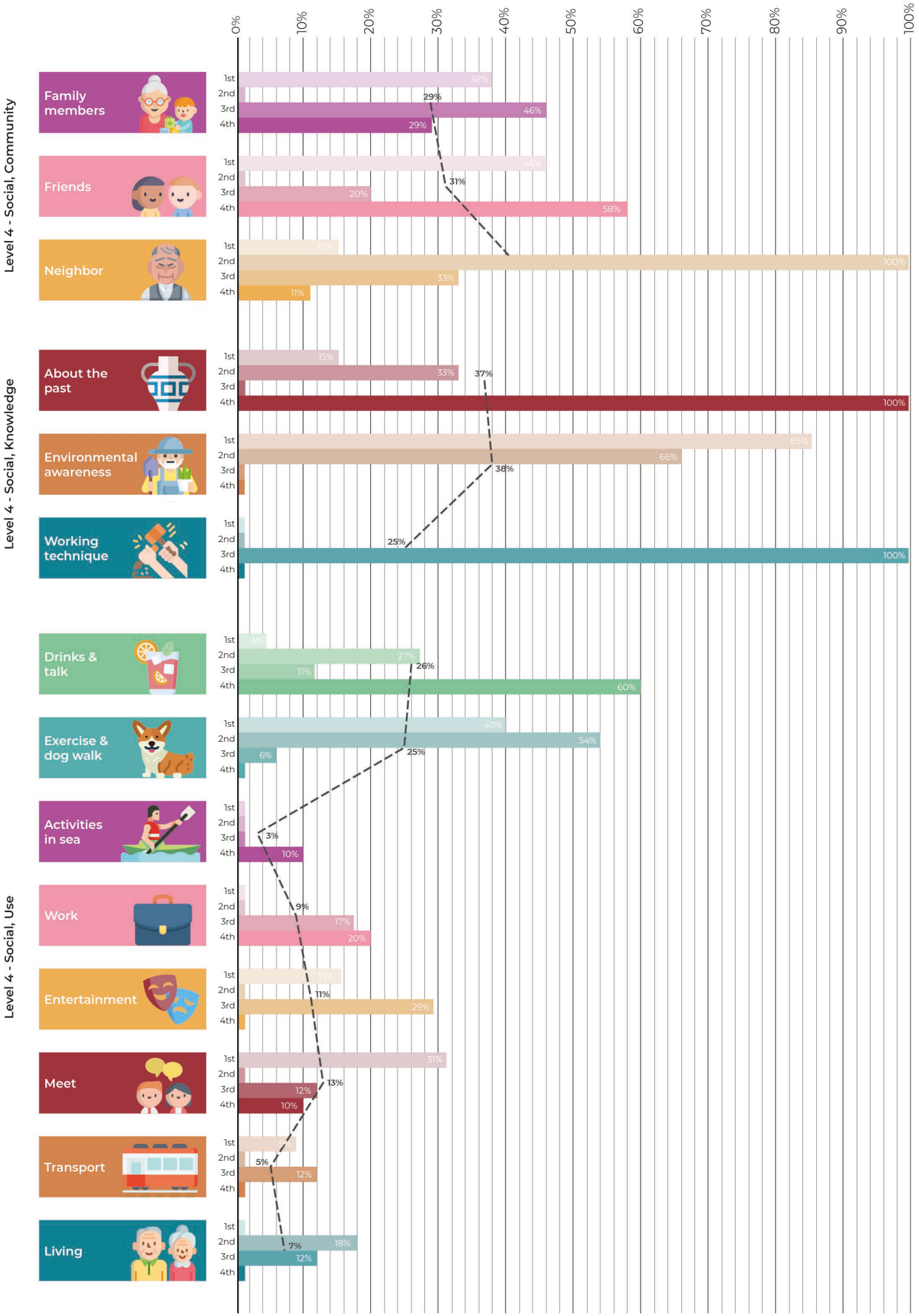


Figure 16: The high-frequency answers for five core attributes.

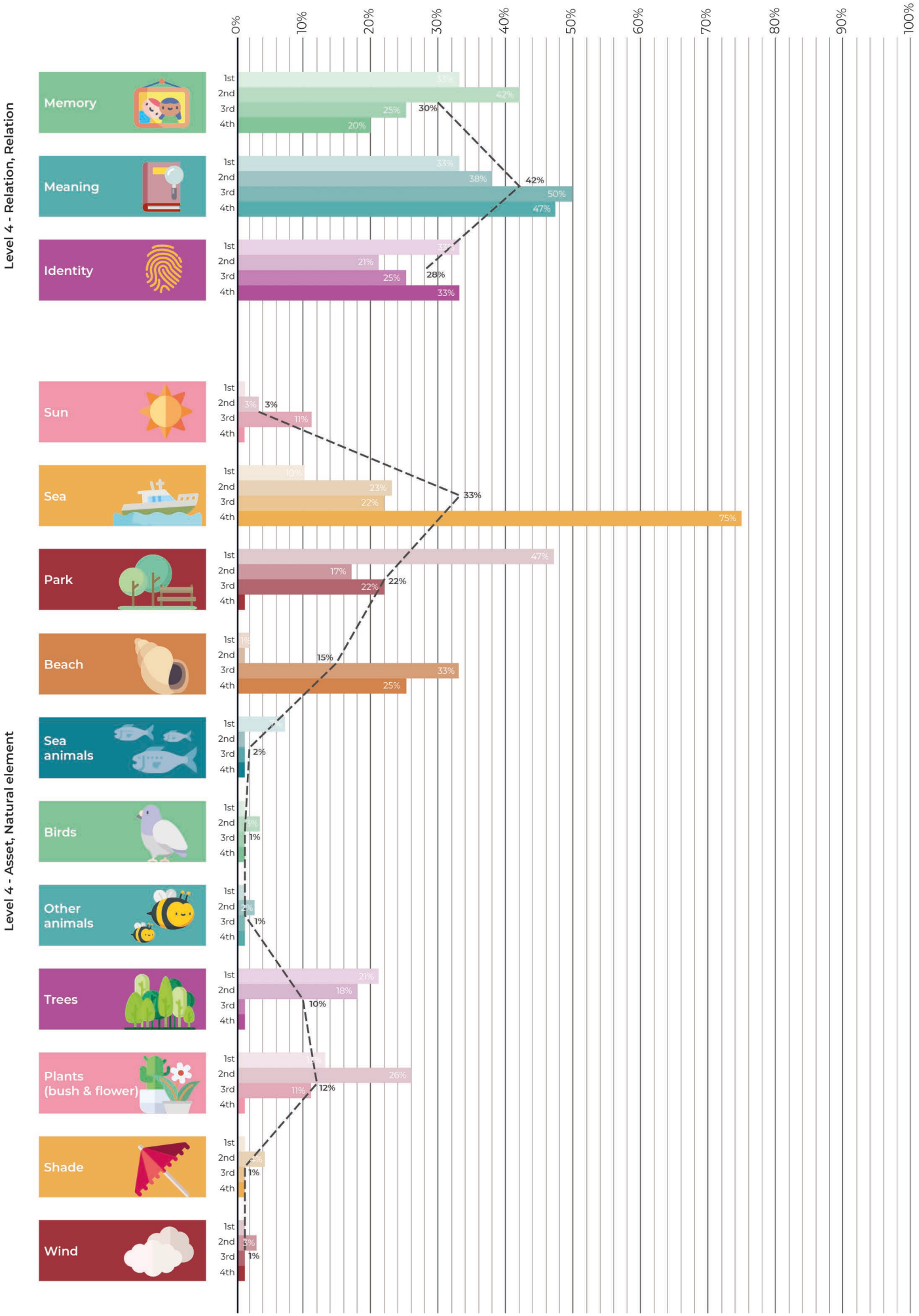


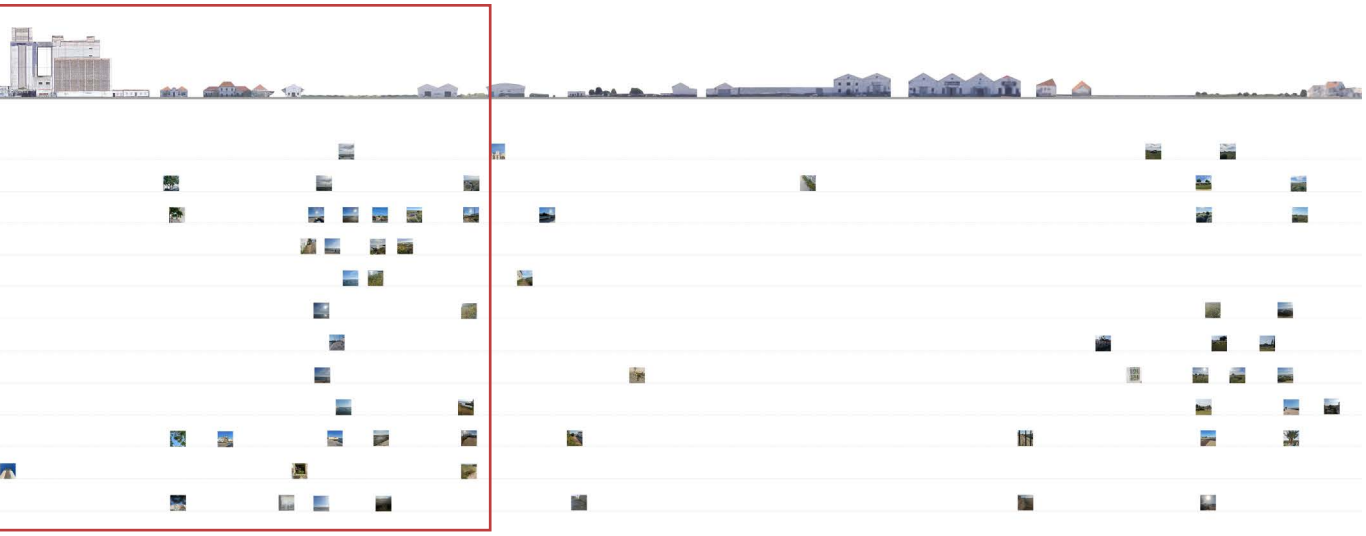
Figure 17: The high-frequency answers for five core attributes.

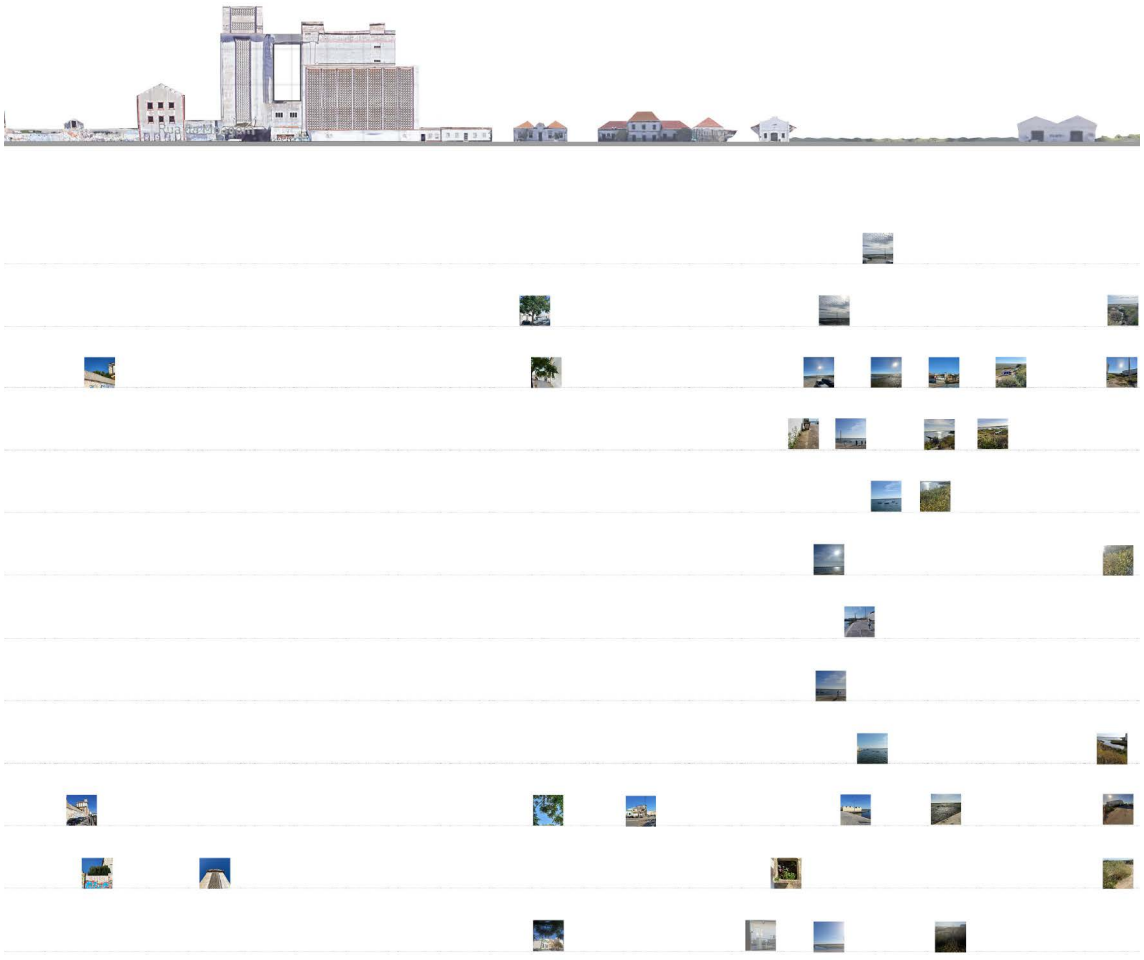
Then, where are the locations of these attributes? Through the hotspot map for place attachment with natural and non-natural attributes (see figure 18). We could find that people generally feel more attached to the edge areas of the neighborhood. For the northern edge of the neighborhood, natural and non-natural attributes are well combined. For the abandoned factory and southern edge of the neighborhood, people feel attached to the non-natural attributes like the outlooking of the buildings or the function they provide. Finally, people feel attached to natural assets only for the neighborhood's western edge with the sea.

Furthermore, when it comes to the coastline, participants feel more attached to the place when they first begin to see the sea. Figure 19 shows the timeline of the photographic walking tour with the attributes that people feel attached to positively. For example, we could find that people have a greater emotional attachment to specific areas with a higher concentration of greenery. People notice inconspicuous details, such as flowers in the cracks of the bricks and the plants on the balconies. They are also keen to explore nature in abandoned blocks through any opportunity for visual access.

Figure 18: The hotspot maps for place attachment.

Figure 19: Attribute timeline of walking tour.





The chart shows attributes used by children in the redesign assignment during the Minecraft workshop (see figure 20). The use of natural elements overlaps with their choices in the questionnaire since the ecological value is the most important for them. Compelling is that attributes like water and sea animals were considered meaningful by children living in the neighborhood of Ria Formosa Natural Park. It can indicate their emotional attachment to their place of living and the natural characteristics of this place. Through this exercise, children express their need for the natural environment, allowing them to spend time in green public spaces and interact with others.

Figure 20: The comparison between Minecraft workshop redesign attributes.

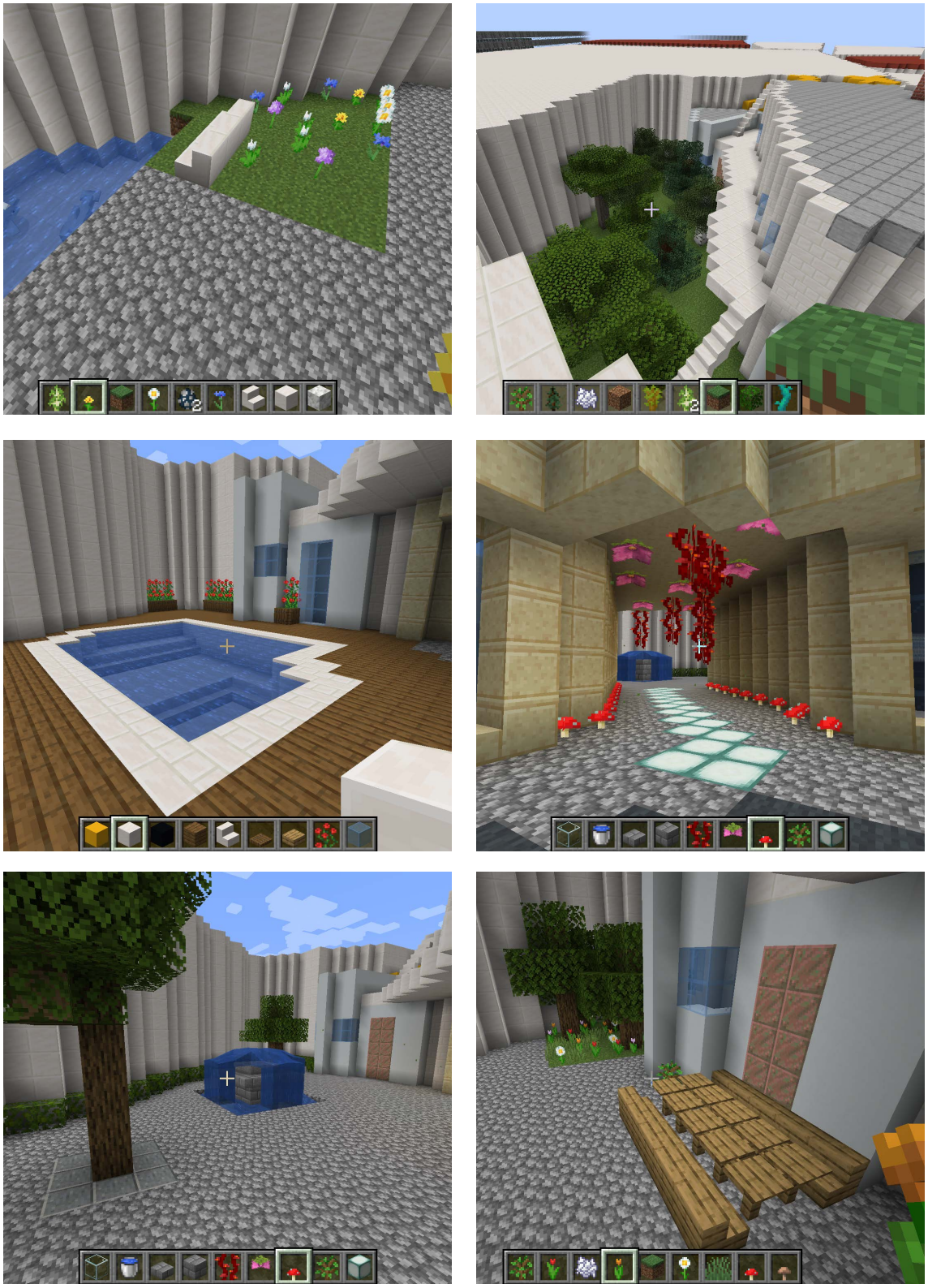


Figure 21: The redesign results of Minecraft workshop.

4 Conclusions

The conclusion focuses only on the four highest-rated values: ecological, social, economic, and aesthetical. We can conclude that natural elements promote people's emotional attachment to Estação mainly through two approaches:

1. Based on the ecological values of natural assets, people feel attached to the green areas as a part of Estação.
2. Based on the social and economic values of natural assets, natural elements are well connected with other attributes, mainly (I) relation-relation, (I) social-use, and (I) social-community attributes. In this way, people's emotional attachment to their social network is also translated into natural assets.

An essential aspect of the research is that four different methods were used to research four different stakeholders. Differences in the design of methods could influence the outcomes. For example, the questionnaire used with children and the walking tour format were oriented towards natural elements. On the other hand, if nature would not considered significant by children and young people, it would be visible in the results. Furthermore, the results of the older generations show similarities in both values and attributes, which can be linked to the adaptation of the method from the card game and street interviews. Due to changing dynamics of the fieldwork, not all methods can be used in the most optimal setting.

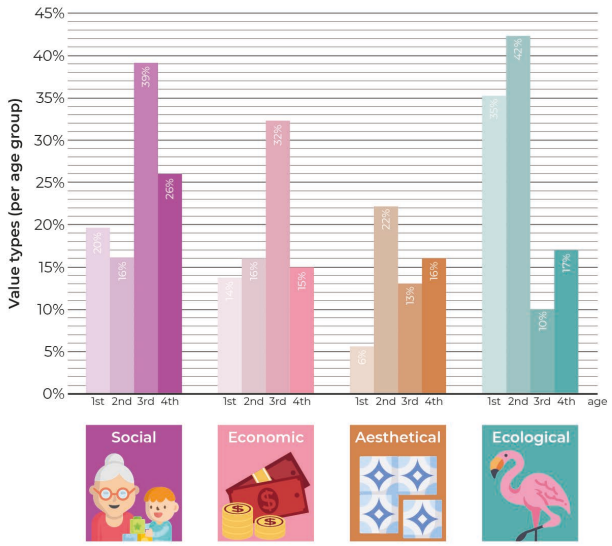


Figure 22: The four highest rated values from research. Made by authors.

Results from this research allow us to answer all the questions stated at the beginning of this paper.

Sub-questions:

1. How can an intergenerational relation be created by using the values on nature of the local community of Estação?

The most important values for all generations are social, economic, and ecological. The highest overlaps are (social) emotional, collective, and (ecological) spiritual. These are linked to proposals connected to social gatherings and the relation between nature and the built environment.

2. How could the tangible and intangible attributes affect different generations' place attachment to Estação?
Intangible social and related attributes are more relevant to place attachment than tangible attributes. There is a focus shift from social attributes to relation attributes between adults and the elderly. It is visible that residents feel more attached to the edge areas of the neighborhood.

3. How does the younger generation feel emotionally attached to nature in Estação?
The most important values on nature for the younger generation are ecological, aesthetical, economic, and social. By comparing the positive and negative attachment to nature with each other, this generation is aware of the potential that nature can have in their neighborhood and that they are not satisfied with the current state. Besides that, areas with a high concentration of natural attributes are considered places where people feel an emotional attachment.

4. How can children's values on nature be applied to redesigning vacant buildings?
The most essential for children are ecological and social values on nature. Those values indicate that for the redesign of the vacant building, an integrated approach to architecture is fundamental. Considering the results, the redesign of the vacant building should include the following attributes: water, trees, plants, and sitting areas. Creating green public spaces that offer opportunities for interaction with other people and increasing biodiversity around the buildings is how architects can implement children's values on nature in redesigning vacant buildings.

Research main question:
How can the values on nature of different generations influence the emotional attachment to Estação, and support the redesign of a vacant building?
Nature values are much more comprehensive than it was expected. A deeper analysis indicated that values considering nature could be associated with social interaction, memories, and environmental awareness. Different generations consider significant other values that can be seen as an obstacle or as an opportunity to create a more complex and meaningful urban landscape. Values of different generations influence their emotional attachment to Estação through associations people have. Elderly and adults feel more attached to their neighborhood because of memories and emotions triggered by social interaction. Younger generations feel attached to their place of living because of the importance of nature in their life.

Redesign- further development
The location of natural elements in vacant buildings of Estação provides an opportunity to improve people's emotional attachment to this area. Therefore, the social, economic values, and intangible attributes are relevant to natural assets. In addition, the value overlapping and differences between intergenerational should be considered. Therefore, the second part of the main question, considering the redesign of the vacant building, will be described in the following chapters focused on the redesign of various vacant buildings in the Estação neighborhood.

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Chapter 2

Values-based design

2.1 Masterplan

During the research, the two main problems of Estação: vacant buildings and lacking green, are pointed out through the case study and confirmed again in fieldwork by local experts and residents. As a result, the research group chooses four vacant buildings for the redesign process. Selected solutions are based on the research outcome, according to the frequency of the answers. Examples of the answers taken into account during the design of the master plan: “making use of roof place,” “creating green corridor,” ”setting animal protection areas,” “promoting bicycle traffic,” and “increasing social spaces” and “organizing football community.”

Based on the synthesis and evaluation steps in the value-based redesign model, “creating green corridor” and “increasing social spaces” are selected to promote ecological and social values, which are the highest rated values from the cultural significance survey. Therefore, these two strategies are the starting point of the master plan. Then, all the individual redesign proposals will follow the urban level strategies in the master plan, further developing the details of the green corridor and social spaces systems, like the routing of the corridor and the activities in social spaces.

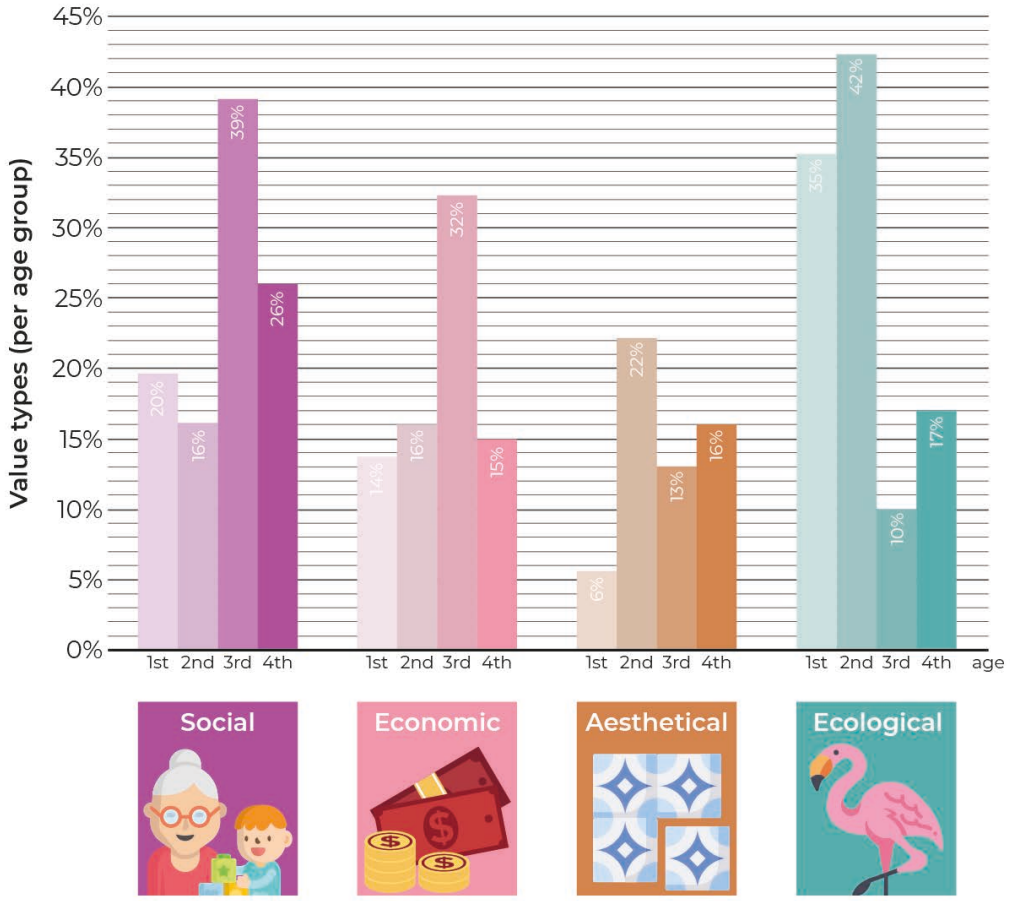

Figure 1: The four highest rated values from research.

Figure 2: Masterplan area boundary.

Figure 3: Images of natural elemtents in Estação.



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TAKE-AWAY
RESTAURANTE

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RESTAURANTE
TAKE-AWAY
TAKE-AWAY
RESTAURANTE


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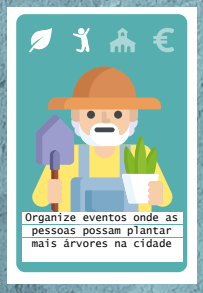
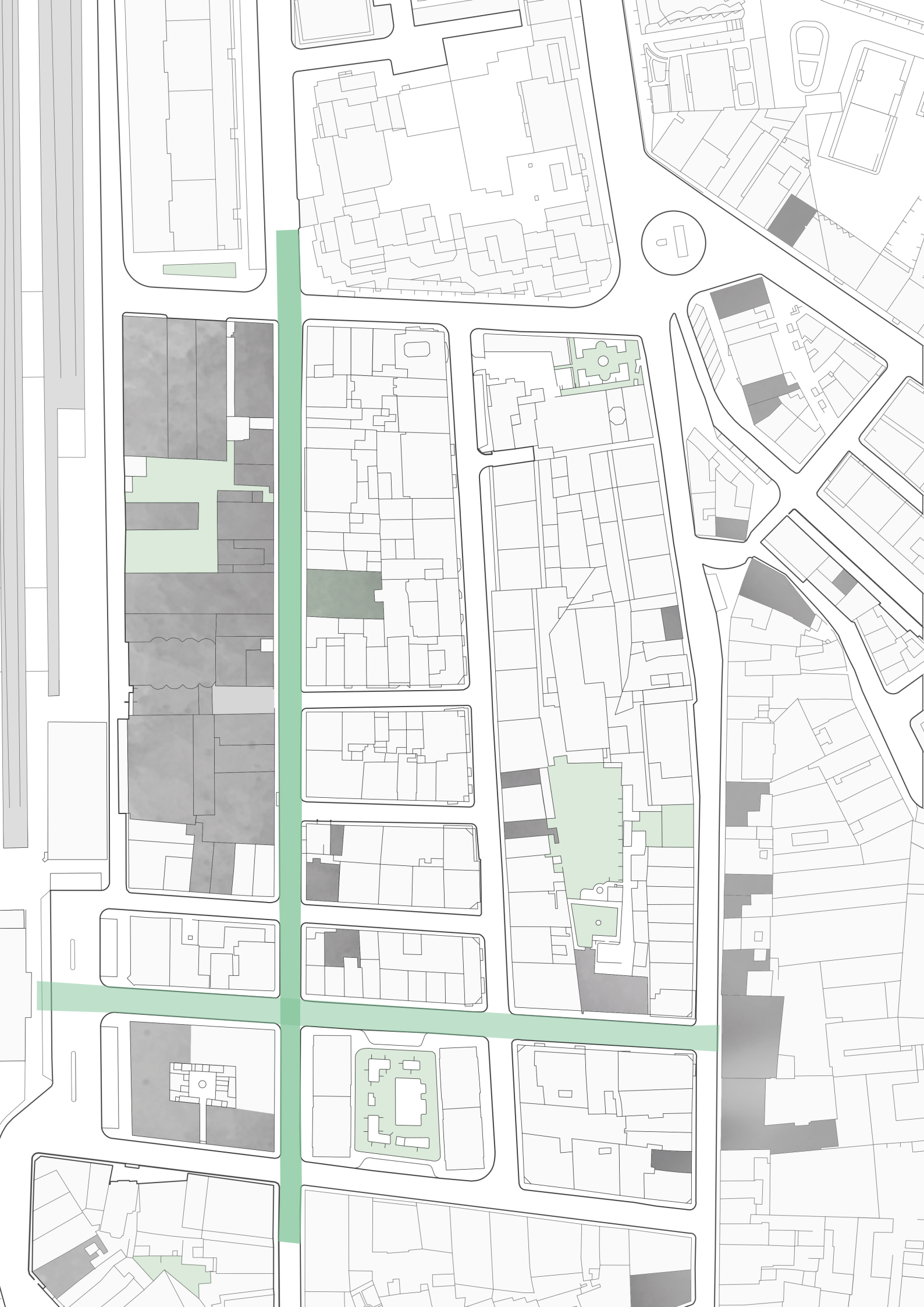
Ecological values

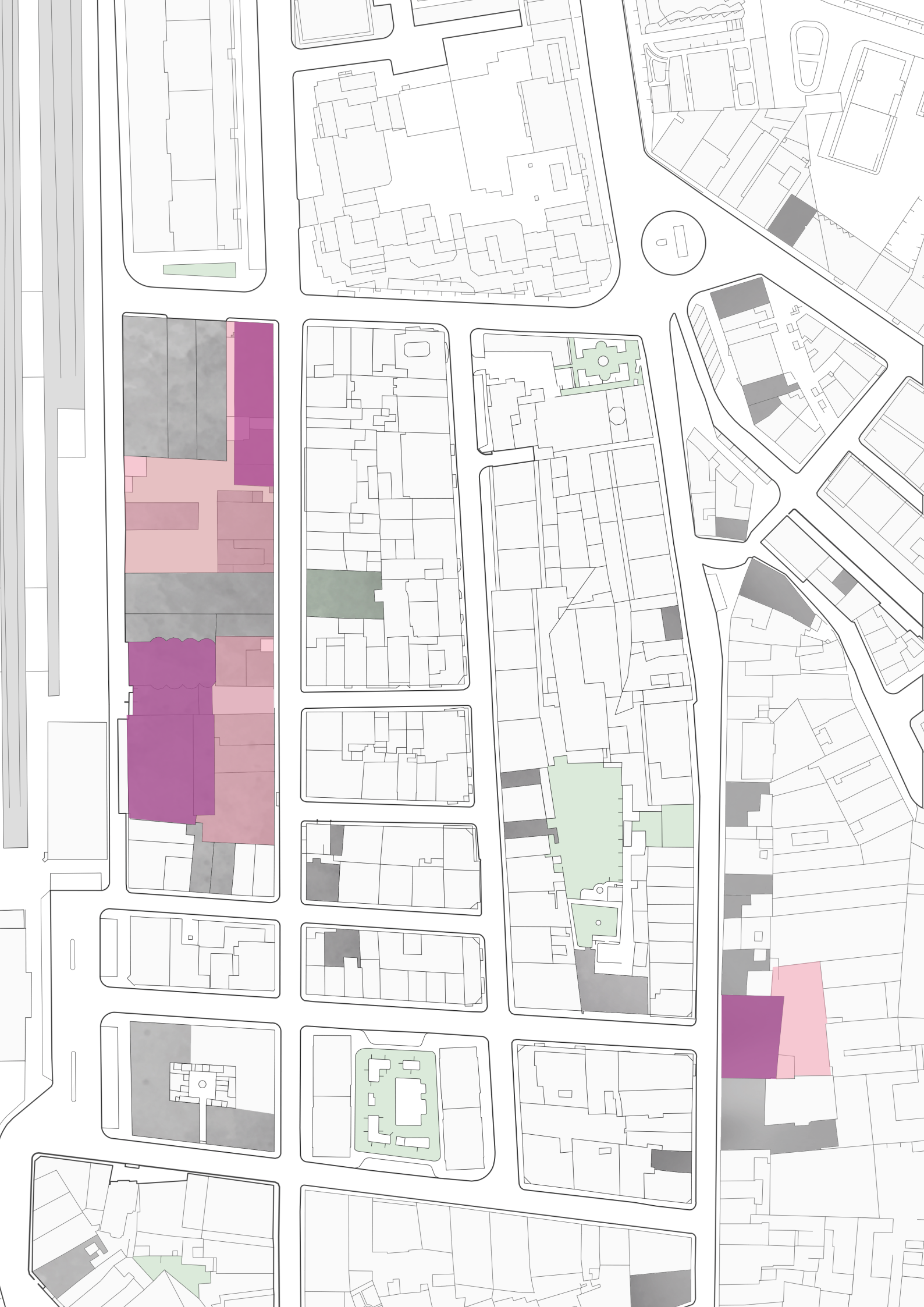
Green corridors in cities can be defined as linear natural infrastructure, such as trees and plants, that link up other green and open spaces to form a green urban network. In the master plan, this corridor focus on the Bombarda street, the Coelho street, and waterfront areas, aiming to provide a pedestrian-friendly connection between urban and natural areas to promote place attachment. This corridor will also take specific conditions of the neighborhood into account, creating a railway overpass and air corridor system, taking full use of the plants in vacant sites.





Social values

Architectural, social space is the conscious design of an environment like a social center, community center, or other gathering places where people meet and interact. Based on the age group of the stakeholders, the individual redesign can figure out the most relevant social community and social use attributes for them. With the cooperation of four redesign projects, the master plan meets the different social values of all age groups and creates better intergenerational relations in Estação.

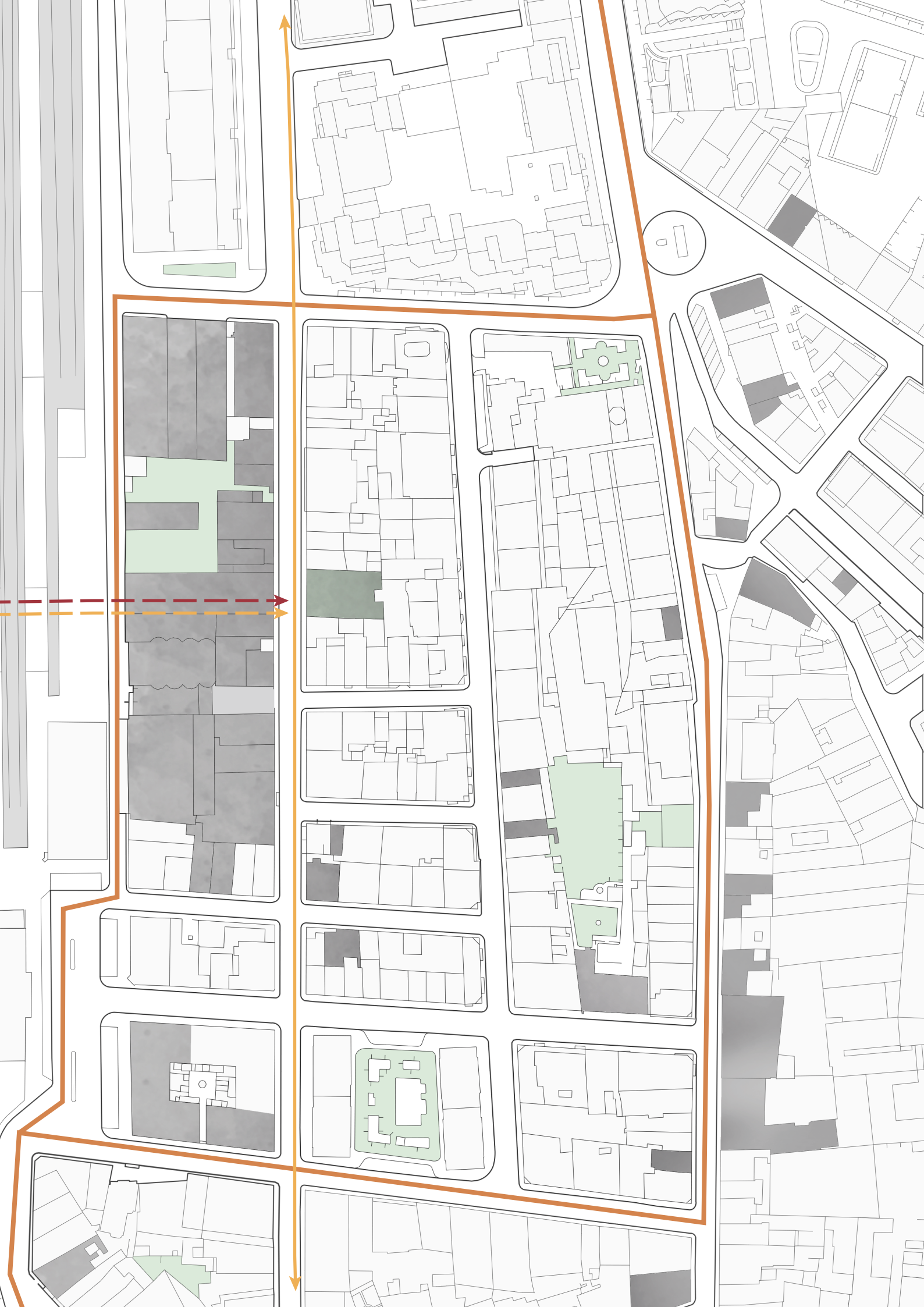


Infrastructure

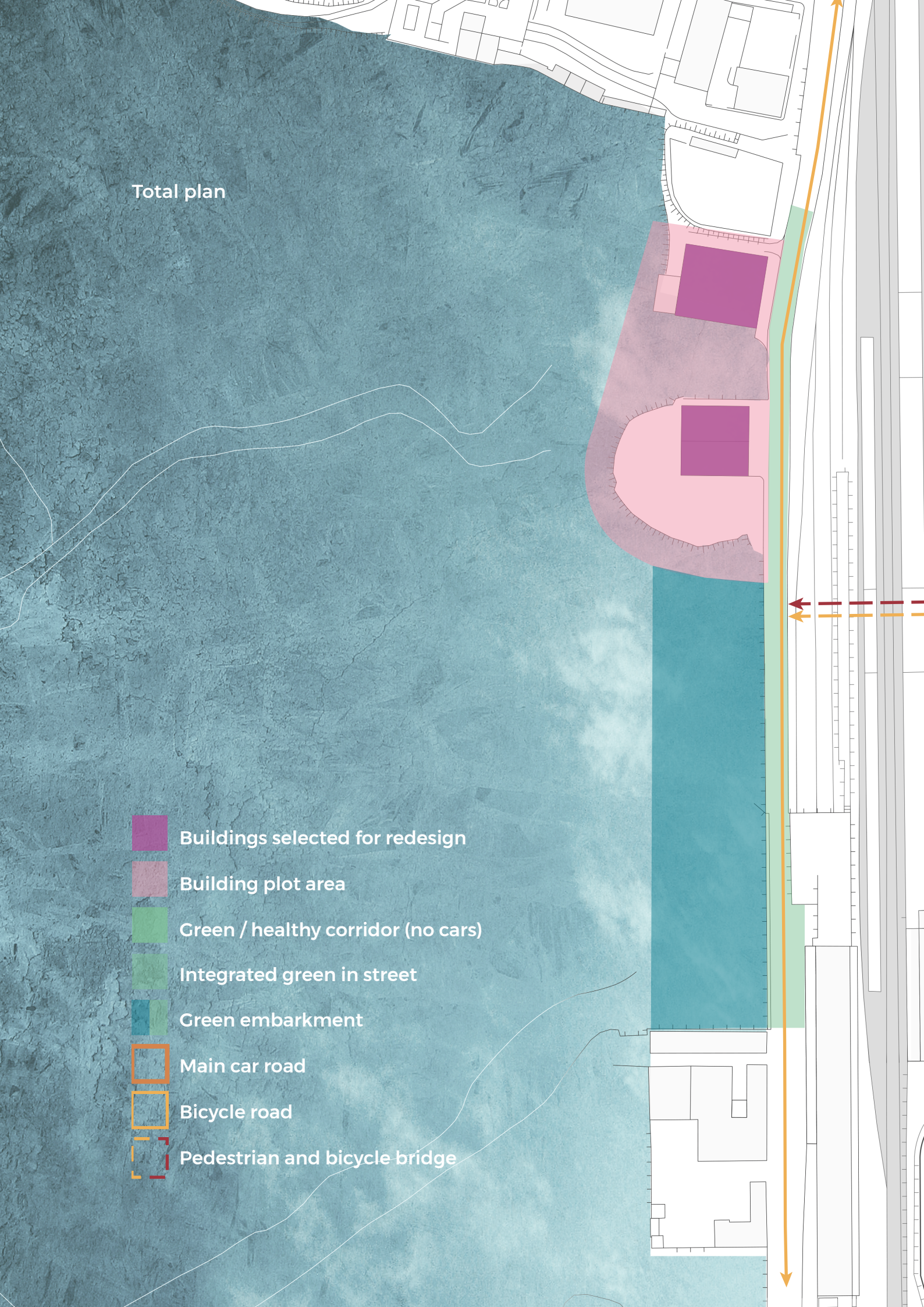
Main car road

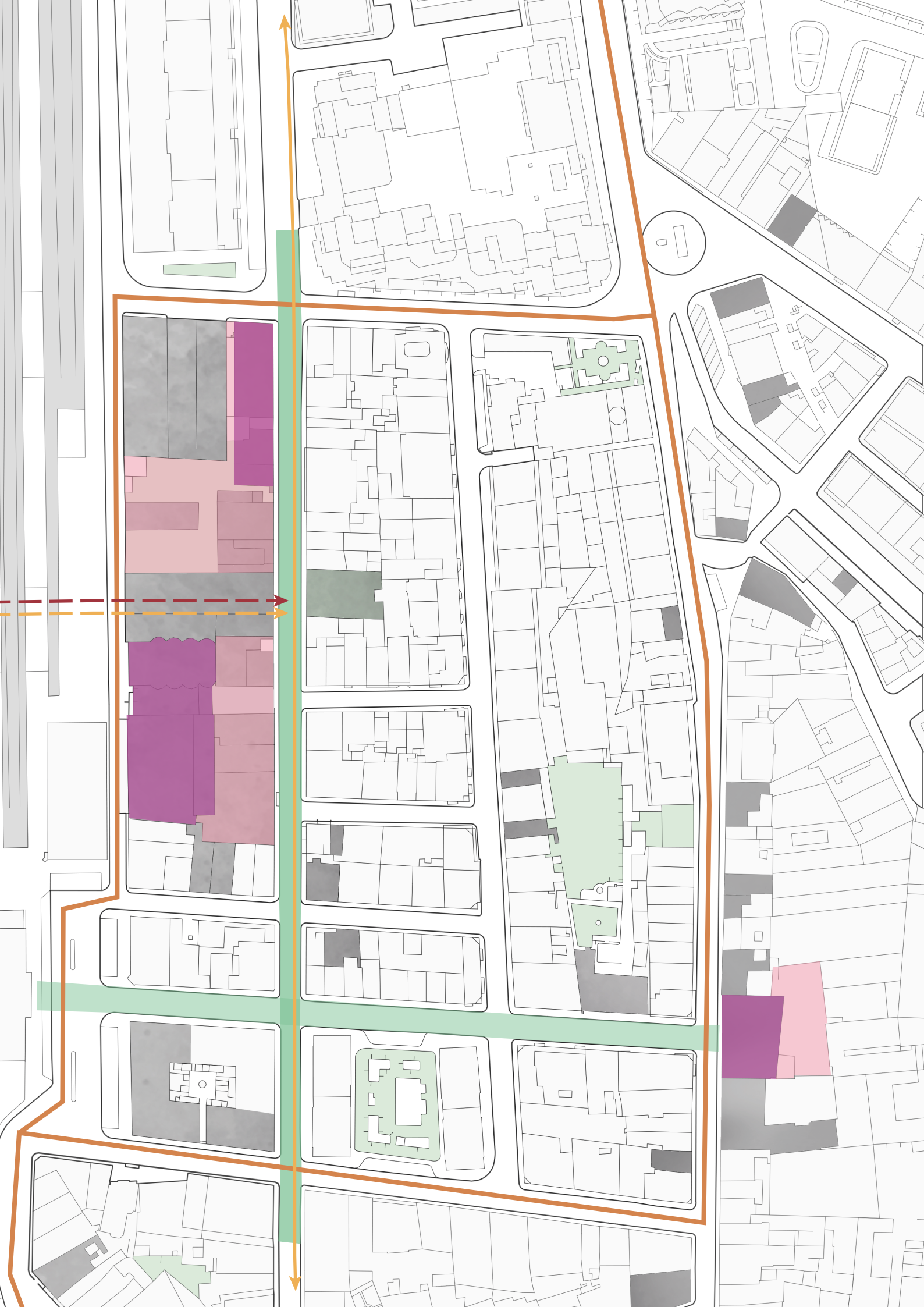
Bicycle road

Pedestrian and bicycle bridge



Total plan


Buildings selected for redesign
Building plot area
Green / healthy corridor (no cars)
Integrated green in street
Green embarkment
Main car road
Bicycle road
Pedestrian and bicycle bridge



2.2 Location decision

Figure 4 shows the timeline of the photographic walking tour with the corresponding pictures are taken by the participants during the walk. The pictures show the positive emotional attachment attributes towards natural elements. The analysis shows that people feel more attached and have more positive feelings towards areas that contain natural attributes. Especially the area that contains the attributes sea, park, and flowers, referring to the Ria Formosa (see figure 5). A strategy that is derived from this analysis is to redesign a vacant building and plot that is located at the waterfront. In combination with the desire to redesign a vacant building and in the context of the master plan, a plot that contains two former warehouse buildings at the waterfront are chosen to redesign.

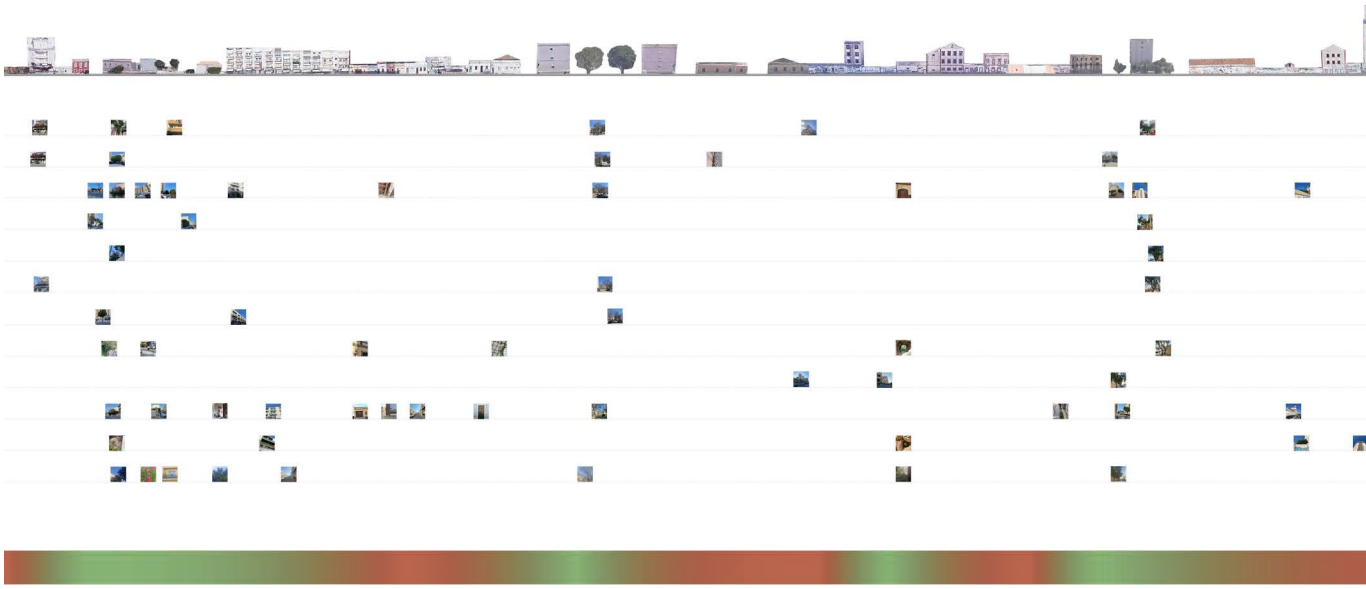


Figure 4: Timeline photographic walking tour.

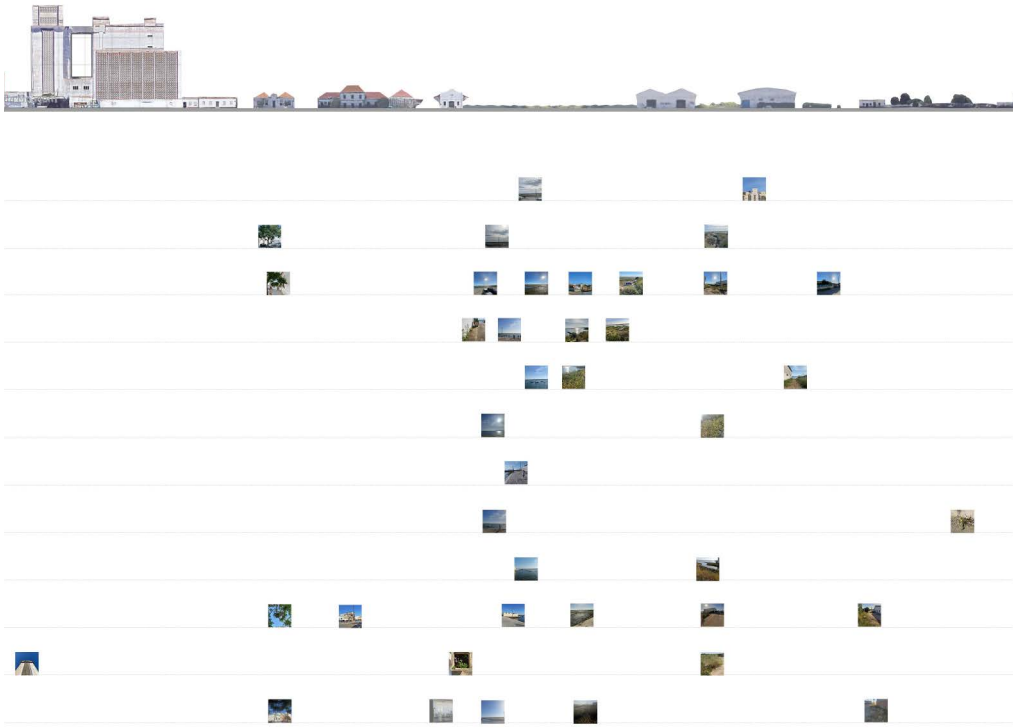


Figure 5: Cut-out of timeline.

2.3 Current situation

2.3.1 Urban location

The plot for the redesign is located at the waterfront on the south side of Estação (see figure 5). It contains two vacant warehouses, surrounded by a green plot that is strongly influenced by the tidal movement of the Ria Formosa (see figure 6). When it is high tide, the sea almost reaches the buildings, creating a beachy landscape. During low tide, the landscape consists of clay and mud and follows the morphology of a typical tidal area.

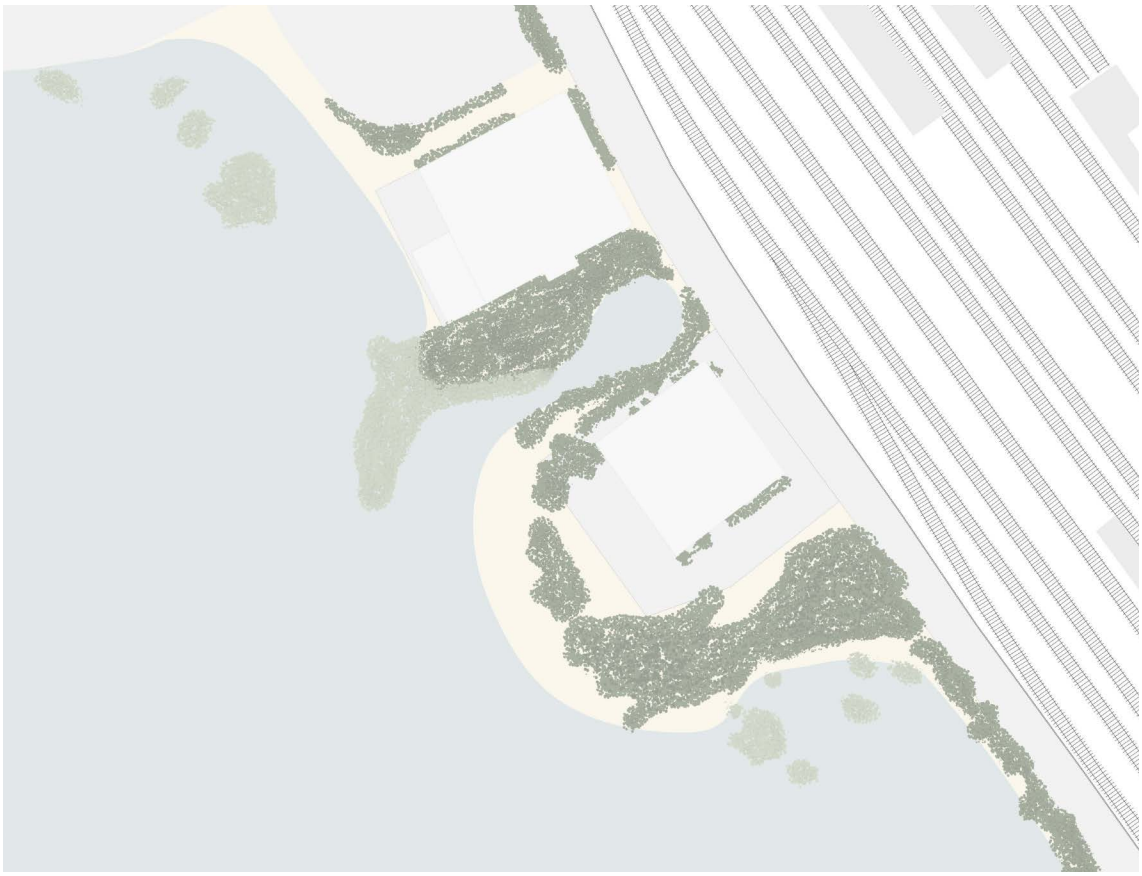


Figure 5: Urban location

Figure 6: Pictures of tidal area.

2.3.2 Climate

The buildings are located in the Algarve region, in the Southern part of Portugal. Here, a typical Mediterranean climate is dominant: warm, dry summers and mild minters. As a result, the mean annual temperature is around 17 °C, with the lowest average temperature measured in January of 10.9 °C and a maximum average temperature in August of 26.8 °C (see figure 8).

The wind blows predominantly from the west and southwest during the years. However, the wind blows quite frequently from the east and southeast during summer and spring. The main wind speed is set around 5.1 m/s.

Also typical for this region is the high amount of solar energy that can be generated (see the last graph in figure 8). This results from high average sun hours and a low amount of rainy days. [1]

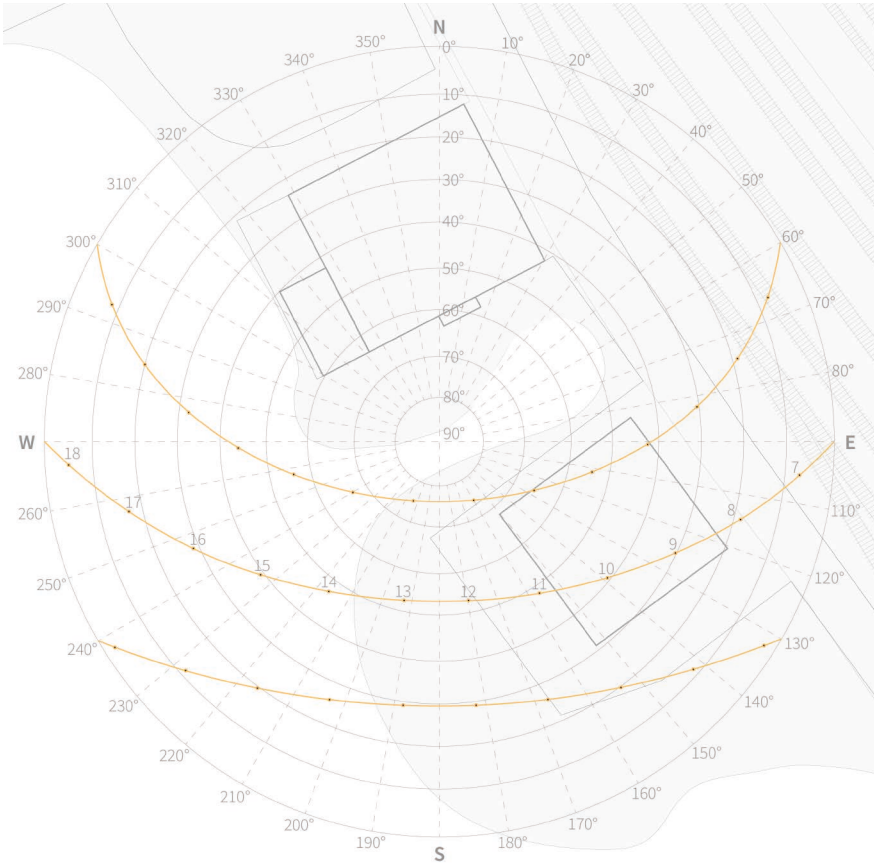
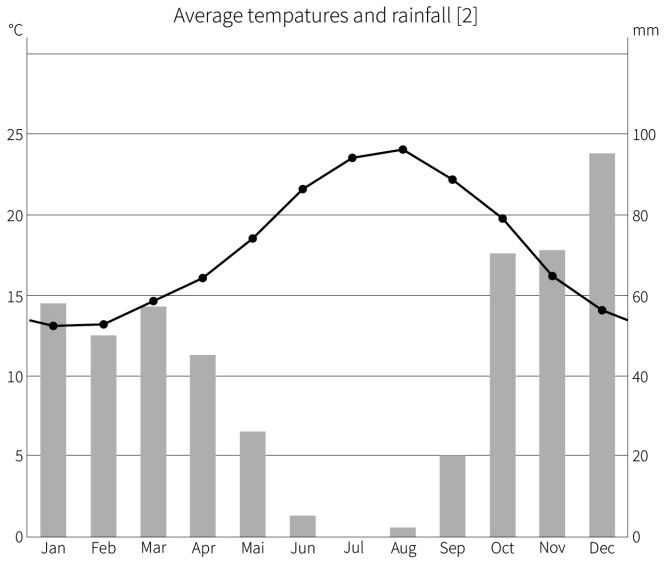
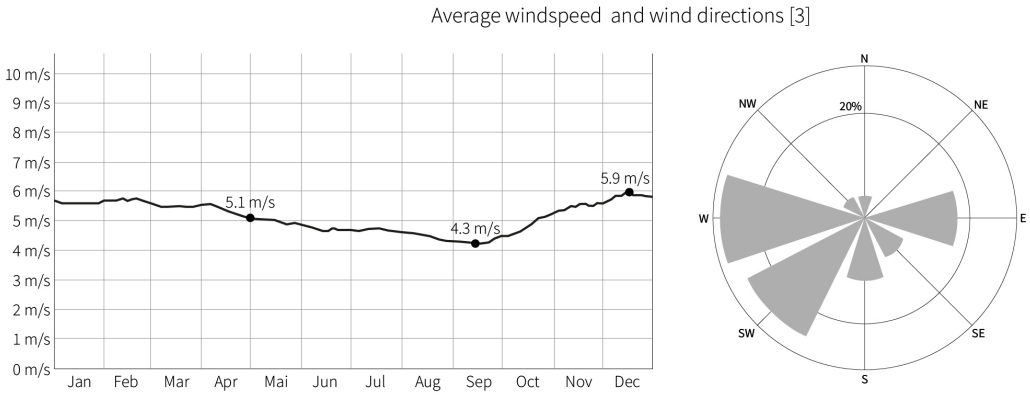


Figure 7: Sun path diagram [5]



	Jan	Feb	Mar	Apr	Mai	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. Temperature °C	13	13.2	14.6	16	18.5	21.6	23.5	24	22.2	19.7	15.9	14
Min. Temperature °C	10.9	11	12.2	13.5	15.7	18.5	20.1	20.9	19.6	17.5	13.8	12.1
Max. Temperature °C	15.2	15.5	16.9	18.4	21.1	24.2	26.4	26.8	24.6	21.8	18.1	16
Rainfall (mm)	58	50	57	45	26	5	0	2	20	70	71	95
Avg. Humidity (%)	74%	72%	72%	71%	68%	65%	61%	63%	70%	75%	72%	75%
Rainy days (d)	6	4	5	5	4	1	0	0	2	5	5	6
Avg. Sun hours (h)	6.7	7.6	8.5	9.7	11.1	12.2	12.4	11.7	10.1	8.5	7.4	6.6



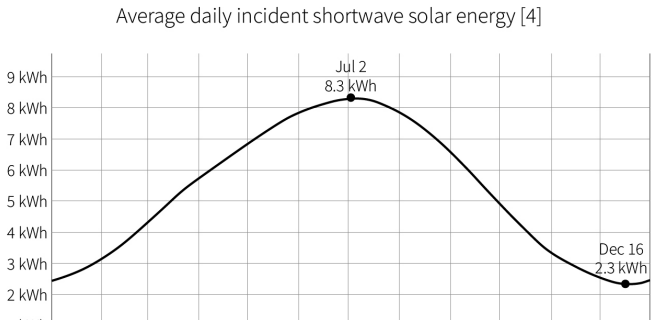


Figure 8: Climate overview

2.3.3 Building condition

The first building (see figure 9) follows a typology that is quite characteristic for industrial warehouses. The building was probably used by fishermen to store their equipment like fishing nets and other equipment. The structure consists of two parts but is connected by the facades on the north and south sides. These facades also provide the entrances to the building, two large doors of approximately 3 x 3 meters on both sides. Each building part contains a structure with five wooden frames bearing the roof's steel plates. Concrete walls and columns in the façade support this structure. The foundation of the building consists of a concrete strip foundation.

The second building (see figure 10) is slightly larger than the other building, and probably this building was also used by fishermen for storage purposes. The entrances to the building are located on both sides, with large sliding metal doors on the south to ensure boats were able to enter the building. The main building consists of a concrete grid structure that supports the arched steel plates of the roof. The grid structure is filled with horizontally perforated bricks that form the façades. The exterior walls are plastered and painted frequently. The building is built on rubble stone with a cement mortar.

There are two small extensions of the building. The one on the south side of the building can be entered from the inside and consists of a concrete structure built on concrete pillars. The west side of the building also has a small extension, but it can only be reached from outside. The structure comprises wooden columns and beams, finished with metal plates on the roof and façades.

The follow four pages will show the current condition of the buildings in floorplans and sections with the buildings materials.

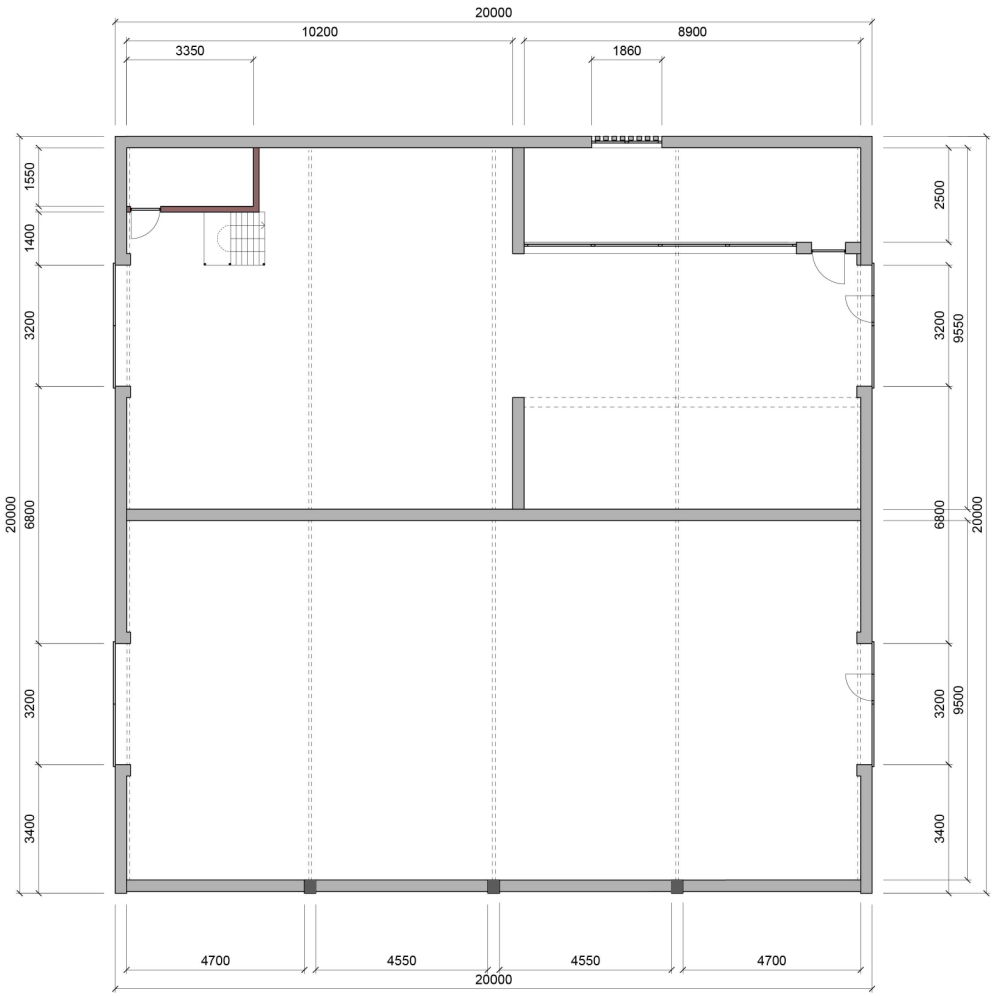


Figure 9: Pictures of building 1.



Figure 10: Pictures of building 2.

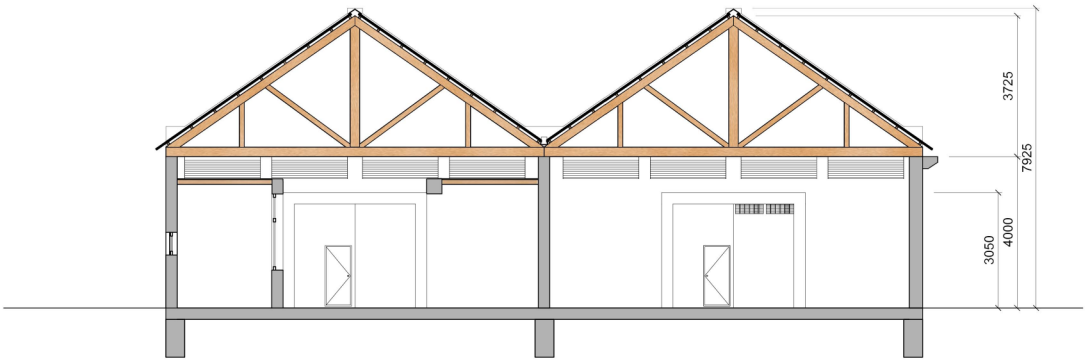
Current building condition building 1

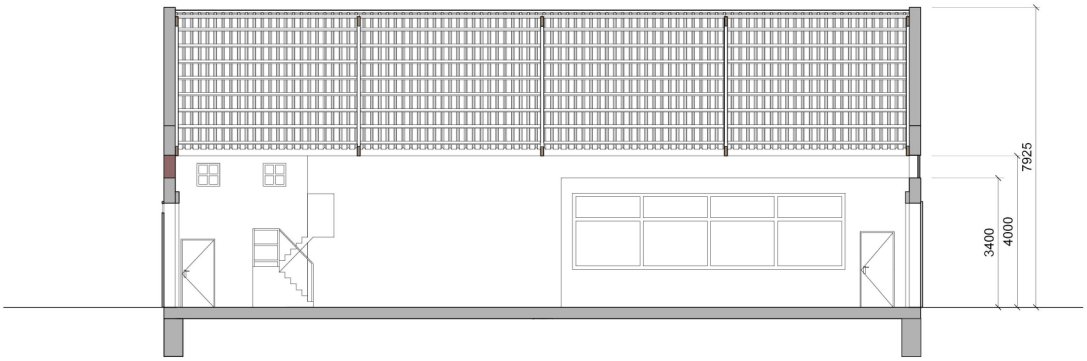


Cast -in-situ concrete walls
300 mm

Cast -in-situ columns
300x 350 mm

Horizontally perforated bricks
300 x 200 x 150 mm





Cast -in-situ concrete

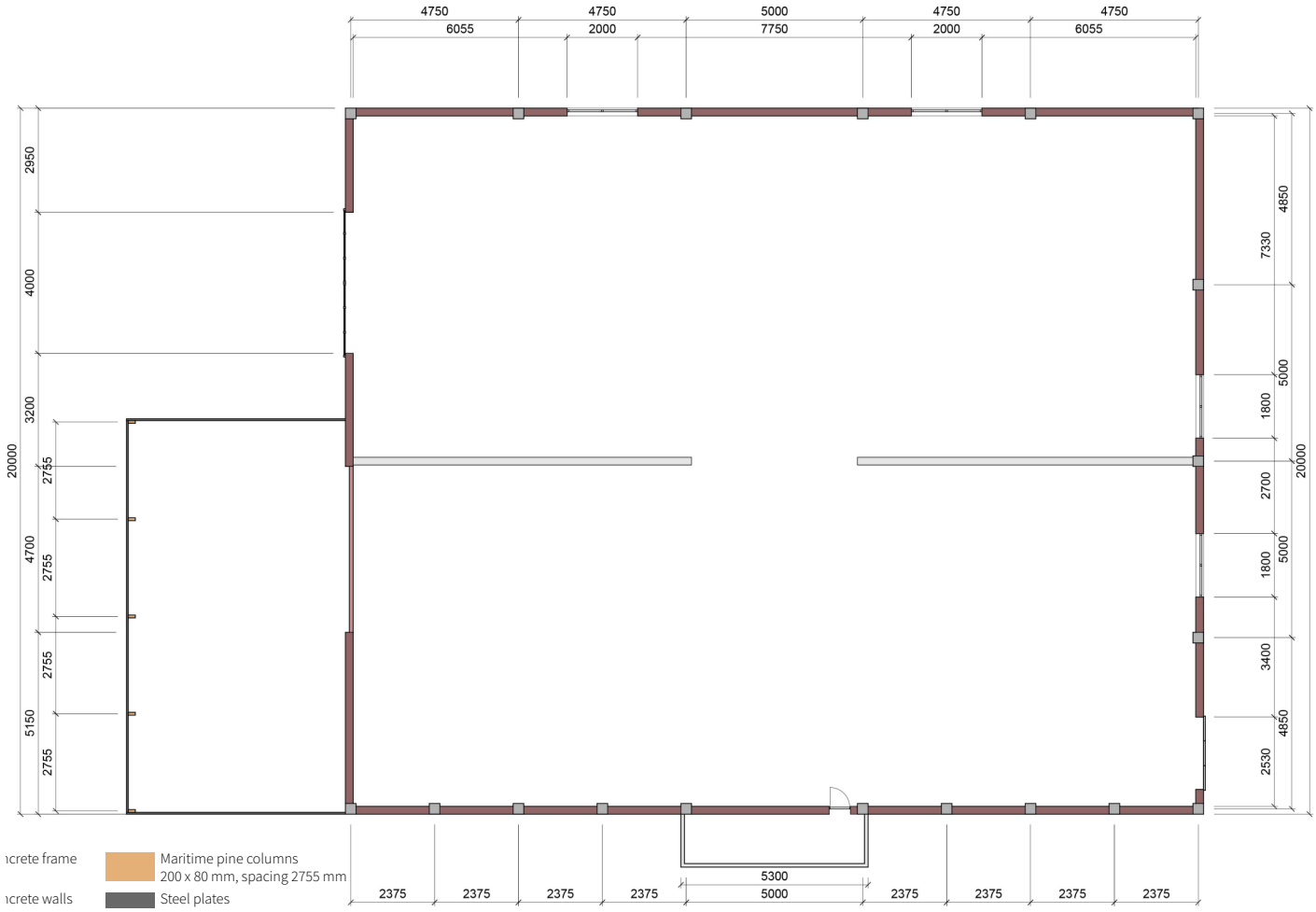
Corrugated steel roof plates
t=0,50 mm

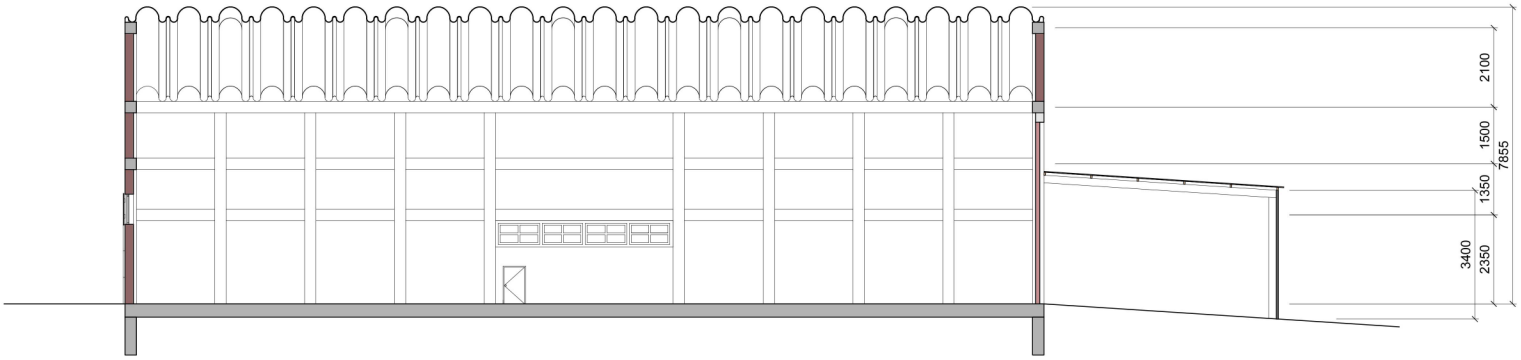
Maritime pine purlins
75 x 50 mm, 750 mm spacing

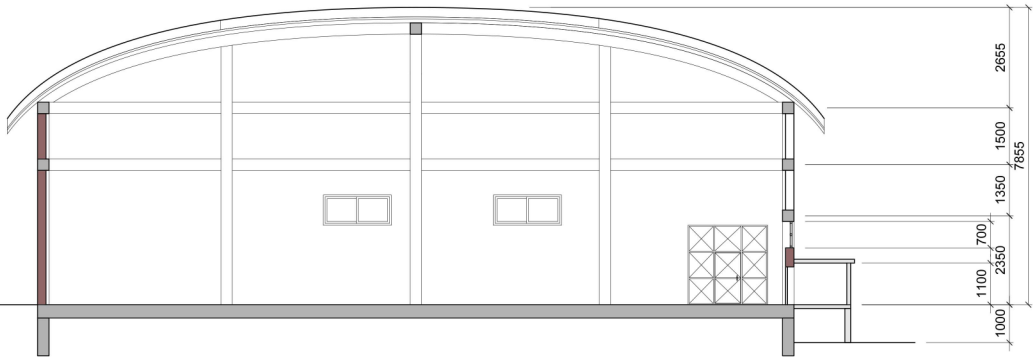
Maritime pine truss
250 x 75 mm, 4850 mm spacing

Horizontally perforated bricks
300 x 200 x 220 mm

Current building condition building 2







Cast -in-situ concrete frame
300 x 300 mm

Cast -in-situ concrete walls

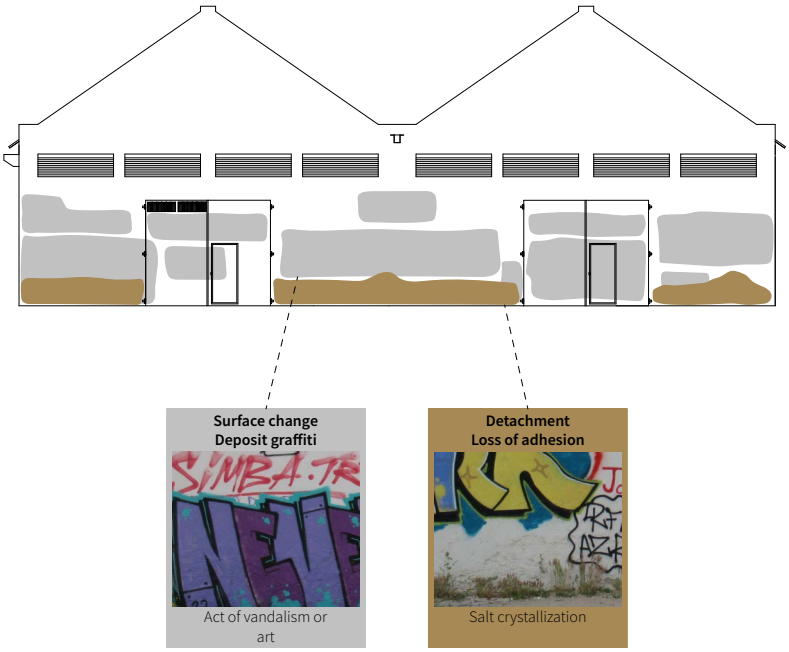
Horizontally perforated bricks
300 x 200 x 220 mm

Maritime pine columns
80 x 40 mm, spacing 1250 mm

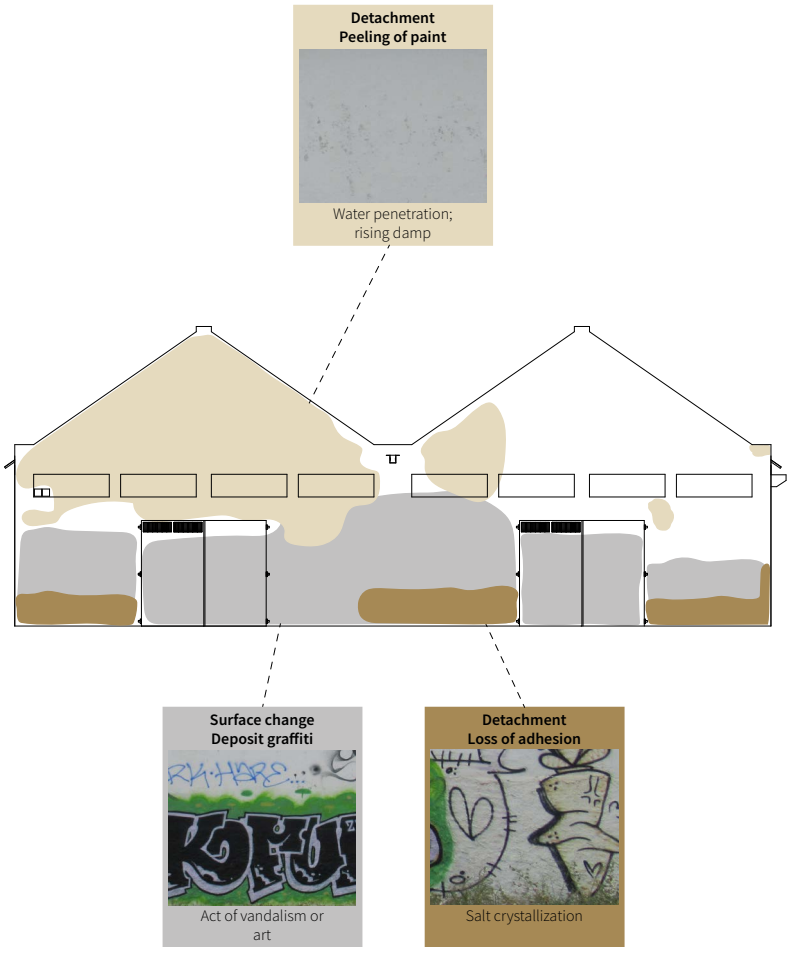
Steel plates

Horizontally perforated bricks
300 x 200 x 110 mm

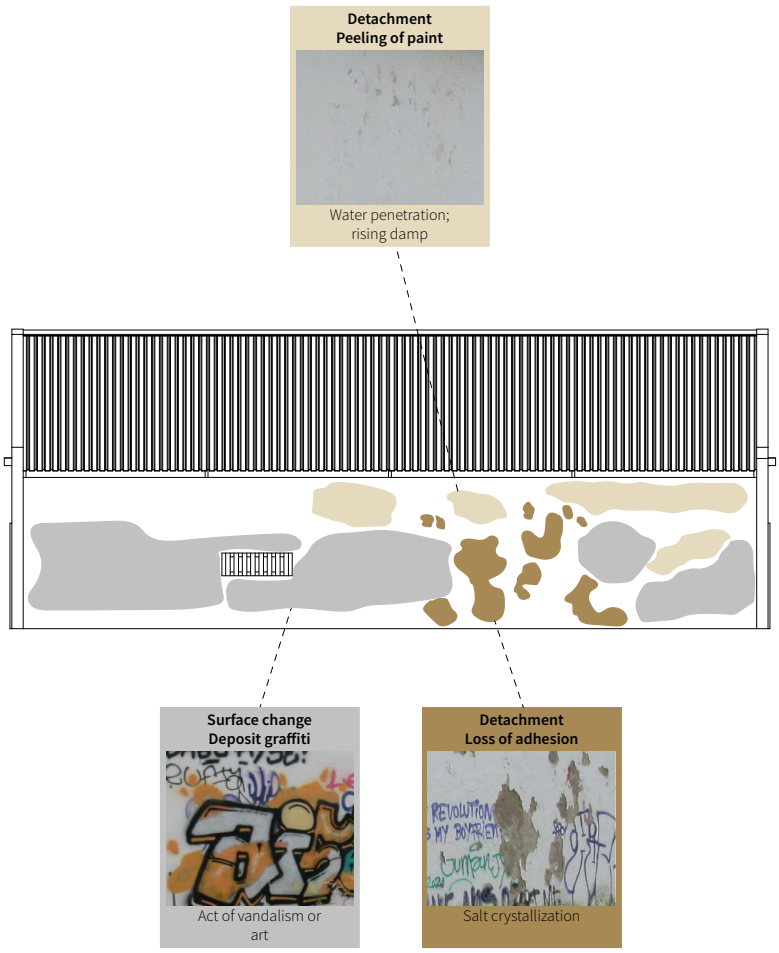
2.2.4 Building damage inventory - building 1



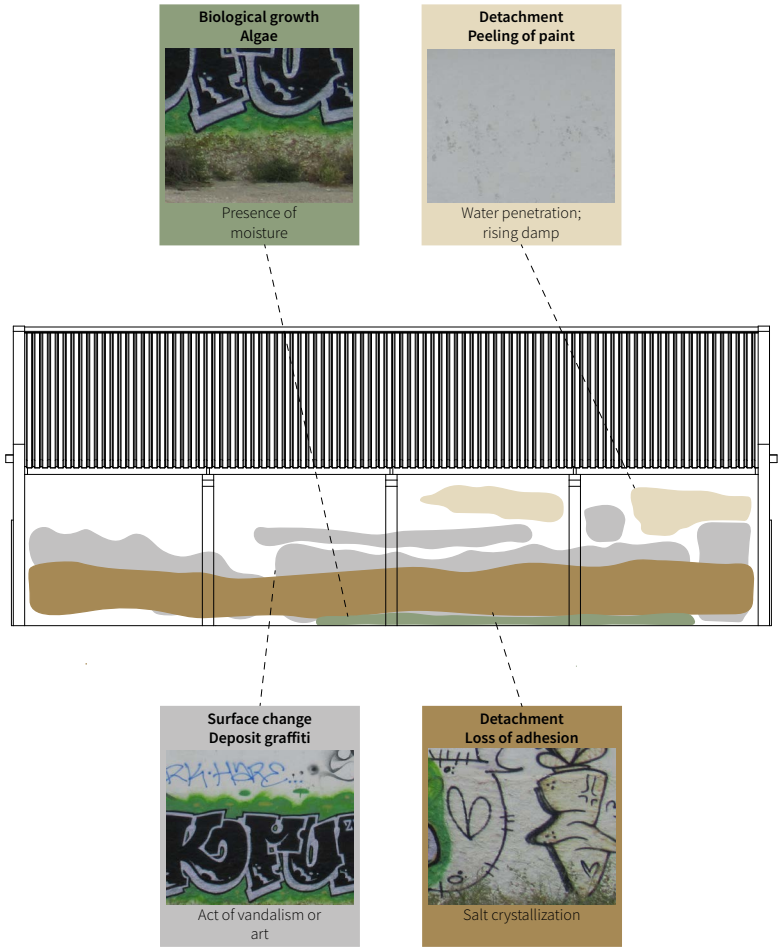
East


Detachment
Peeling of paint
Water penetration;
rising damp
Surface change
Deposit graffiti
Act of vandalism or
art
Detachment
Loss of adhesion
Salt crystallization

West

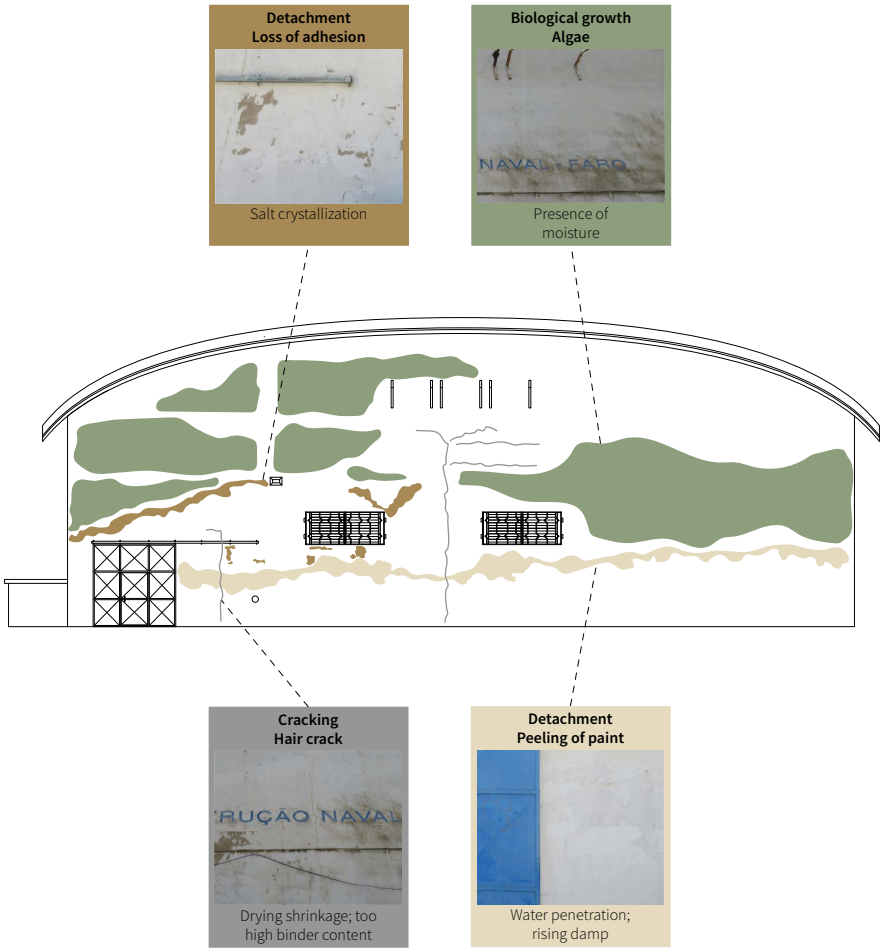

Detachment
Peeling of paint
Water penetration;
rising damp
Surface change
Deposit graffiti
Act of vandalism or
art
Detachment
Loss of adhesion
Salt crystallization

North

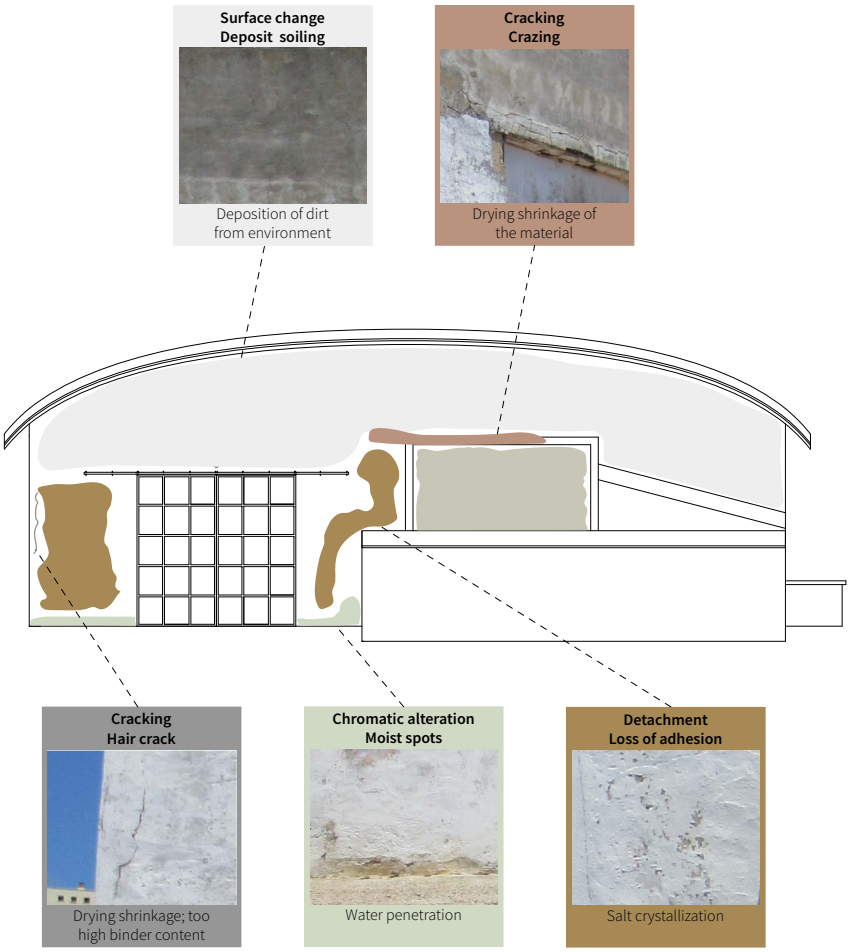

Biological growth
Algae
Presence of moisture
Detachment
Peeling of paint
Water penetration; rising damp
Surface change
Deposit graffiti
Act of vandalism or art
Detachment
Loss of adhesion
Salt crystallization

South

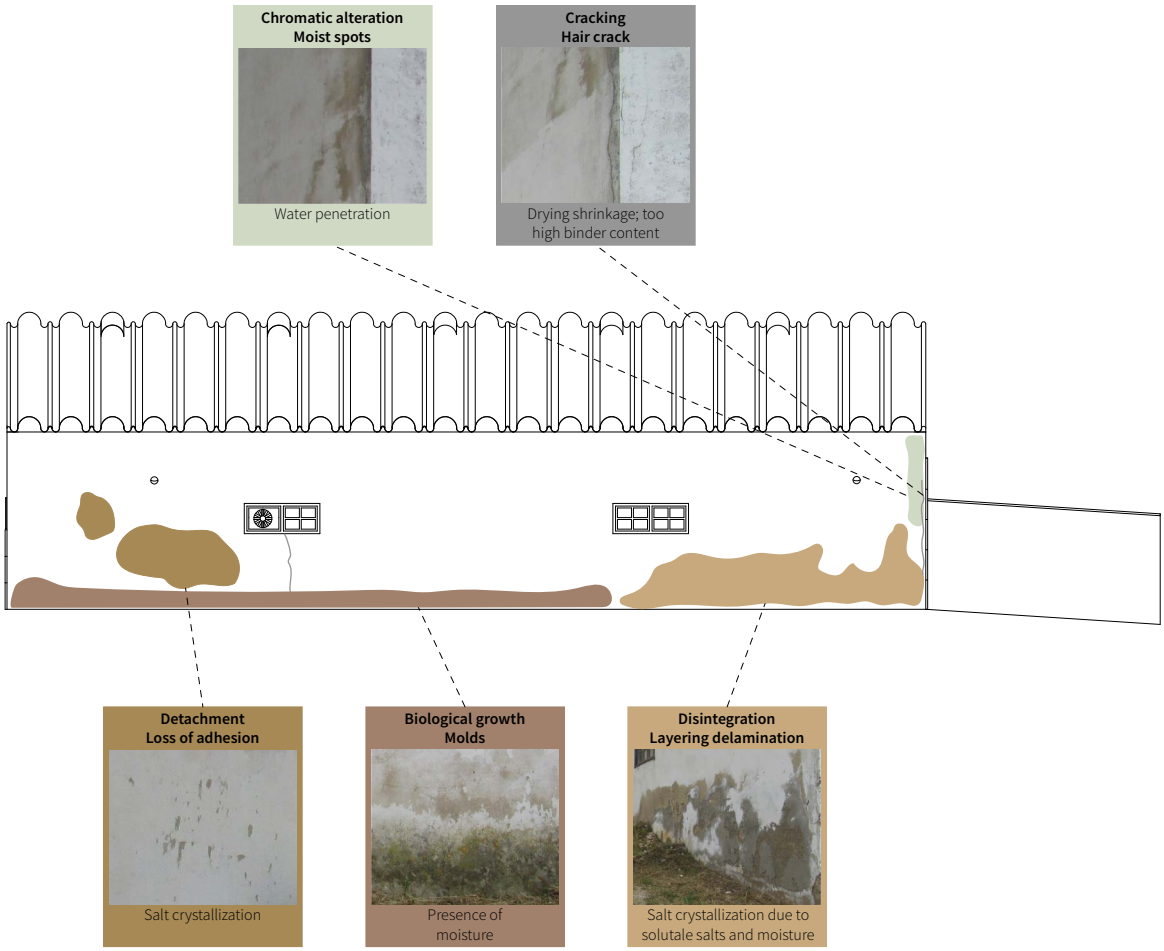
Building damage inventory - building 2



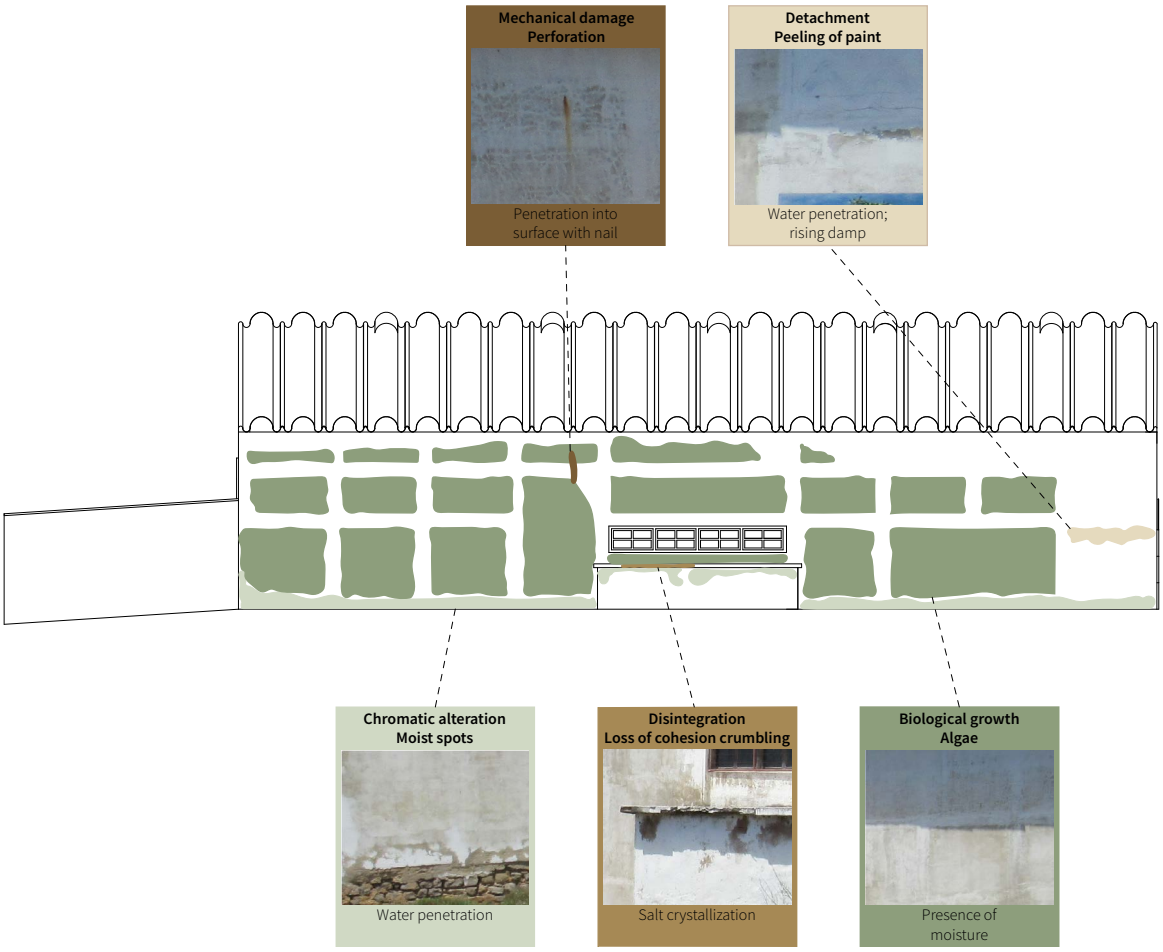
East


Surface change
Deposit soiling
Deposition of dirt from environment
Cracking
Crazing
Drying shrinkage of the material
Cracking
Hair crack
Drying shrinkage; too high binder content
Chromatic alteration
Moist spots
Water penetration
Detachment
Loss of adhesion
Salt crystallization

West


Chromatic alteration
Moist spots
Water penetration
Cracking
Hair crack
Drying shrinkage; too high binder content
Detachment
Loss of adhesion
Salt crystallization
Biological growth
Molds
Presence of moisture
Disintegration
Layering delamination
Salt crystallization due to solutale salts and moisture

North


Mechanical damage
Perforation
Penetration into surface with nail
Detachment
Peeling of paint
Water penetration; rising damp
Chromatic alteration
Moist spots
Water penetration
Disintegration
Loss of cohesion crumbling
Salt crystallization
Biological growth
Algae
Presence of moisture

South

2.2.5 Current biodiversity on site

The buildings are adjacent to the Ria Formosa, which is officially selected as Natural Park in 1987 [6]. It is a lagoon that is protected from the direct ocean by barrier islands. The coastal lagoons consist mainly of salt marshes, sandy islands, tidal flats, and tidal channels. These unique circumstances made the area an important breeding and migrating ground for different bird species and a feeding soil for other flora and fauna. As a result, the Ria Formosa is protected on international level by the Wetlands of International Importance Convention and the Birds and Habitats Directive, also known as the Natura 2000 Network. [6]

The coastal lagoon, which the buildings are facing directly, is a shallow meso-tidal lagoon, which means an extensive intertidal area with tides varying between 1 to 3.5 meters. Characteristics of this area are highly developed reedbeds and sumptuous submerged vegetation on the salt marshes. [7] The site contains different environmental units determined by the Ria Formosa Natural Park, like tidal flats, salt marshes, hoods, and sand dunes. [8] Each unit will be further described with the associated flora and fauna.

Tidal flats

Hoods and sand dunes

Salt marshes

Figure 11: Different environmental units

Tidal flats - flora

The tidal flats are the connection between the salt marshes and tidal channels and consist of silt clay and muddy sand and are mostly covered by seagrass (Zostera Noltii). Also small cord-grass (Spartina maritima) and Salicornia nitens appear at the low-level areas of the tidal flats. [8]

Seagrass (Zostera Noltii)

Small cord-grass (Spartina maritima)

Salicornia nitens

Salt marshes - flora

The salt marshes are above the tidal flats and consist of silt clay sediments, making this area a high nursery place for many flora and fauna. Due to the tidal movement of the sea, plants are covered and uncovered variously with salt water.] The vegetation contains a large number of Artemisia campestris, Suaede maritima , Arthrocnemum perenne, Juncus spp, and Atriplex.[8] Based on the Natura 2000 data, Limonium algarvense and cistanche phelypaea are endangered species. [9]

Limonium algarvense

Cistanche phelypaea

Artemisia campestris

Suaeda maritima

Arthrocnemum perenne

Juncus spp.

Atriplex

Hoods and sand dunes - flora

In this area, a mixture of the environmental characteristics of hoods and sand dunes emerges. Close to the shore, typical hood flora emerges with great floristic richness. Two species that are endangered and only exist in the Algarve are Cistus libanotis and Tuberaria major. There are also plants that aromatic and can be used for medicines like Thymys lotocephalus, Thymo lotocephali, Stauracanthetum boivinni Stauracanthetum boivinni, Lavandula pedunculata lusitanica, and Coridothymetum capitati. [8]

Limonium algarvense

Tuberaria major

Thymus lotocephalus

Thymo lotocephali

Stauracanthetum boivinni

Lavandula pedunculata

Coridothymetum capitati

Hoods and sand dunes - flora

Greater vegetation is also possible on the hoods of the Ria Formosa Natural Park, but does not occur on the site plot around the buildings. Trees like the Pinus pinaster and the Pinus pinea are present, and original Mediterranean trees like the Quercus suber and the Olea europea sylvestris. [8]

Pinus pinaster

Pinus pinea

Quercus suber

Olea europea sylvestris

Hoods and sand dunes - flora

Because the hoods are also party covered with sand, sand dunes species also occur at the site. Marram grasses like Elymys farctus and Ammophila arenaria. Furthermore, Calystegia soldanella, Eryngium maritimum, Crucianella maritima. Two species that are endangered and also occur in the Algarve region are Hypecoum procumbens and Pychnocomon rutifolium. [8]

Elymys farctus

Ammophila arenaria

Calystegia soldanella

Eryngium maritimum

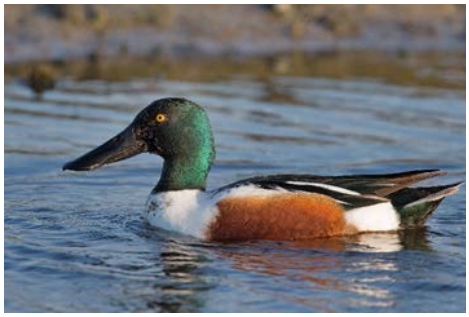
Crucianella maritima

Hypecoum procumbens

Pycnocomon rutifolium

Fauna

For the fauna in the Ria Formosa, this research will be limited to birds and reptiles. Birds are the most crucial attraction of the site, and because of the position of the Algarve, it is an important place for migrating birds. Wintering species are the Anas clypeata, Anas Penelope, Anas crecca, Aythya ferina, and the Phalacrocorax carbo. Important colonies of the following species are also seen in the park: Charadrius alexandrinus, Pluvialis squatarola, Limosa lapponica, Recurvirostra avosetta, Himantopus himantopus, Calidris minuta, Calidris canutus, and Ardea Cinerea. The Porphyrio porphyrio, Sterna albifrons, Ciconia ciconia, and Phoenicopterus rubber are endangered species. One reptile species is highlighted in this research, namely the Chamaeleo. It is a specie that threaten extinction and only occurs in the Algarve within Portugal.



Anas clypeata

Anas Penelop

Anas crecca

Aythya ferina

Phalacrocorax carbo

Charadrius alexandrinus

Pluvialis squatarola

Limosa lapponica

Pycnocomon rutifolium

Calidris minuta

Himantopus himantopus

Calidris canutus

Porphyrio porphyrio

Ciconia ciconia

Ardea cinerea

Phoenicopterus rubber

Sterna albifrons

Chameleon

2.3 Design process

The design process is divided into three phases: the group cultural significance paper, the values-based design, and the impact assessment.

The design strategy started with the group cultural significance paper, in which four participatory methods were developed to explore each stakeholder's values and attributes. The results of each method were coded in the same way to ensure that they could be compared with each other. Since the younger generation is the focus in the subsequent two phases, this stakeholder's most important values and attributes were derived from the research and used as a base for the next phases.

The second chapter is about the values-based design. Semi-parallel to the cultural significance paper, the analysis concerning the location, building condition, building damage inventory, and the biodiversity on site was conducted. This analysis formed the base of the redesign and was further developed throughout the end of this project. Again, the essential values and attributes were further examined, and the propositions for the redesign were created. In combination with the nature-inclusive design guidelines and the socio-cultural aspects of the community, the design guidelines were formulated to form the design proposal.

The last chapter is the impact assessment, in which the design proposal is critically evaluated with the relationship between values, attributes, functions, and levels of intervention. If contradictions were encountered in the redesign proposals, they would be revealed by doing this analysis. Then, either the value, attribute, or intervention will be integrated better, or the position will be explained why a certain dilemma is solved this particular way in the redesign.

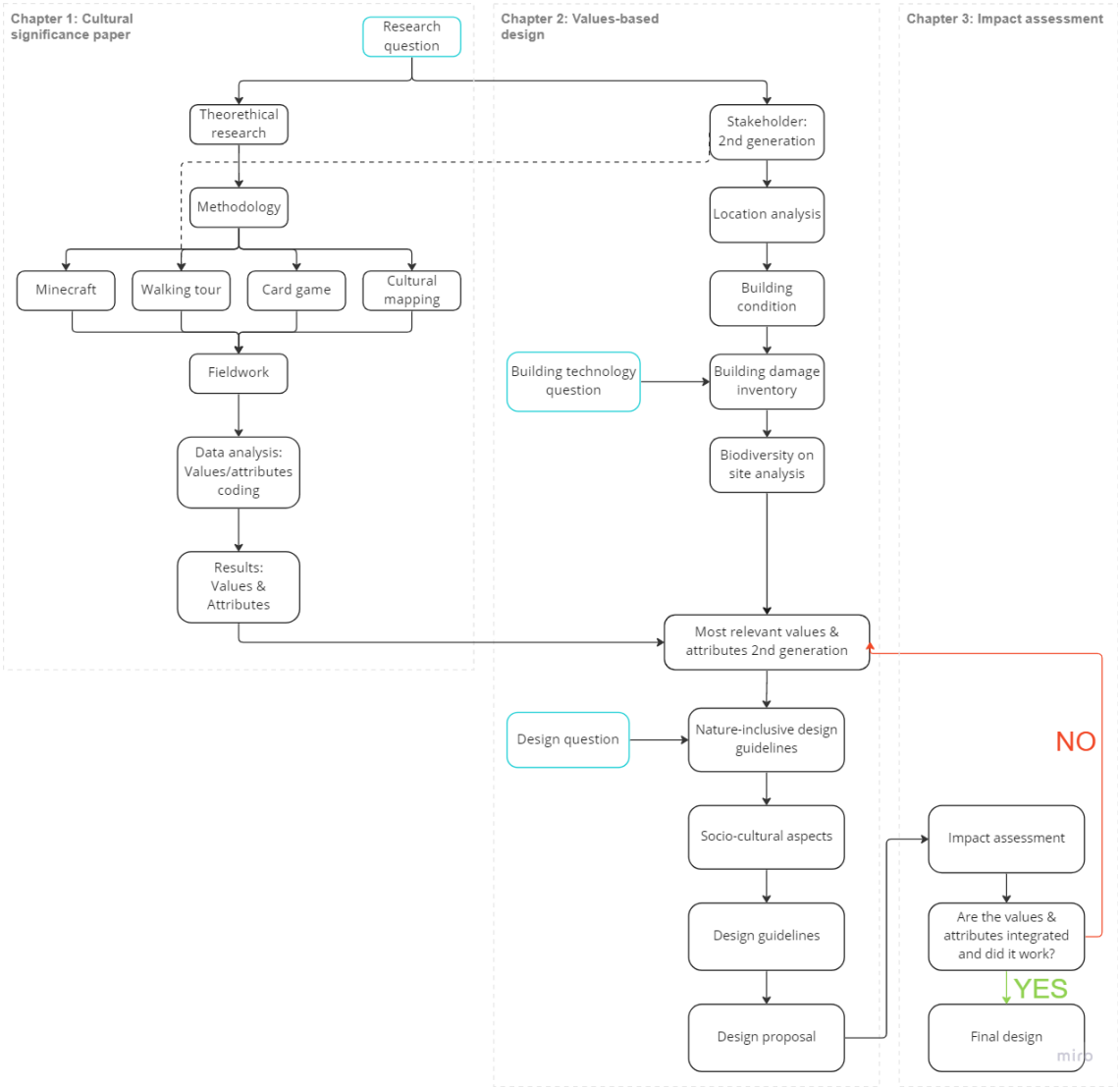


Figure 12: Diagram of design process

2.4 Design strategy

2.4.1 Values

The values chart (figure 14) shows the most frequent value types for the 2nd generation in terms of emotional attachment to the natural elements in Estação derived from the group cultural significance paper. For this individual part of the research, each value type is further defined into positive and negative valuations (figure 13).
The economic use and non-use secondary value type indicates that the younger generation sees the potential of the buildings in the area. The social spiritual and emotional values suggest a certain level of emotional attachment to the neighborhood. From the positive ecological values can be derived that they are aware of the nature around them and that they see the beauty of it (aesthetical conceptual value).
The negative valuation charts are relatively higher than the positive, meaning the people are unsatisfied with the area's current state. The social spiritual and emotional secondary value types indicate an unsafe and abandoned area. In addition, from the economic use and non-use secondary value type can be derived that the accessibility of many of areas is insufficient. Finally, the ecological values indicate a lack of maintenance of the current nature.

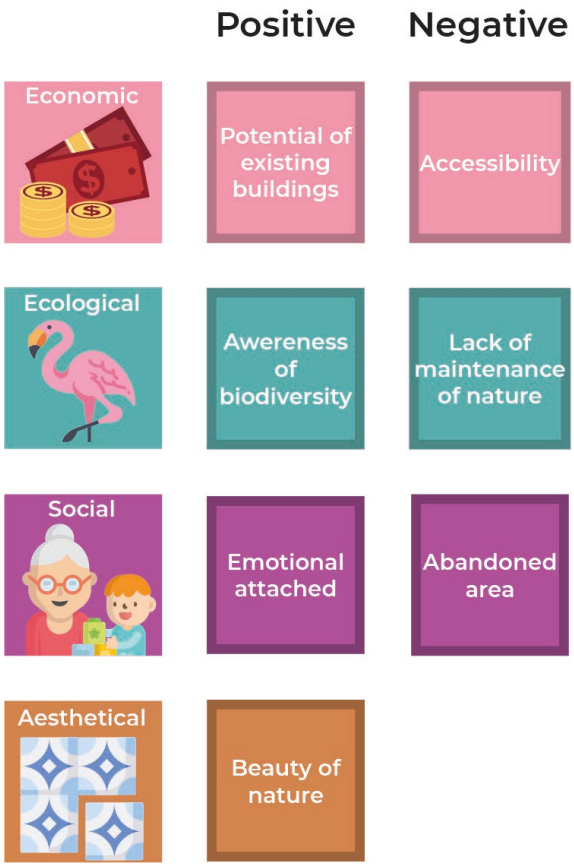


Figure 13: Values divided by positive and negative

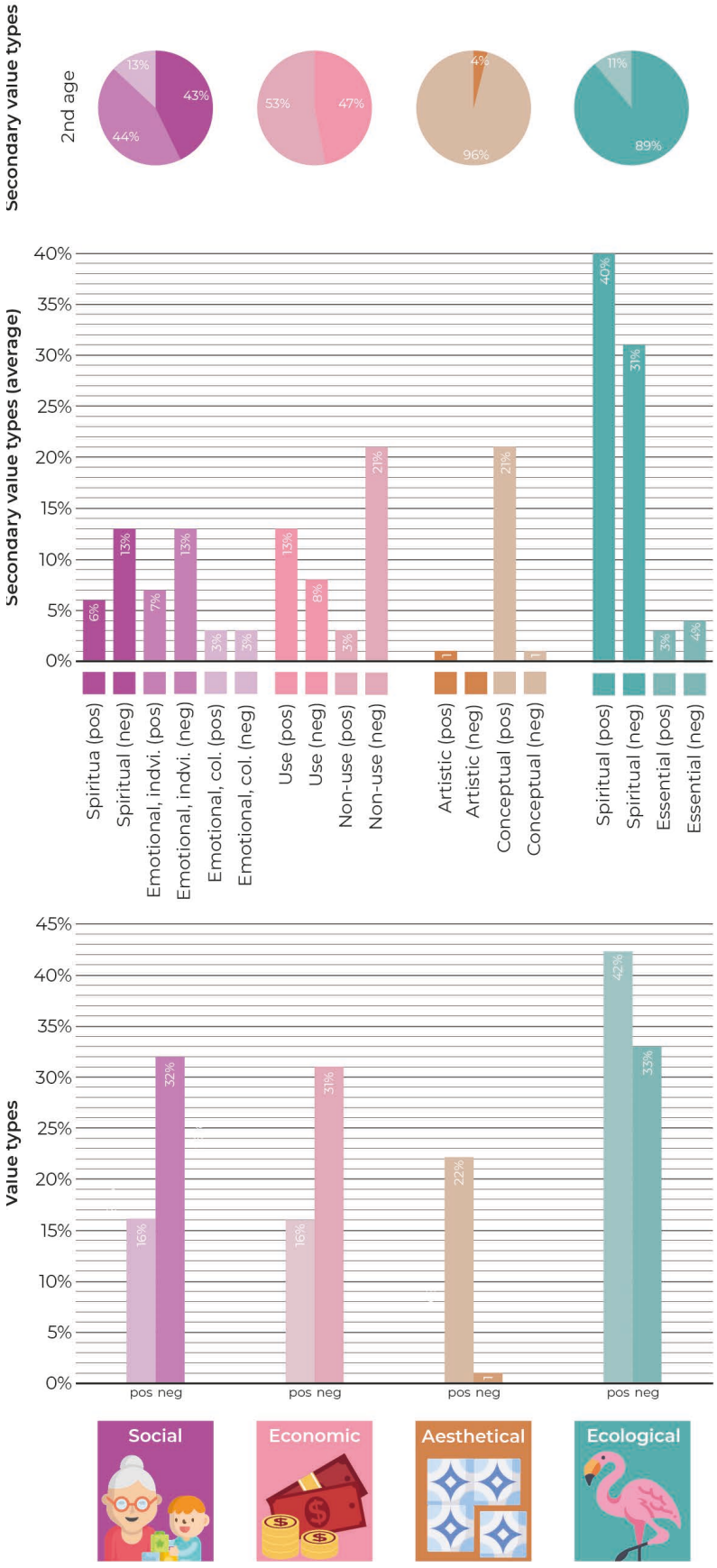


Figure 14: Values chart

2.4.2 Attributes

Figure 15 shows the attributes related to the positive emotional attachment of the 2nd generation. Level 1 shows that they are more engaged with tangible attributes than with intangible attributes. Level 2 shows the most relevant attributes from most frequent to less frequent: Asset, relation, social, and area. These attributes types are further divided into level 3 attributes in which use, character, area, natural element, urban element, building, and building element are most mentioned. Finally, figure 16 is shows the level 4 division of the attributes with a more specific explanation of each attribute type.

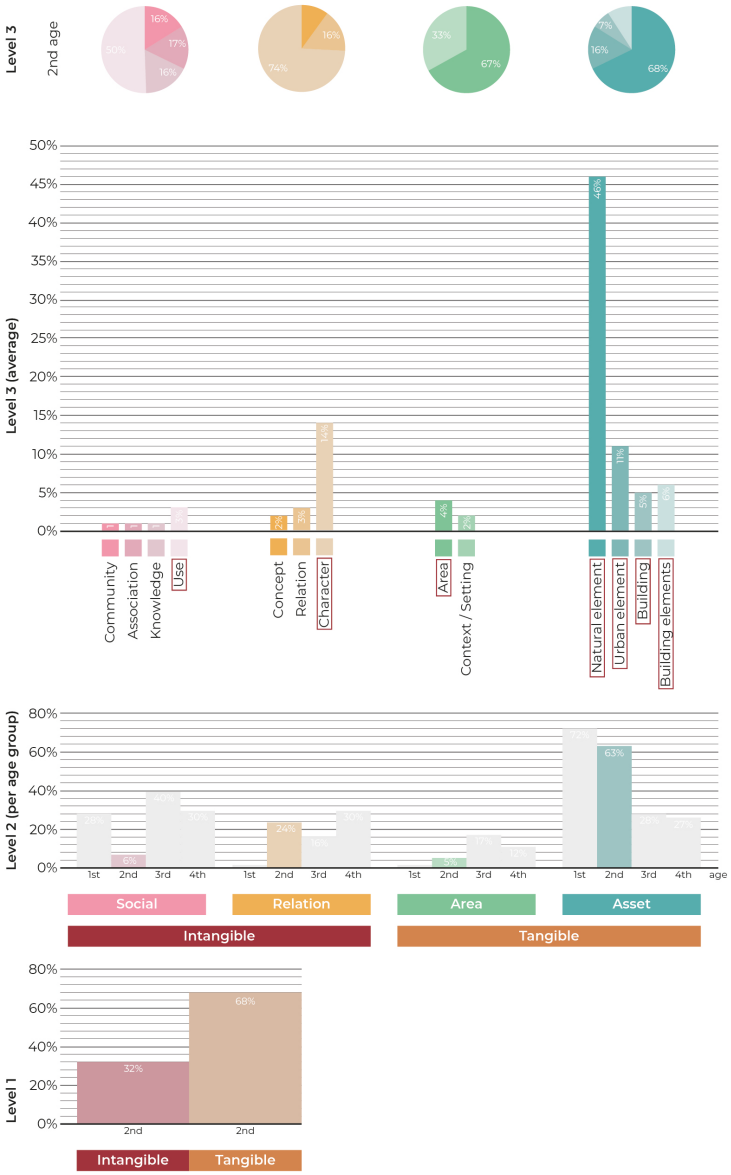


Figure 15: Attribute chart

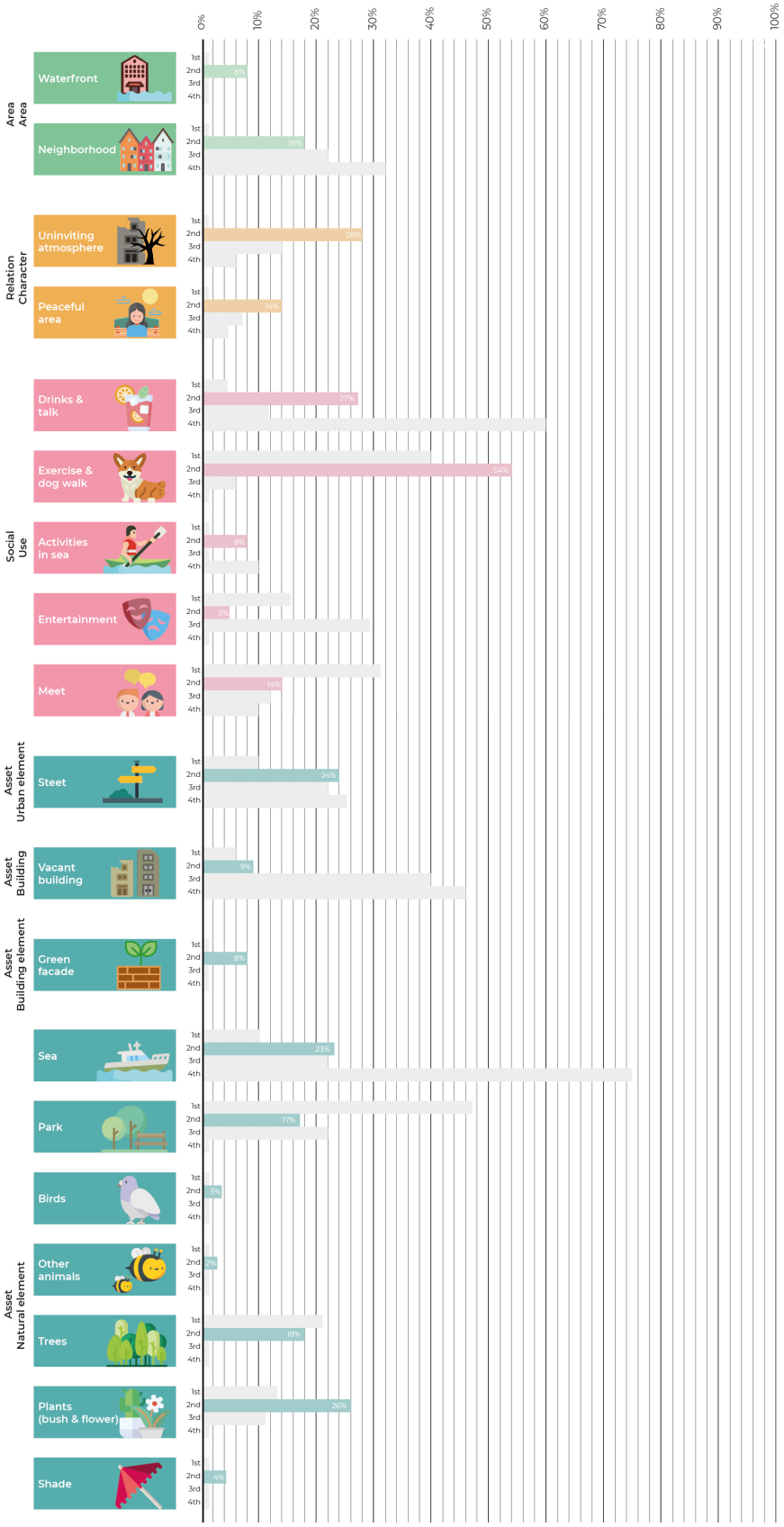


Figure 16: Level 4 attributes

2.4.3 Intervention matrix

This intervention matrix shows the level of intervention needed to integrate each value and attribute in the redesign. The value types are plotted vertically, and each colour represents a different value. Likewise, the attributes are plotted horizontally on the matrix, and each colour refers to a different attribute type. The boxes with a gradient of grey indicate the level of intervention needed to integrate each value and attribute in the redesign. For example: in order to raise awareness for biodiversity (ecological value), a green facade (asset attribute) needs to be added (dark grey) to the redesign. Some of the boxes are colour with two gradients of grey; this indicates two levels of interventions.

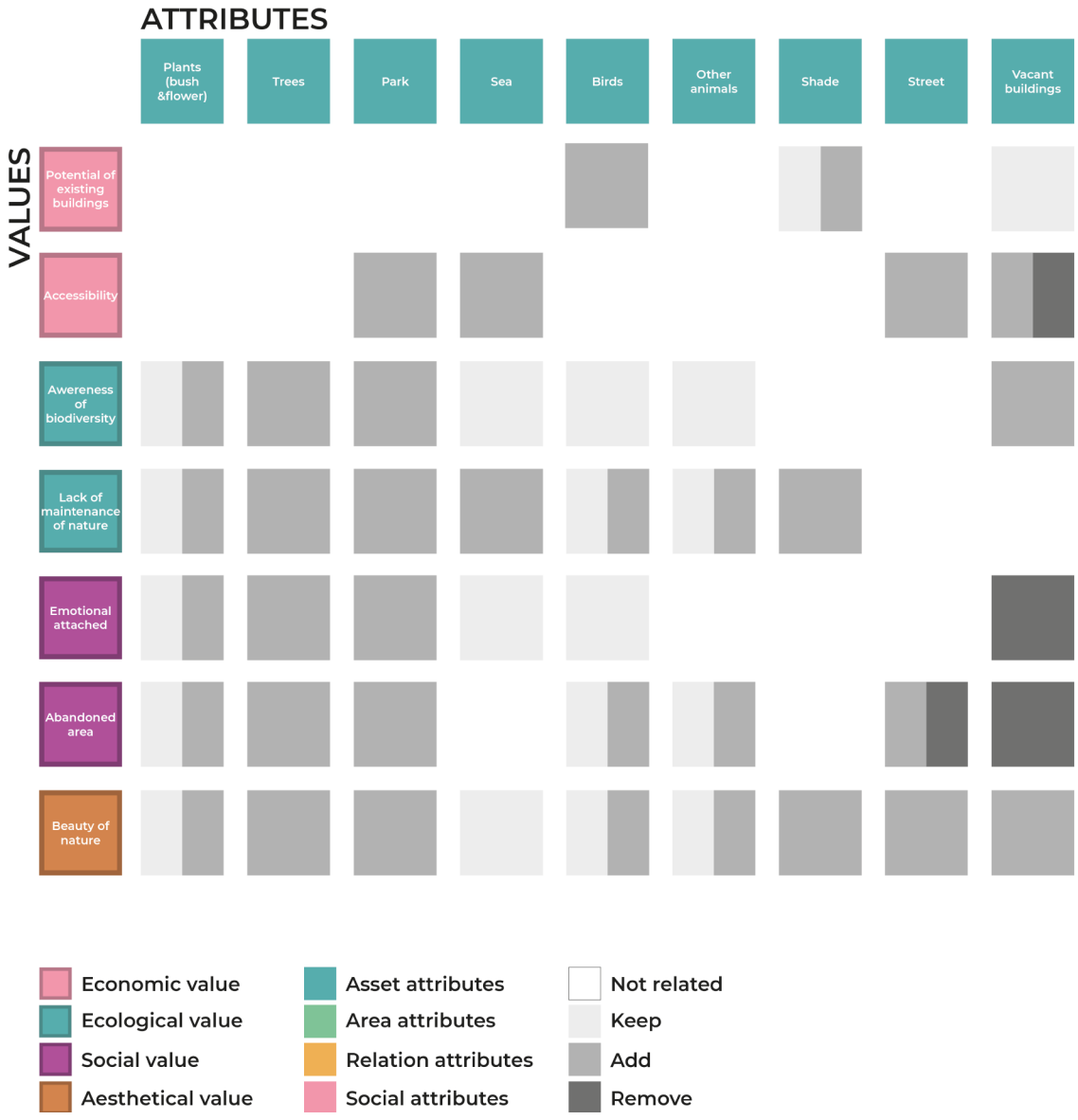


Figure 17: Intervention matrix


Green facade
Neighbor-hood
Waterfront
Uninviting atmosphere
Peaceful area
Drinks & talk
Activities in sea
Meet
Entertain-ment
Exercise & dog walk

2.4.4 Functions

The redesign will aim to attract young people to the waterfront and stimulate them to use this high-potential area. The growing aging population in Estação makes this group of stakeholders vital for a sustainable future for the neighborhood. This purpose can be divided into two aspects; first, the importance of making the neighborhood vibrant again by promoting areas for the younger generations to stimulate the economy in the area. Second reduce the large vacancy by redesigning two vacant buildings at the high-potential waterfront. This can eventually cause a catalyst for more urban development.

The functions of the plot will be a mixture of leisure and work activities. Building one will be more focused on work activities and will contain flexible offices spaces that students or young professionals can use. It also contains studio spaces for creative jobs and activities. Building 2 will function as the leisure part of the plot, including a restaurant, a coffeebar and a place where people can rent equipment for SUP on the Ria Formosa. It will also contain an exhibition area where people working on their creations in buildings 1 can expose.

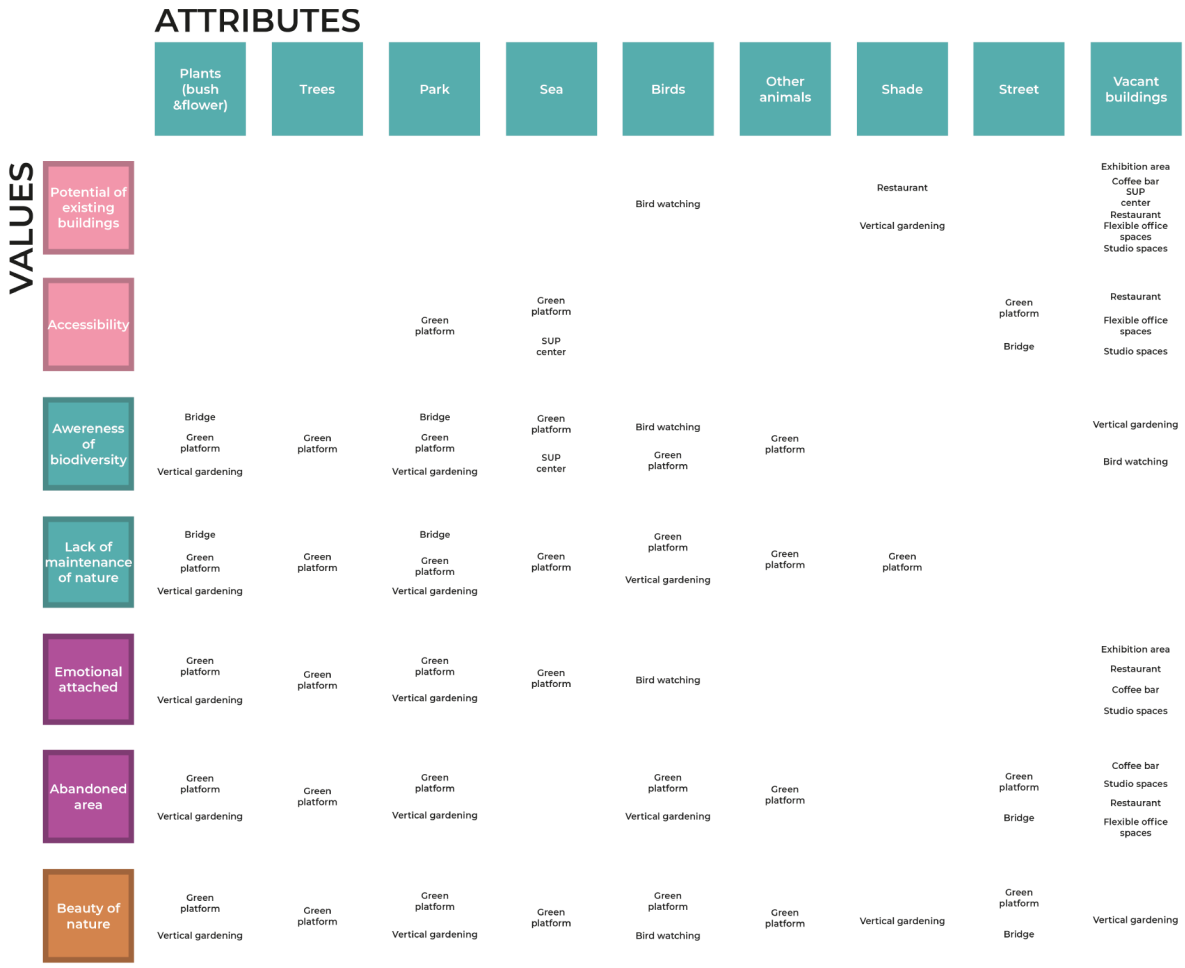


Figure 18: Function matrix

In addition, the Ria Formosa will function as the connection between the building and the people using it. Because the emotional attachment towards the natural park is considered significant, the redesign will restore the plot's ecological potential. By creating a nature-inclusive redesign, they will be facing nature and stimulating their awareness and eventually their desire to use the place. This will be done by creating a green platform between the two buildings, where people can meet, surrounded by all flora and fauna that the Ria Formosa includes. This will increase their level of awareness towards nature. The bird-watching center on the second floor of building 2 and the vertical gardening will also contribute to this purpose.

The function matrix (figure 18) is showing the connections between the different values and attributes related to each specific function.

Green facade	Neighbor-hood	Waterfront	Uninviting atmosphere	Peaceful area	Drinks & talk	Activities in sea	Meet	Entertain-ment	Exercise & dog walk
Vertical gardening	Studio spaces Exhibition area Flexible office spaces		Restaurant Flexible office spaces Exhibition area Coffee bar Green platform Studio spaces	Green platform Bird watching SUP center	Restaurant Coffee bar		Exhibition area Green platform Flexible office spaces Restaurant Studio spaces Coffee bar	Exhibition area SUP center	
	Green platform Flexible office spaces Vertical gardening Studio spaces	Green platform Bridge	Green platform Bridge	Green platform	Restaurant Coffee bar	SUP center	Green platform Bridge		Green platform Bridge
Vertical gardening	Vertical gardening Exhibition area Green platform Bird watching	Green platform SUP center		Green platform		SUP center		SUP center Bird watching	Green platform
Vertical gardening	Green platform Bridge	Green platform	Green platform	Green platform		SUP center			
	Green platform Bridge	Green platform		Green platform	Restaurant Coffee bar	SUP center	Coffee bar Green platform	Exhibition area	Green platform
Vertical gardening	Flexible office spaces Green platform Exhibition area Bridge	Green platform	Flexible office spaces Exhibition area Coffee bar Green platform Bridge	Green platform	Restaurant Coffee bar	SUP center	Flexible office spaces Coffee bar Exhibition area Green platform Restaurant Studio spaces	Exhibition area SUP center Bird watching	Green platform
Vertical gardening	Green platform Bridge Exhibition area	Green platform	Green platform	Green platform		SUP center	Green platform	Exhibition area	Green platform

2.4.5 Nature-inclusive design guidelines

The design strategy derived from the values and attributes will be to restore the ecological potential of the area by making the design nature-inclusive and eventually enhancing the emotional attachment of the younger generation in this area. The focus will be on making users of the buildings more aware of the natural elements by incorporating them into the design.

The theoretical background and guidelines for nature-inclusive designing are derived from the book ***Making Urban Nature*** by Jacques Vink, Piet Vollaard, and Niels de Zwarte. They formulate nature-inclusive design as follows: " Such an attitude, in which nature is not regarded as a separate (design) issue, but instead as an integral part of the whole of functions and adaptations that are to be realized, is called nature-inclusive design." [10, p. 49]. Thus, the key to designing nature-inclusive is to be aware of the ecological system in which it will be built and use this as a starting point. In this way, more plant and animal species can benefit from the circumstances and eventually the area will be more attractive for people and nature. [10]

Also obtained from the book are four design guidelines that will be implemented in the redesign. In the following, each design guideline will be explained shortly and followed by the specific approach implemented in the redesign.

Design a process: creating the right conditions
Designing nature-inclusive is not about planting specific greenery at a created park but about observing the current ecosystem and creating the right living conditions for species. Also, nature can not be planned completely in advance; it follows a natural process. [10] To embed this guideline in the redesign, the approach will be to affect the natural conditions around the site as minimally as possible to let the local species restore their ecosystem. This will be achieved by creating a raised platform and walkway, allowing the greenery to grow underneath this surface. In addition, plant boxes will be planted with local species to enhance the current ecosystem. Local pine trees and holm oak will also be restored in the area to create the right habitat for the Chameleon. [11]

Make complex and diverse designs: complexity and diversity
The resilience of nature will be supported by designing complex and diverse areas. In order to do so, the intergration of different species in the design will benefit the ecological system. [10] The redesign will create zones in which different species will be planted intertwined. Five plant boxes will be created with a mixture of vegetation based on the existing species around the plot. Also, an area will be assigned for planting trees that were originally growing on the hoods.

Design with nature, not against: elaborate further on the current situation.
The main approach is to design along with nature and to elabored further on the ecological system that is already there. Especially do not erase the current situation to start with a blank page. Instead, analyze the system and see how a connection can be made with what is already there. [10] This design guideline will be incorporated into the design by first making an elaborate study of the current ecosystem. This analysis may then be used to decide which flora and fauna will be implemented in the design.

For example, the analysis showed that the Chameleon was one of the species listed as threatened in the Algarve region. Manly, the problem for this decline is the loss of habitat on the shoreline of the coastal areas. Therefore, in order to support this species, specific trees will be planted to ensure new habitat for the reptile.

Design the management: role of residents

In order to make a succeed of the design and ensure the management of the ecological measures, the role of residents can play a crucial role. [10] Involving the people who are using the building to manage the nature-inclusive design, can also support the awareness of the biodiversity of the area. The redesign will interpret this guideline by creating a place for vertical gardening. Here, residents of Estaçao who are using the building can grow their plants. In this way, their ecological awareness will be enhanced. To eleborate further on this awareness, several places in the redesign will be designated to enjoy the ecological system by which the buildings are surrounded. Particular seating areas will be designed to take the time to capture the beauty of nature. People can use the raised walkway throughout the site to enjoy nature while walking. In addition, the bird-spotting area and the SUP tours in the Ria Formosa will also face people directly with the ecosystem to raise their ecological awareness.

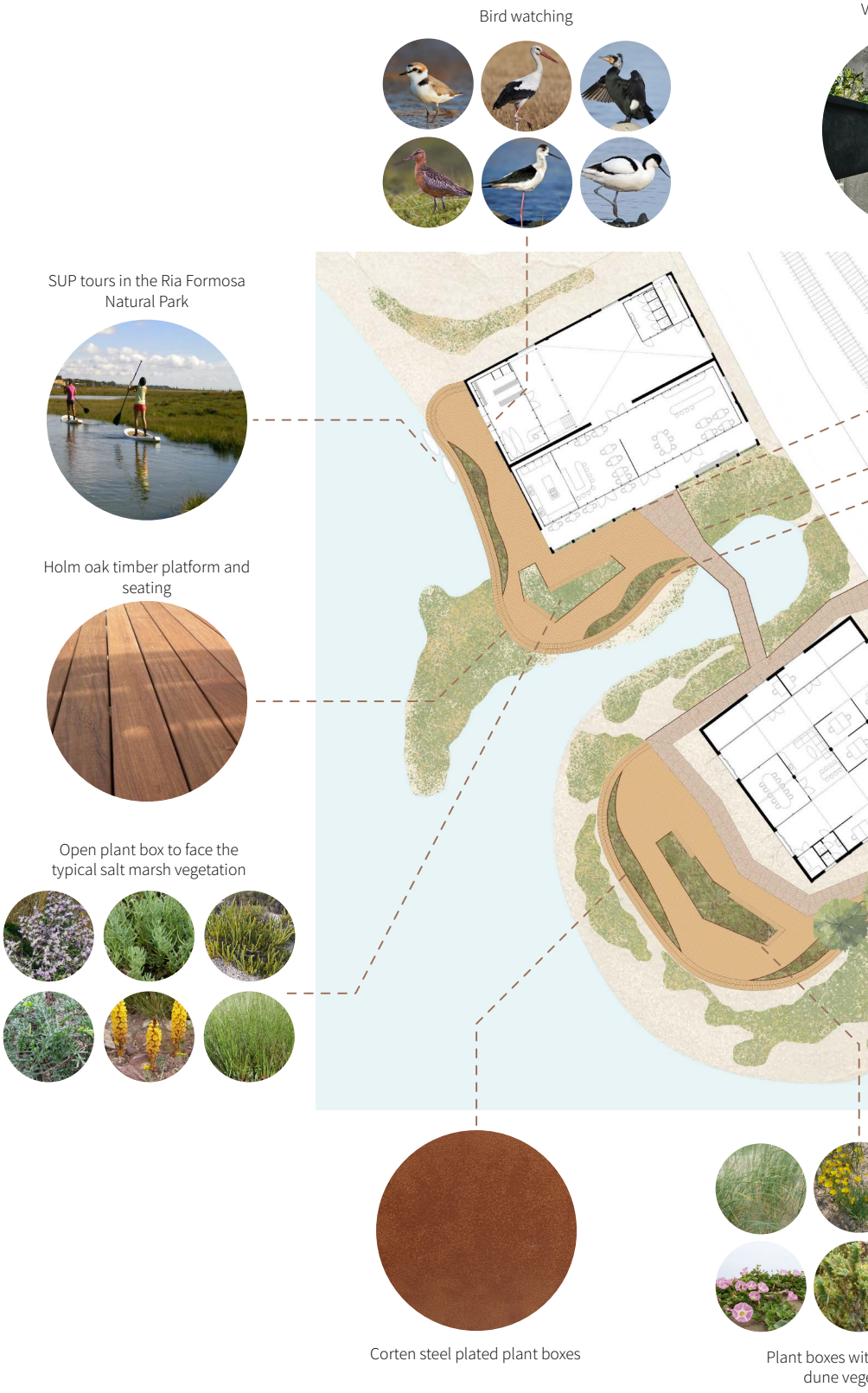
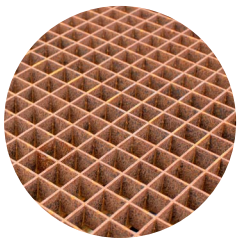


Figure 19: Implementation of the nature-inclusive design guidelines

Vertical gardening

Corten steel grating raised walkway
with non-slippery surface



Plant box with semi-natural
herbaceous planting

Planted Holm oak (Quercus Suber)

Habitat of the Cameleon

th local sand
etation

Planted Stone pine (Pinus pinea)

2.4.6 Flexible office spaces

Building 1 is designed with a flexible office space typology. This means the space can be transformed to the specific needs of the users. Figure 20 shows a configuration where individual working areas are created. Each cabin will have at least one panel to ensure privacy but is also still semi-open to the rest of the office area. Users can also choose to completely close their cabin, for example, if a call needs to be made or an online meeting. Figure 21 is shows a group meeting configuration. Here, the designated area for the break is converted into a meeting area. Again, the area can completely be closed off to ensure privacy.

The moveable panels are made of a wooden grid filled with semi-translucent polycarbonate panels. Wooden beams are placed between the existing wooden trusses to create a grid where the panels can be moved. The top of the panels is fixed with sliders to the beams, and the bottom is equipped with three wheels to ensure they can be moved easily.

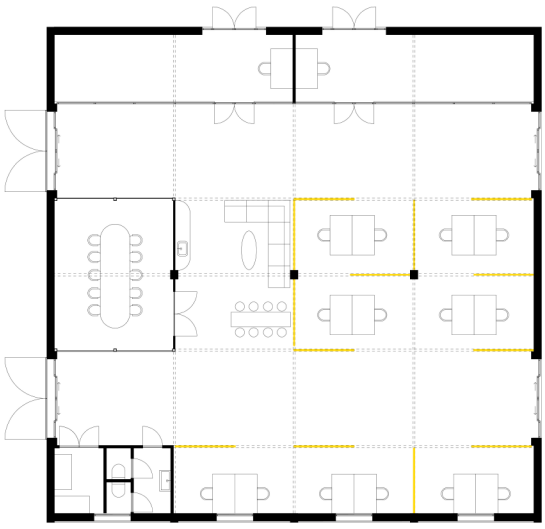


Figure 20: Individual working

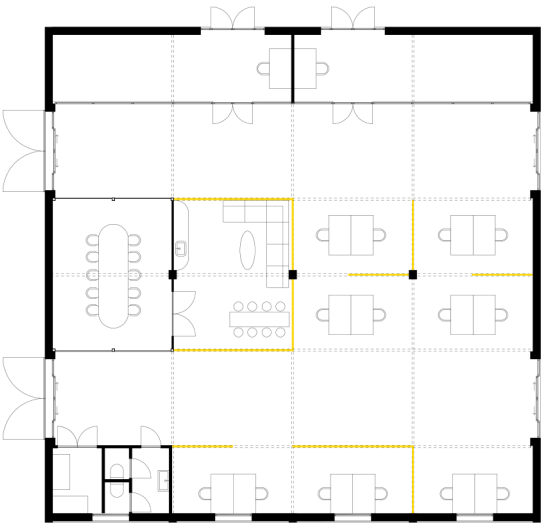


Figure 21: Group meeting

Figure 22: Visualisation flexible office spaces

2.4.7 Box-in-Box principles

For building 2 the box-inobox principle is used to create the right conditions for climate with affecting the original buildings as minimallly as possible. In this way, not the whole building needs to conditioned or insulated, which results in lower costs and sustainability profits. The architectural approach is to emphasize the difference between the box and the original building through differences in materials and leaving space between the two volumes. The boxes consist of a maritime pine wood construction with a grid of 1000 mm and floor-to-floor window and door frames. To create unity between the two parts of the building, all three boxes follow the same typology. In addition, the two smaller boxes have the same width also to create unity.

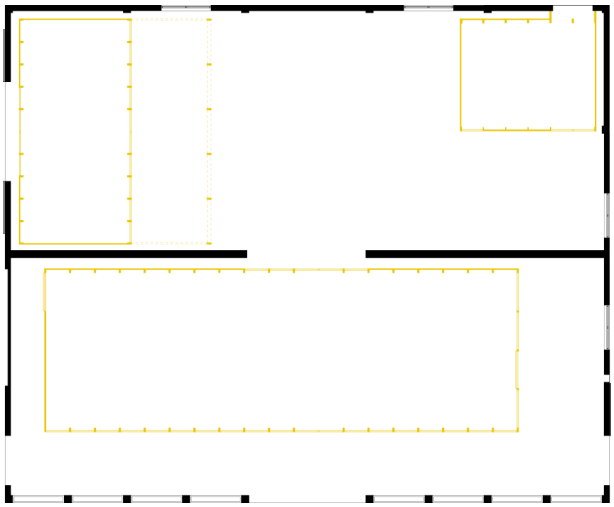


Figure 23: Box-in-box configuration

Figure 24: Visualisation box-in-box principle

2.4.8 Demolish/built

In order to make to building suitable for the new use, parts of the building will be demolished. The primary approach is to affect the building as minimally as possible but also create the desired flexible floorplan of the office spaces. From that perspective, the main intervention is to demolish the concrete wall that is separating the two buildings in order to create an open floorplan. Another intervention is to demolish the concrete walls of the two spaces on the top of the building, because they are also interfering with the desired floorplan and are not contributing to the main characteristics of the building. From the exterior perspective, four windows will be placed to ensure enough daylight. The windows will be placed symmetrical to match the original building appearance. On the north façade, two large doors will be built to connect the creative studio spaces with the green platform and the other building. Here symmmetery also plays a role in making the intervention fit in the building.

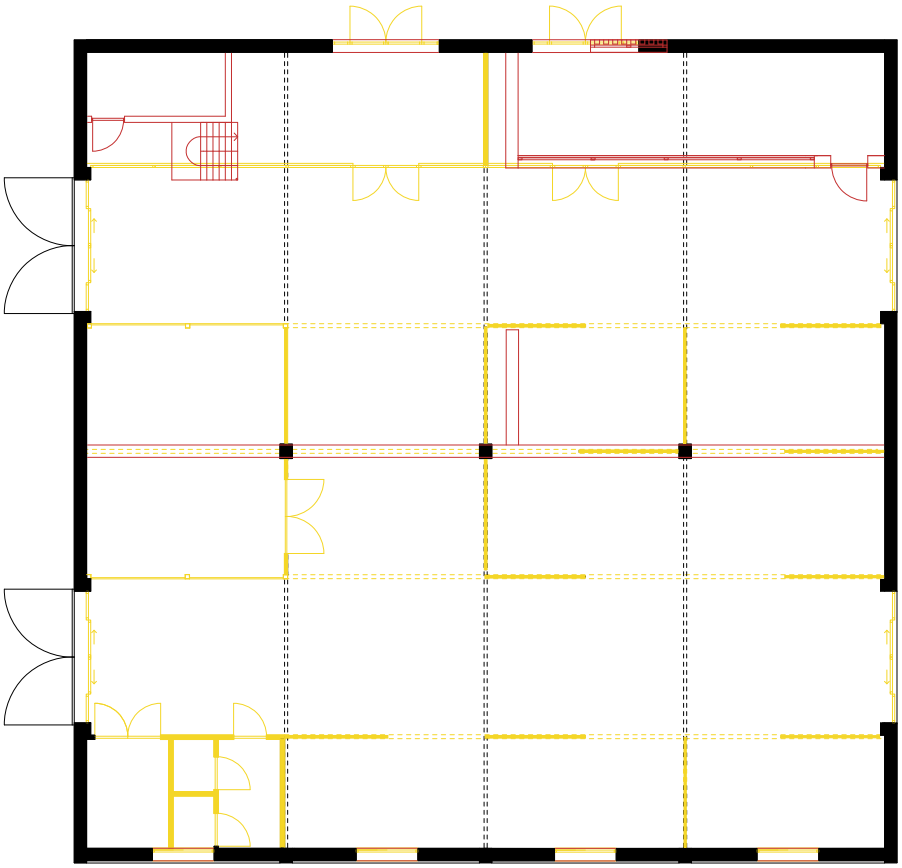


Figure 25: Building 1. Demolished: red // Built: yellow

For building 2 the main approach is again to affect the building as minimally as possible and therefore, the box-in-box is chosen for this building. This means that three climatised boxes will be placed inside the building containing the desired program. In this way, the building can keep its original industrial appearance, because no interventions will be needed for insulation and other climate solutions. The major demolishments are located on the south façade to create more daylight and make the building more nature-inclusive. Here, the façade fillings of the horizontally perforated bricks will be removed to create space for greenery. The two annexes will also be demolished because of the poor state of conservation and the minimal contribution to the overal characteristics of the building.

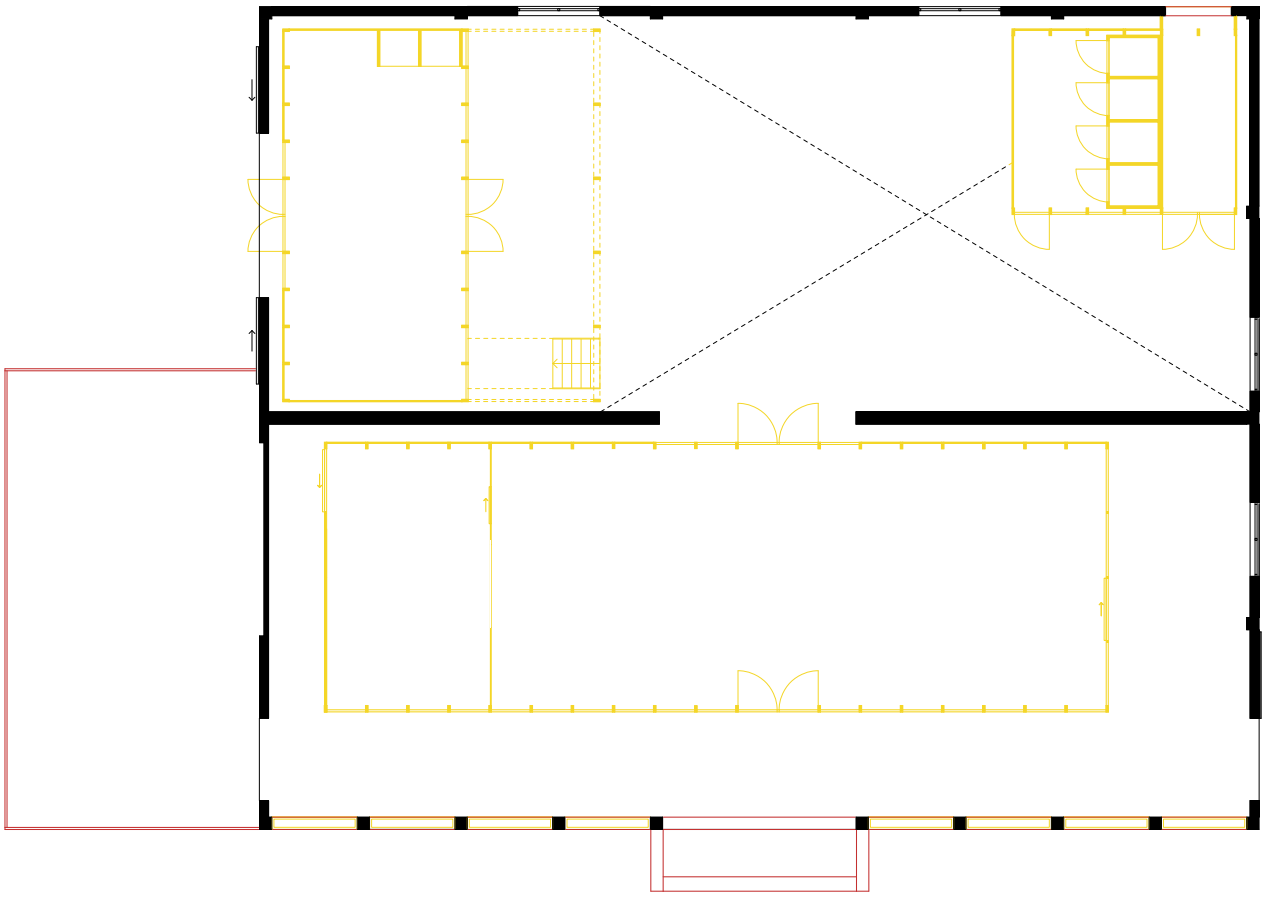


Figure 26: Building 2. Demolished: red // Built: yellow

2.5 Design proposal

2.5.1 Drawings

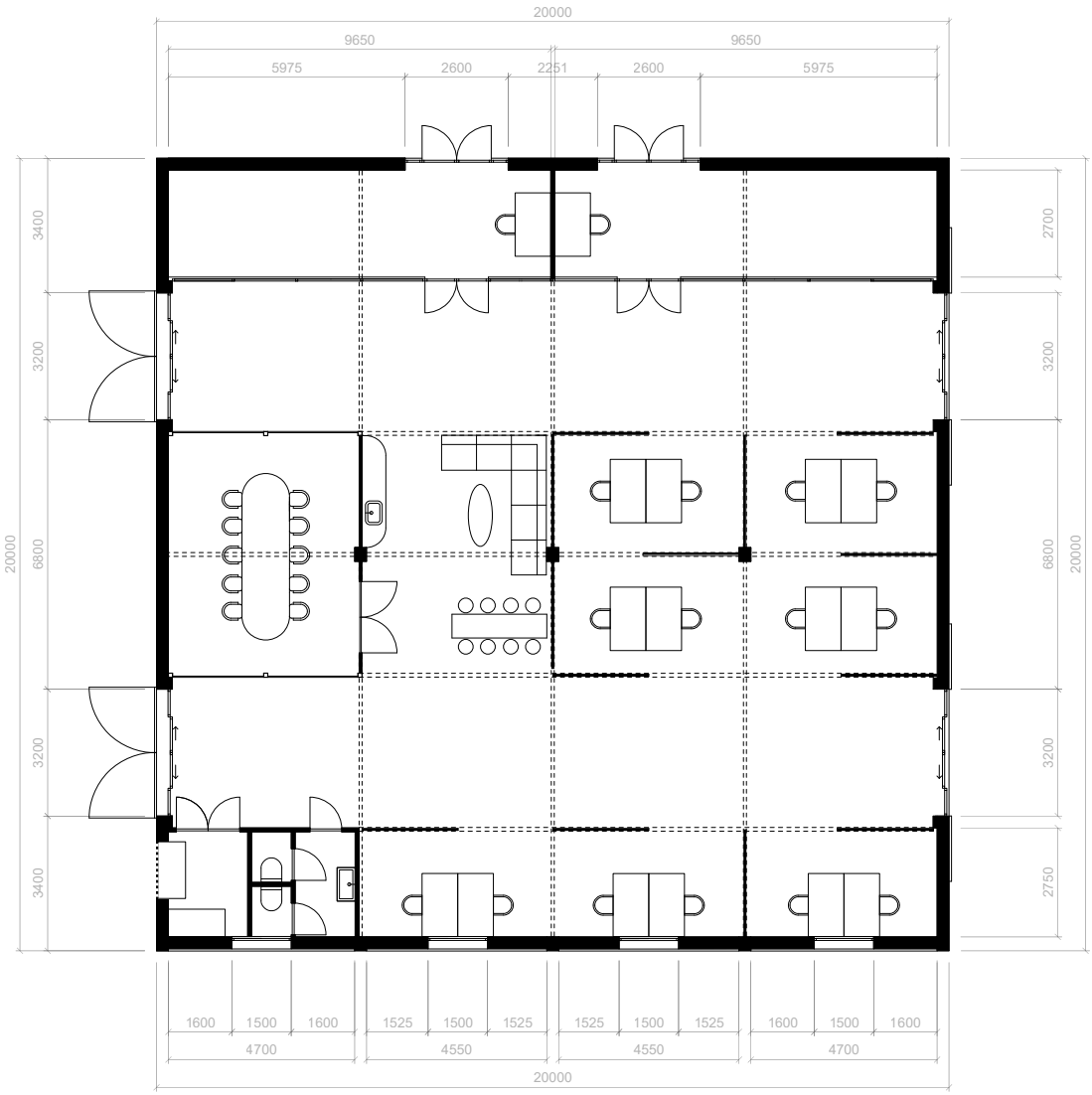


Figure 27: Building 1 ground floor 1:100

Figure 28: Building 1 sections 1:100

Figure 29: Building 1 section 1:20

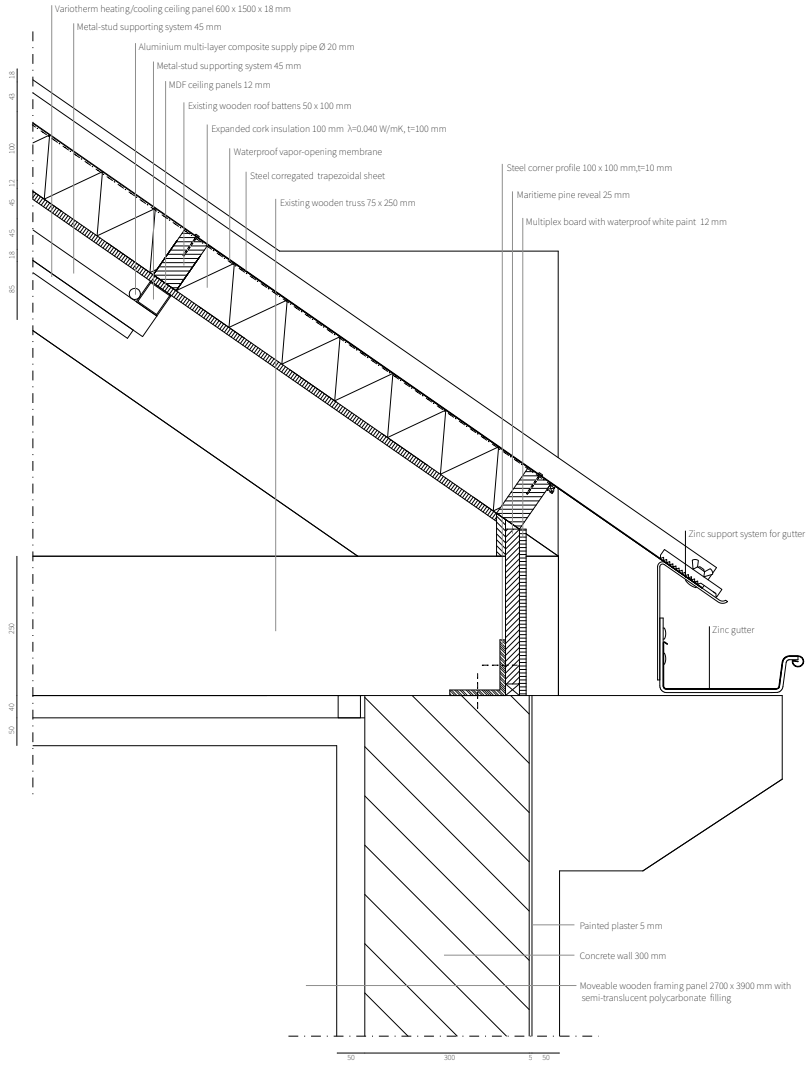


Figure 30: Building 1 detail 1:5

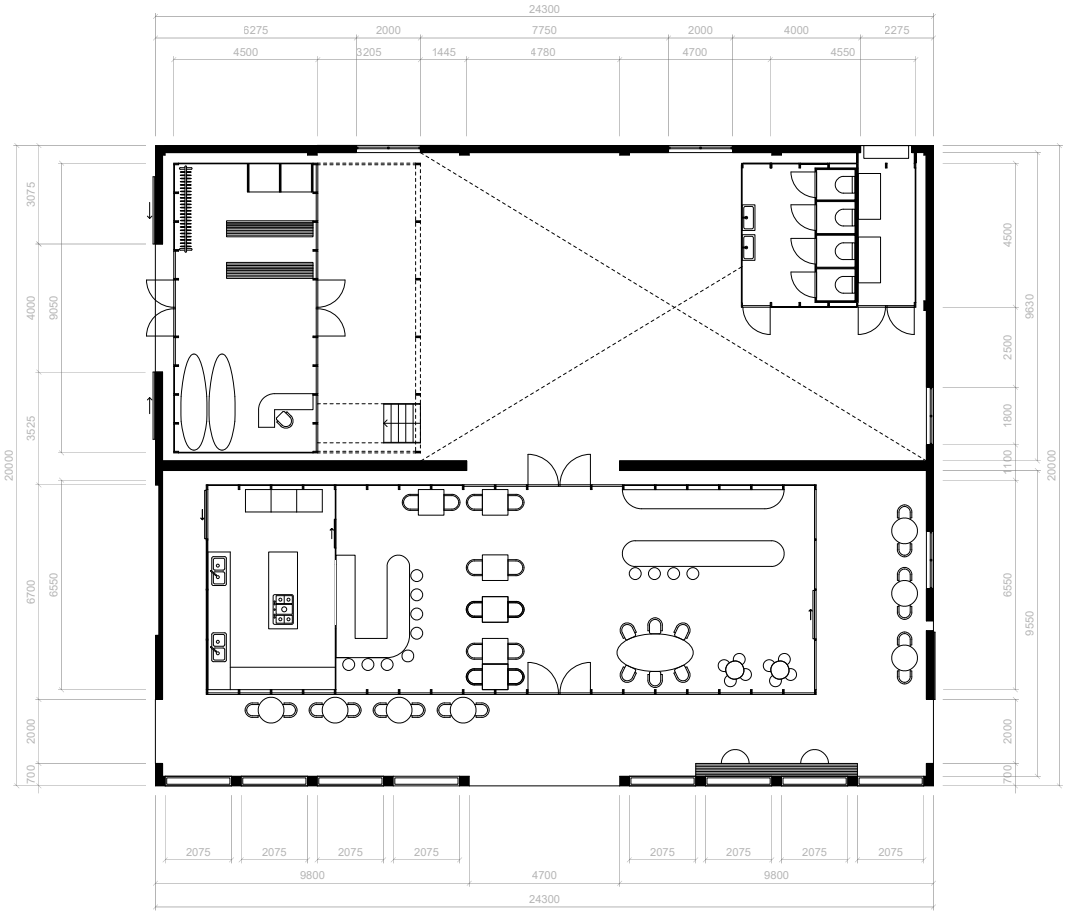


Figure 31: Building 2 floorplan ground floor 1:100

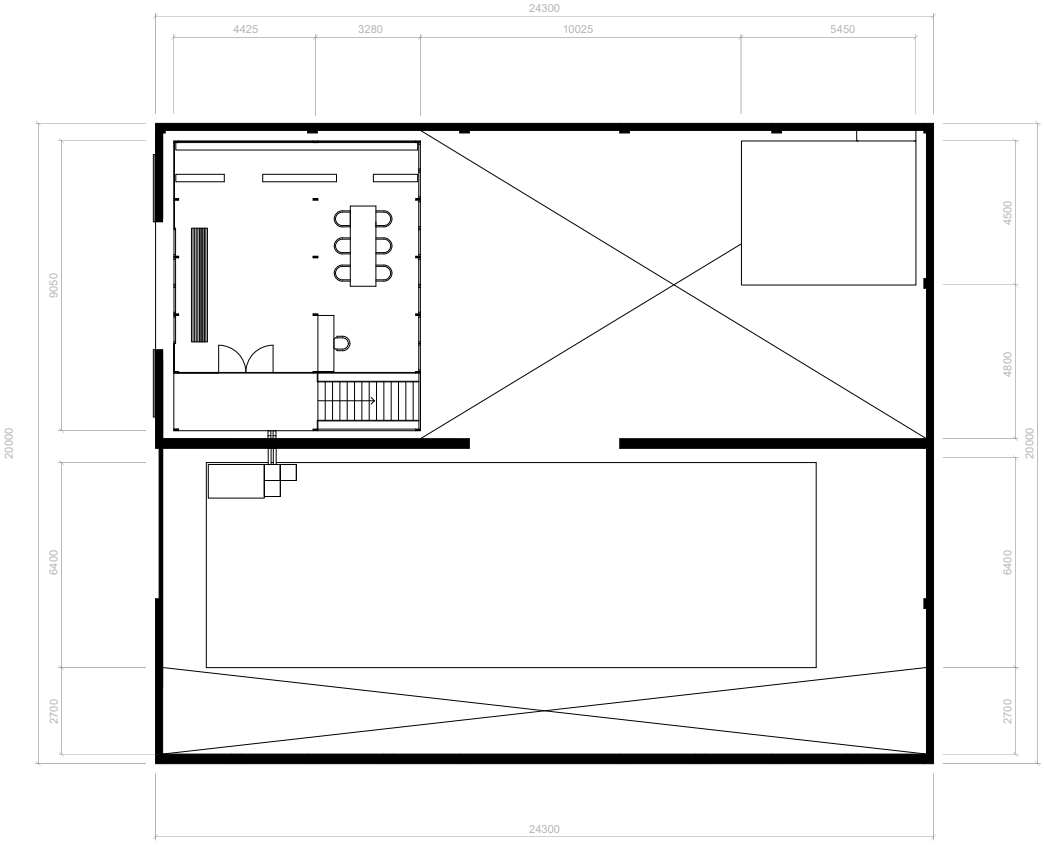


Figure 32: Building 2 floorplan first floor 1:100

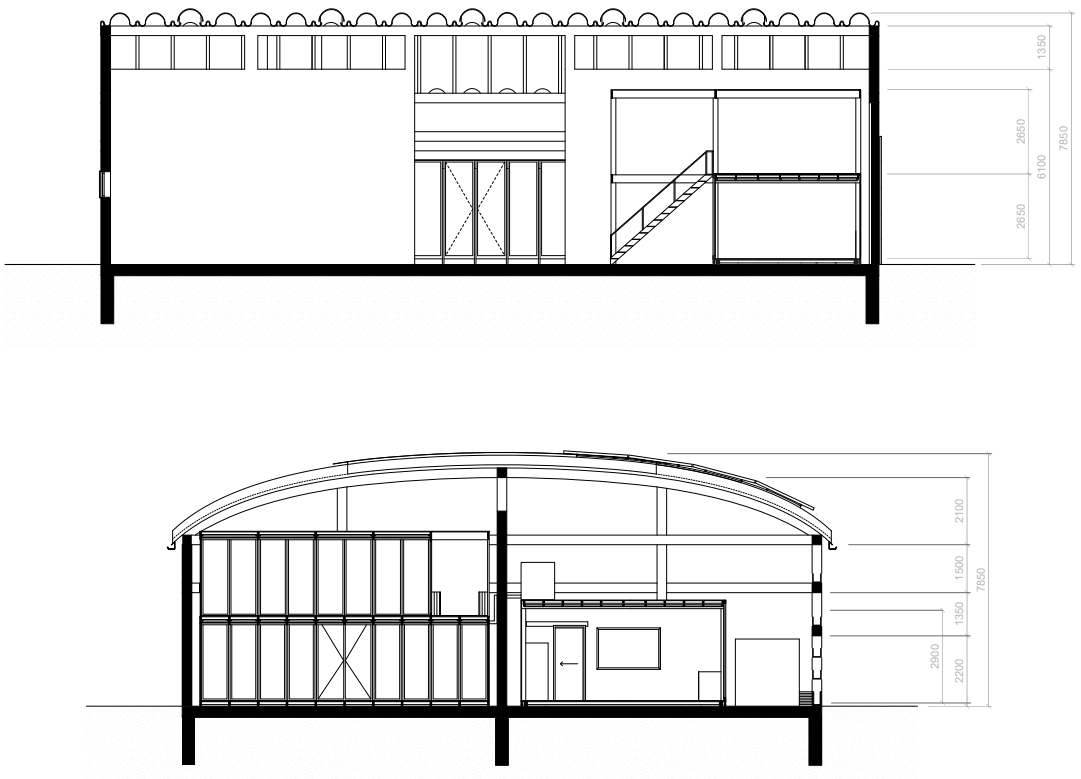


Figure 33: Building 2 sections 1:100

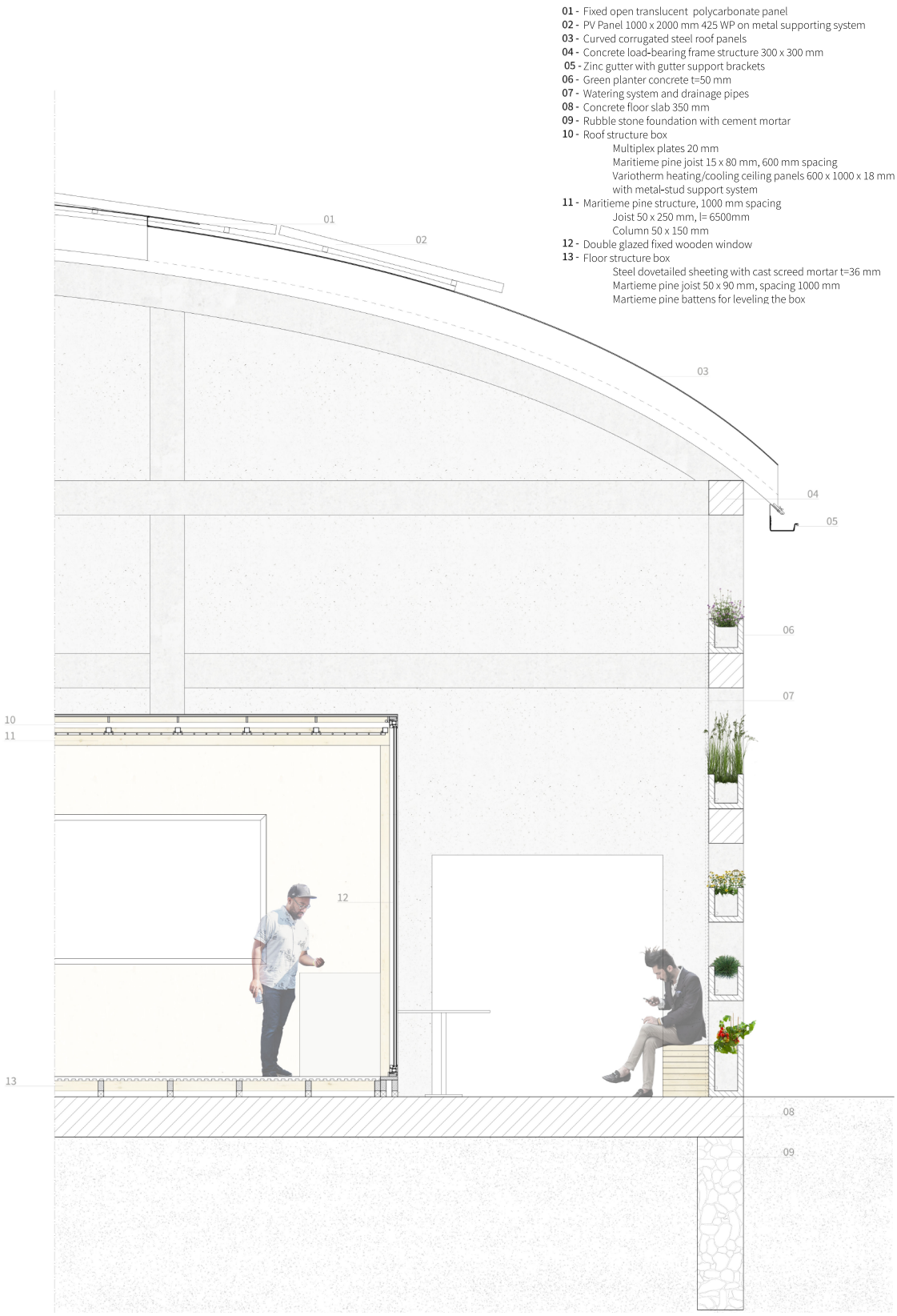


Figure 34: Building 2 section 1:20

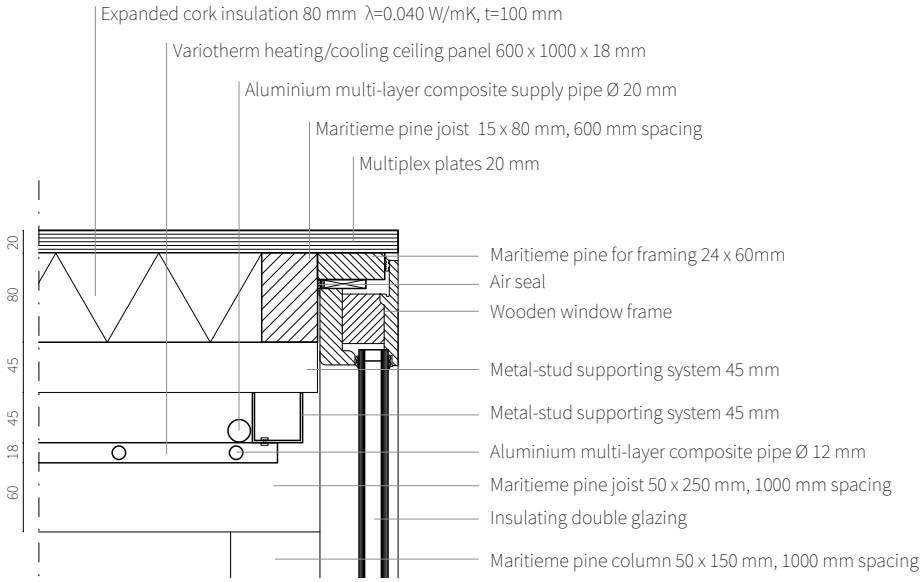


Figure 35: Building 2 detail 1:5

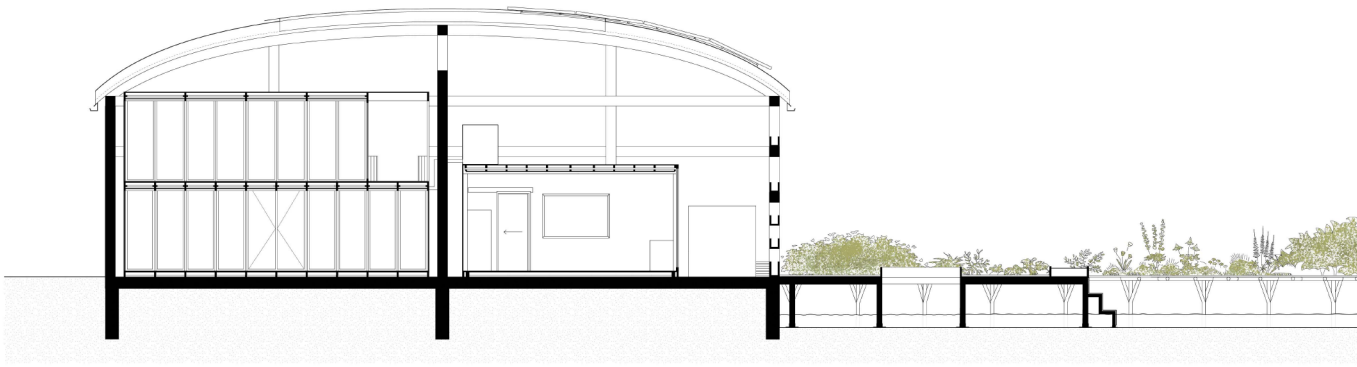


Figure 36: Landscape section 1:200

2.5.2 Climate system

The climate system for building 1 is based on only using renewable energy and use passive sustainable strategies to reduce the energy use. A PV system provides the building its electricity and is placed on the sloped roof. This system is minimally visible from outside the building because its only placed on the roof in the middle of the building. The electric consumption is calculated for 400 m² of office space which results in 16000 kWh. In total 38 panels with each 500 WP are generating the needed electricity. In addition, an air to water heat pump provides the building with warm or cold water. This system functions on a low temperature to reduce overall energy use. The unit is placed inside the building with a steel grid visible in the façade. The water is transported to the Variotherm cooling or heating ceiling panels in order to create the desired indoor temperature. The panels are covering 80% of the ceiling surface and have the following measurements: 600 x 1500 x 18 mm. They also provide good acoustics in the building because it is constructed with a noise absorbing material. The passive climate strategy that is applied, is to use natural ventilation. Openable windows and ventilation grids above the windows are designed in the existing window openings which are oriented in the most frequent wind direction west/southwest. Eight openable windows are placed in the roof which can be opened according to the season and also provide natural light. On the south façade, adjustable external aluminium venetians reduce the glare and solar heat. Lastly, to reduce transport costs while constructing the building and to lower the CO_2 emission, local organic building materials are used like cork insulation in the ceiling and maritime pine for the moveable panels.

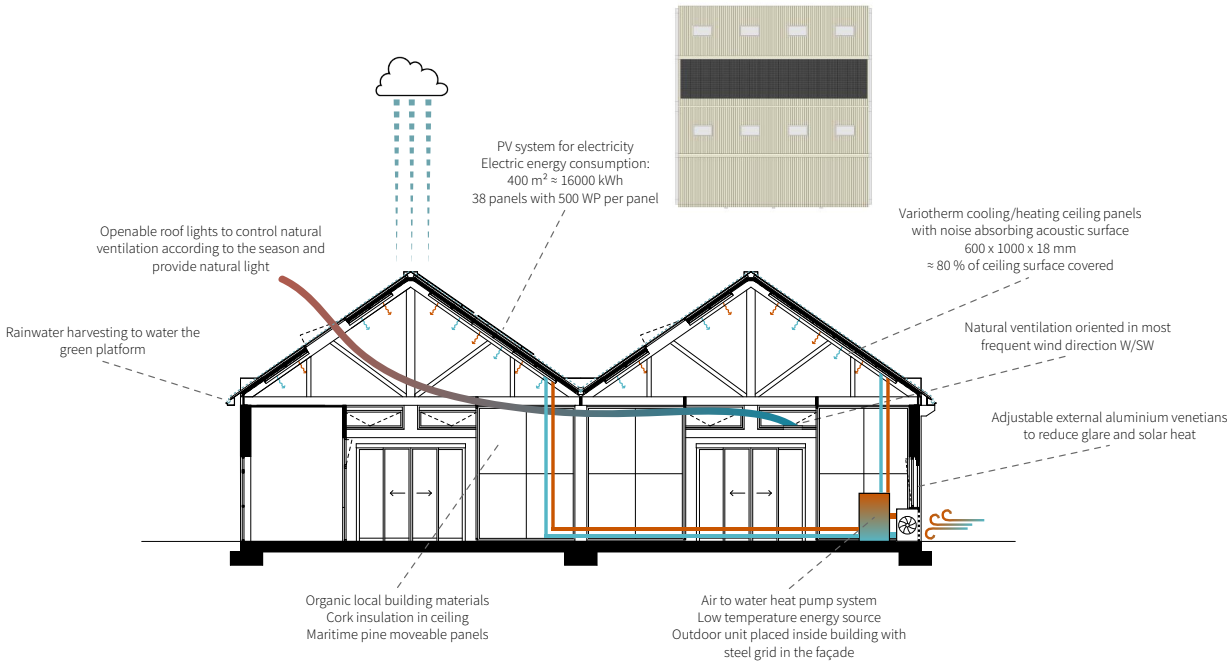


Figure 37: Climate scheme building 1

The climate system for building 2 is also based on only using renewable energy and use passive sustainable strategies to reduce the energy use. The main concept to reduce energy in this building is the implementation of the box-in-box principle. In this way, more than half of the floor space doesn't need to be climatised. A PV system provides the building its electricity and is placed on the roof. The electric consumption is calculated for 255 m² of a multi-functional non-domestic building which results in 27000 kWh. In total 63 panels with each 500 WP are generating the needed electricity. In addition, an air to water heat pump provides the building with warm or cold water. This system functions on a low temperature to reduce overall energy use. The unit is placed inside the building with a steel grid visible in the façade. The water is transported to the Variotherm cooling or heating ceiling panels in order to create the desired indoor temperature. The panels are covering 80% of the ceiling surface and have the following measurements: 600 x 1000 x 18 mm. They also provide good acoustics in the building because it is constructed with a noise absorbing material. The boxes are ventilated based on a balanced mechanical system with heat recovery. A Zehnder ComfoAir XL will provide the boxes with 1500 m] m³/h of air. The spaces around the boxes are using natural ventilation which will be provided by openable roof lights, which at the same time ensure more natural light. The south façade is opened up to provide natural ventilation and to create space for a green façade. The green façade functions as a natural shading system. Lastly, to reduce transport costs while constructing the building and to lower the CO_2 emission, local organic building materials are used like cork insulation in the ceiling and maritime pine for the structure of the boxes.

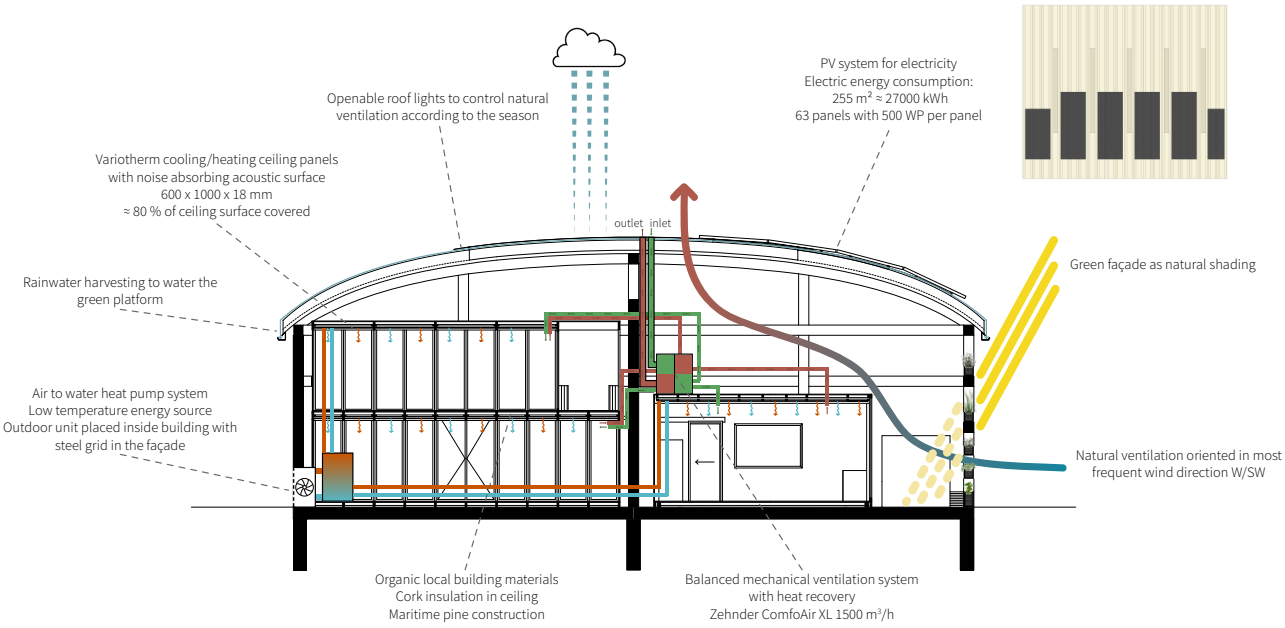


Figure 38: Climate scheme building 2

2.5.3 Treatments of façades

The reason whether to clean a façade or not can be divided into three approached: aesthetical, ethical and technical. [12] Figure 39 is showing the intervention and durable solution for each specific damage mechanism. The left side of the scheme is showing the damages of building 1, the right side the damages of building 2.

Figure 39: Treatments of façades

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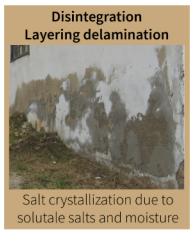
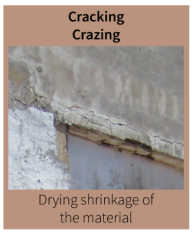
form



Salt accumulating water repellent plaster

Prevent splashing sea water with green platform



Remove current plaster

Cover with better plaster

2.6 References

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[12] Monument Diagnosis and Conservation System. (n.d.). ***Reasons for cleaning a facade.*** https://mdcs.monumentenkennis.nl/wiki/page/54/1-reasons-for-cleaning-a-facade

3

Chapter 3

Impact assessment

3.1 Impact assessment matrix

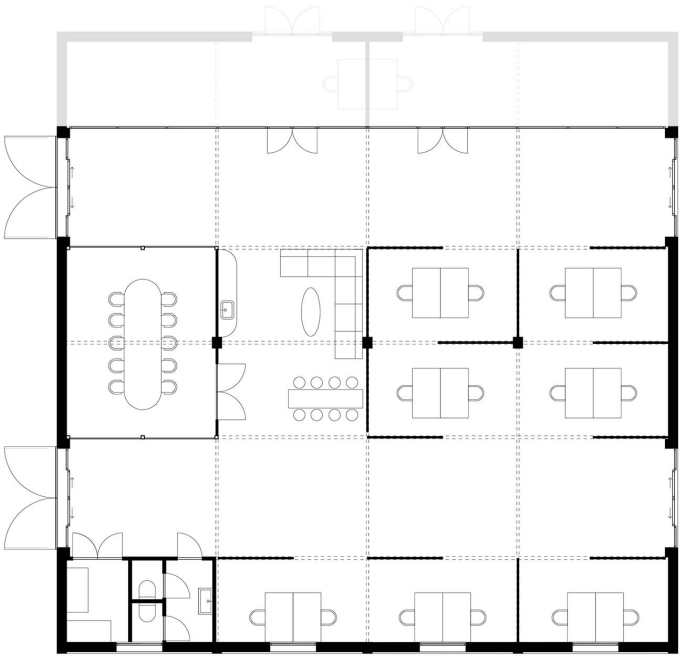
This impact assessment matrix shows the relationship between values, attributes, functions, and levels of intervention. The impact of desired intervention can be measured and evaluated by assessing each function with this matrix. In addition, by critically looking back at the drawings from the redesign proposal, a reflection will be done to learn from as I develop as a professional. On the following pages, each specific function of the building will be discussed. The squares outlined with a dotted line are the values and attributes that contradict with the final design intervention and will therefore be further explained.

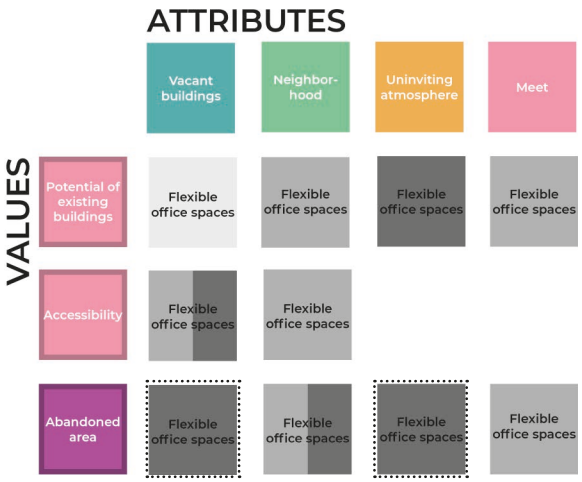
Figure 40: Impact assessment matrix


Green facade
Neighbor-hood
Waterfront
Uninviting atmosphere
Peaceful area
Drinks & talk
Activities in sea
Meet
Entertain-ment
Exercise & dog walk
Vertical gardening
Studio spaces
Exhibition area
Flexible office spaces
Restaurant
Flexible office spaces
Exhibition area
Coffee bar
Green platform
Studio spaces
Green platform
Bird watching
SUP center
Restaurant
Coffee bar
Exhibition area
Green platform
Flexible office spaces
Restaurant
Studio spaces
Coffee bar
Exhibition area
SUP center
Green platform
Flexible office spaces
Vertical gardening
Studio spaces
Green platform
Bridge
Green platform
Bridge
Green platform
Restaurant
Coffee bar
SUP center
Green platform
Bridge
Green platform
Bridge
Vertical gardening
Exhibition area
Green platform
Bird watching
Green platform
SUP center
Green platform
Green platform
SUP center
Bird watching
Green platform
Vertical gardening
Green platform
Bridge
Green platform
Green platform
Green platform
SUP center
Green platform
Bridge
Green platform
Restaurant
Coffee bar
SUP center
Coffee bar
Green platform
Exhibition area
Green platform
Vertical gardening
Flexible office spaces
Green platform
Exhibition area
Bridge
Green platform
Flexible office spaces
Exhibition area
Coffee bar
Green platform
Bridge
Green platform
Restaurant
Coffee bar
SUP center
Flexible office spaces
Coffee bar
Exhibition area
Green platform
Restaurant
Studio spaces
Exhibition area
SUP center
Bird watching
Green platform
Vertical gardening
Green platform
Bridge
Exhibition area
Green platform
Green platform
Green platform
SUP center
Green platform
Exhibition area
Green platform

Flexible office spaces

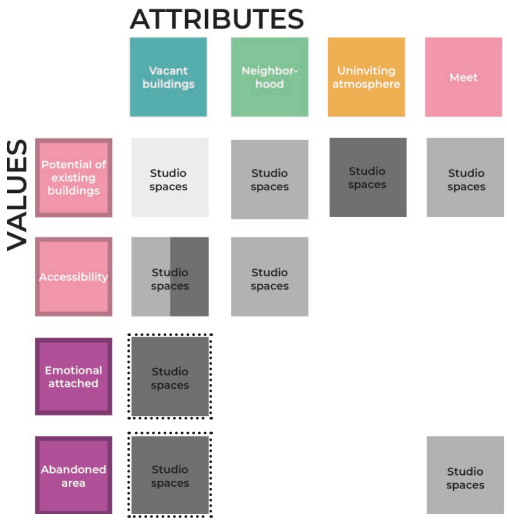
The matrix is immediately showing a large amount of the intervention ***remove***. This is the result of the value ***abandoned area*** in relation with the attributes ***vacant buildings*** and ***uninviting atmosphere***. The logical step would be to remove the building if only considering these values and attributes. However, in the context of sustainability and because the value potential of existing buildings should also be addressed, this intervention would be undesirable. Therefore, it was decided remove some of the graffiti on the exterior walls to create a more inviting and less abandoned area. Also, the value ***accessibility*** is included by partly removing wall elements and adding new window and door frames.





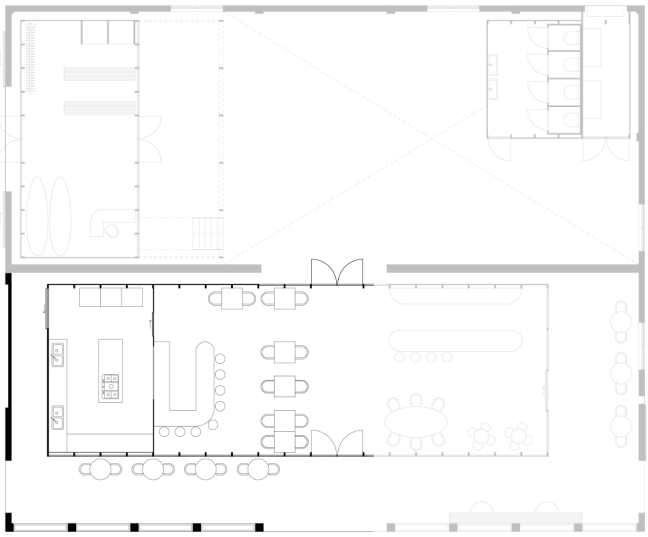
Creative studio spaces

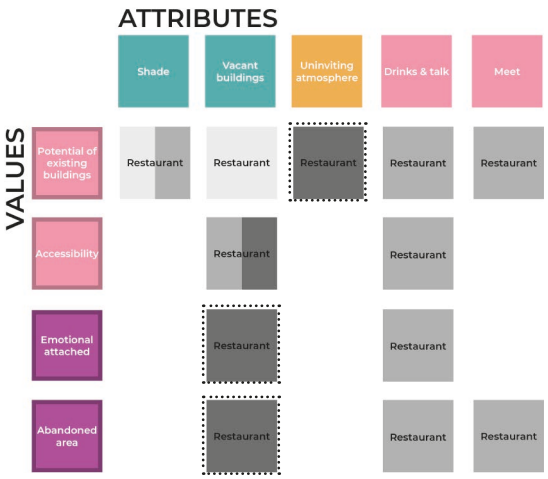
The interventions of the creative studio spaces show many similarities with the flexible office spaces. This is because they are located in the same building and face the same values and attributes. Here too, the logical step would be to remove the building if only considering the value ***abandoned area*** and the attributes of ***vacant buildings*** and ***uninviting area***. However, it is decided to clean the façades to create a better atmosphere. The ***accessibility*** value will be addressed by removing parts of the north facade to make the connection with the green platform by large double doors. Finally, the ***emotional attachment*** intervention for the ***vacant buildings*** will also be to remove the building to create a more lively area. However, the redesign eventually focussed on upgrading the current building in the context of sustainability.



Restaurant

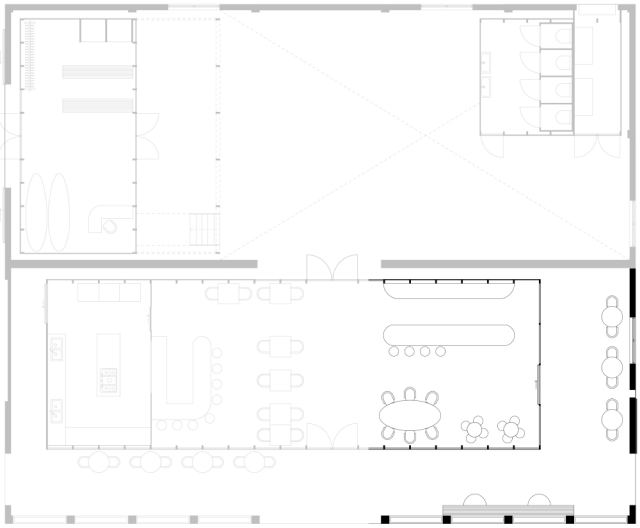
The matrix shows that the value of the ***potential of the existing buildings*** is mostly addressed in the function of the restaurant. The shade provided by the original building (keep) is used through the box-in-box typology (add). Still, the outer characteristics of vacant buildings are visible (keep) in the design. A contradicting occurs for the ***attribute uninviting atmosphere*** because here, the intervention will remove the existing building to create a more inviting area. The redesign chose to still keep the characteristics of the building, but improve the current building. Actually, the intervention that has been made is to keep and add. This also applies to the remove interventions for ***emotional attached*** and ***abandoned area***. The accessibility of the restaurant is ensured with a hallway that is created by opening up the façade (remove). The hallway is connected with the green platform (add) and street level. Overall, it can be concluded that the values ***emotional attached*** and ***abandoned area*** could be more addressed by removing more parts of the building to solve the ***uninviting atmosphere***.

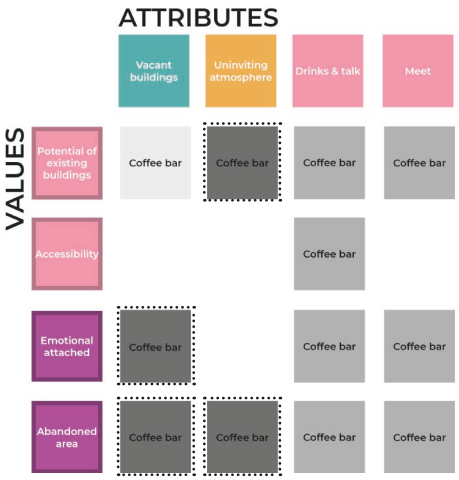




Coffee bar

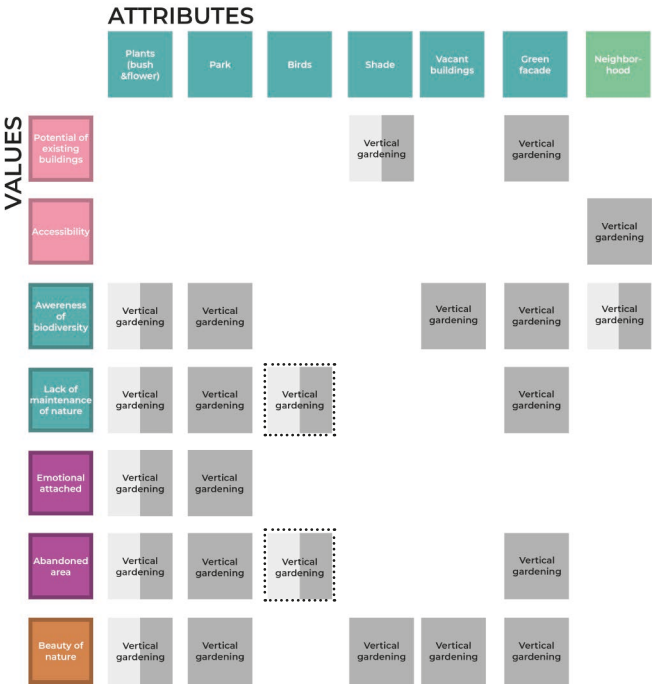
The interventions related to the attributes of ***vacant buildings*** and ***uninviting atmosphere*** show some similarities with the restaurant's function. To address the values ***potential of existing buildings***, ***emotional attached***, and ***abandoned area***, the intervention should have been to remove the building. However, to approach for the redesign was to affect the characteristics of the building as minimally as possible for sustainable purposes. The box-in-box principle has been used to achieve this, but this intervention is more related to add. Nevertheless, the box-in-box approach does meet the attributes ***drinks&talk*** and ***meet***.





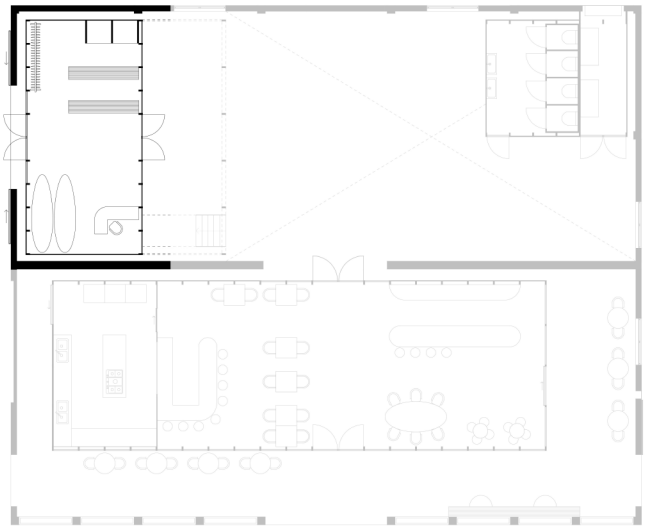
Vertical gardening

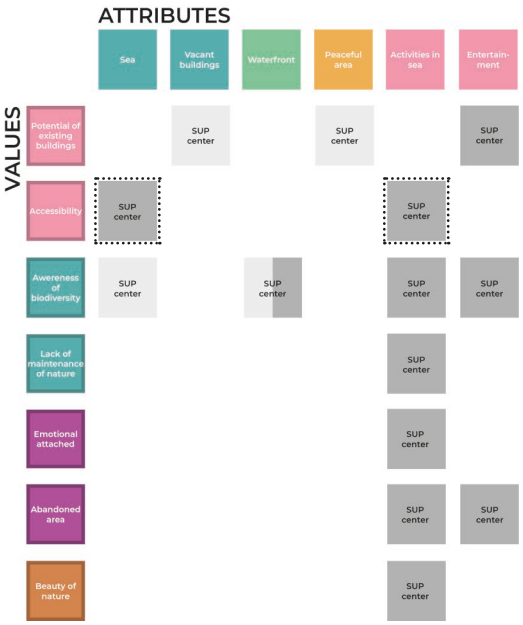
Vertical gardening is mainly focussed on improving nature in the building, which affects the values ***awareness of biodiversity, lack of maintenance of nature,*** and ***beauty of nature***. In order to address these values, the attributes ***plants, park, birds,*** and ***green facade*** are mostly integrated into this function. In order to implement the attribute ***birds***, the idea was to create bird-nesting areas in the ***green façade***. This attribute is eventually not addressed in the redesign and could incorporate better. For ***vertical gardening,*** the interventions are limited to keep and add because at first it was assumed that no building parts needed to be removed for this function. Eventually, when looking at the section, the conclusion can be made that the façade is opened up to create space for the plant boxes.



SUP center

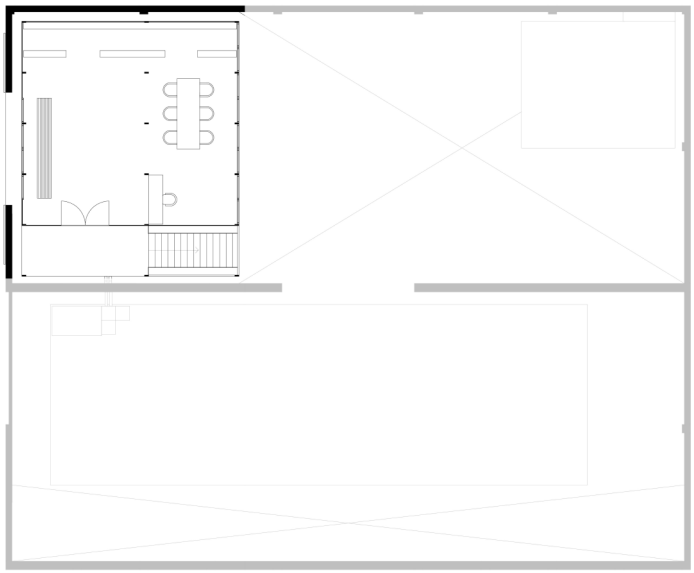
The SUP center is mainly addressing the attributes of ***activities in sea*** and ***entertainment***. The intervention is to add the SUP center to use the ***potential of the buildings, raise awareness of biodiversity, show the beauty of nature*** and create a less ***abandoned area*** by adding lesiure to the area. The value ***accessibility*** is connected with the ***sea***, and ***the activities in sea*** and the intervention should be to add the center. Eventually, when critically assessing the redesign, the center is quite hard to reach from the entrance of the building. Either the route goes through the restaurant and coffeebar or from outside along the platform.

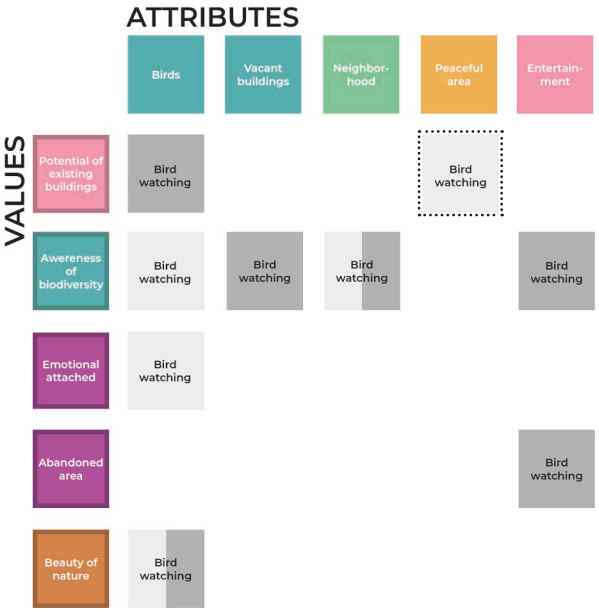




Bird watching

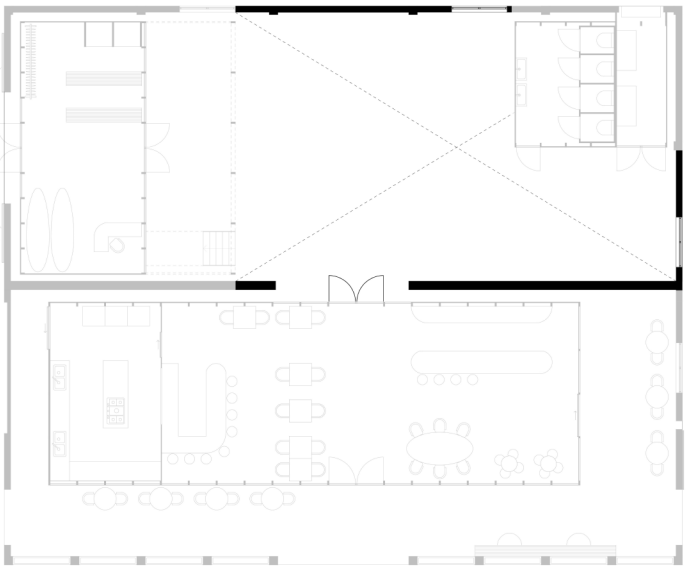
The bird-watching function mainly addresses the value *awareness of biodiversity* and the attribute *birds* and *entertainment*. The bird-watching center is located on the first floor, allowing an excellent opportunity to look over Ria Formosa to spot birds. The value *beauty of nature* would be kept and added because people would be more aware of the birds surrounding them. The value *peaceful area* should also be kept, but when critically assessing the design, the SUP center and the restaurant area could negatively affect this attribute.

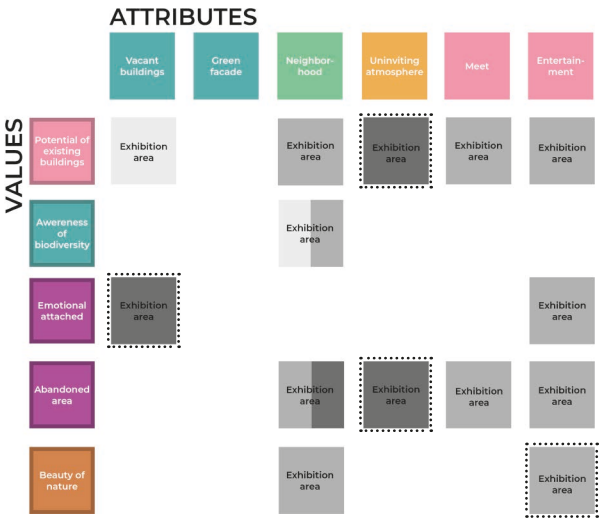




Exhibition space

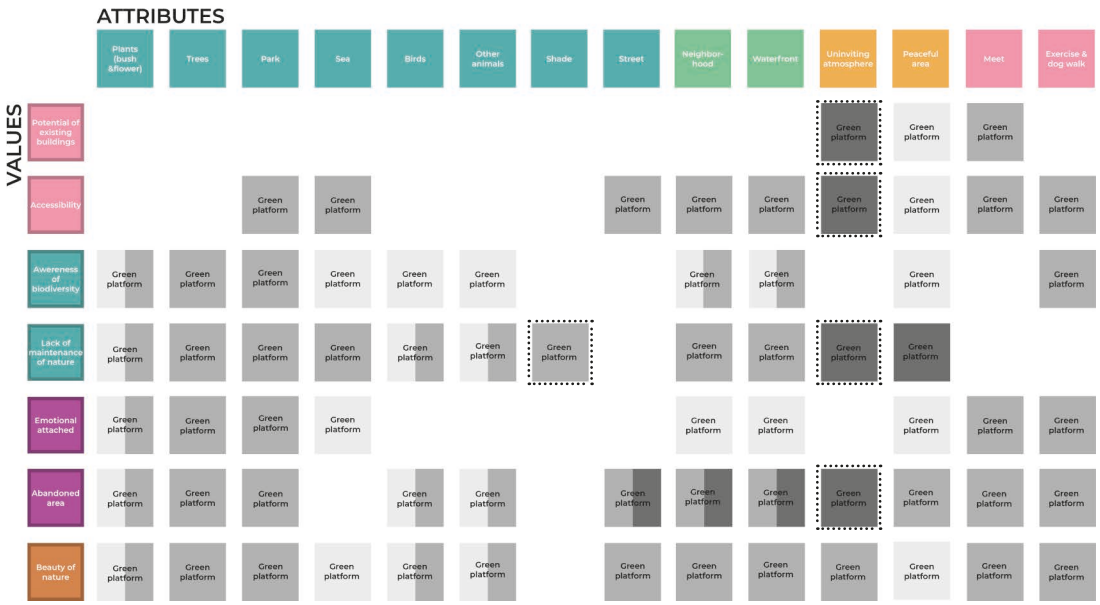
The exhibition space is located in the unconditioned space between the boxes in building 2, and therefore the value ***potential of the existing buildings*** and the attribute ***vacant building*** is fulfilled with the intervention keep. The original characteristics will not be affected by this function. The ***awareness of biodiversity*** and ***beauty of nature*** is connected with the ***neigborhood*** and ***entertainment*** attributes. It is assumed that the exhibition space will be used to expose art related to nature, but it could also be that this is not the case because of the users. If so, these values and attributes are not assessed and could be better embedded.





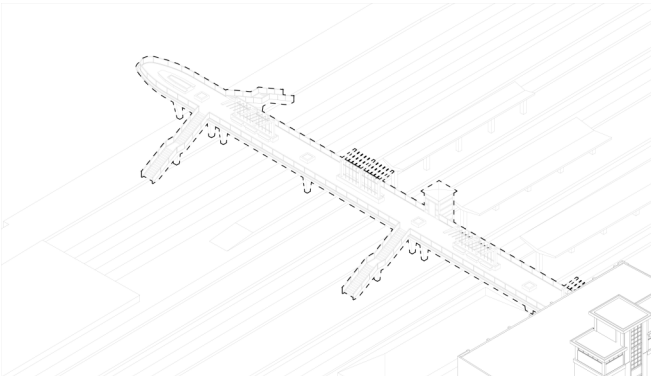
Green platform

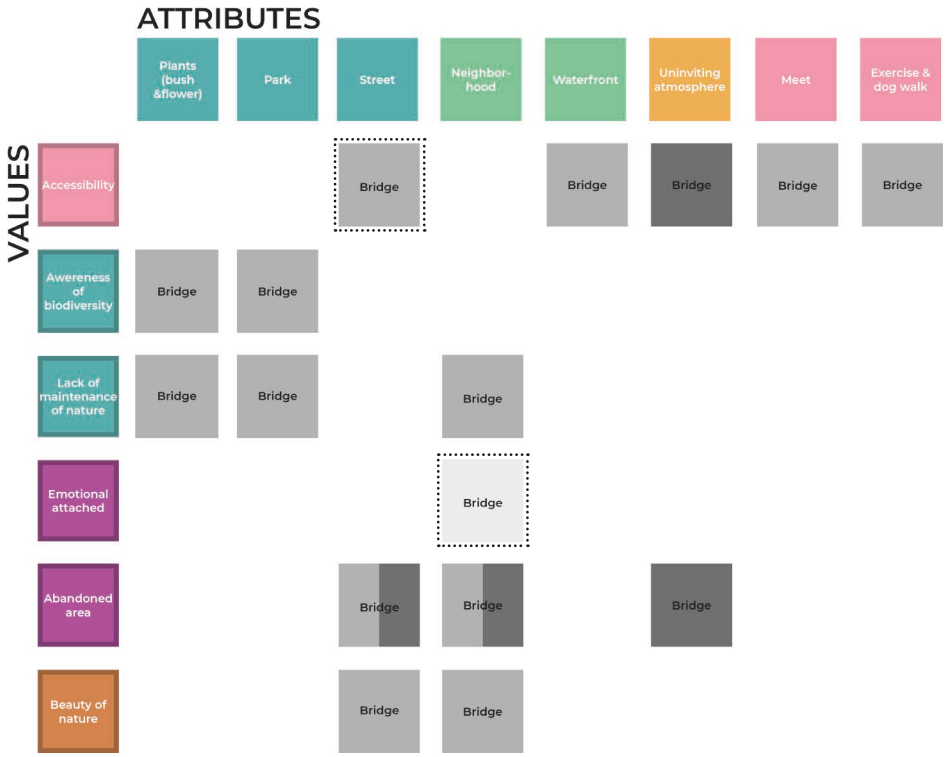
The green platform covers many values and attributes, partly due to a large number of asset attributes derived from the research. The green platform forms the connection between the building and nature, which is the main approach of the redesign. Therefore, the intervention for the asset attributes and the values ***awareness of biodiversity, lack of maintenance,*** and ***beauty of nature*** will be either keep or restore. Some of the boxes show both levels of intervention, which is because of the nature-inclusive guideline about elaborate further on the current situation. So to keep the current flora and fauna, but also add species to the green platform. Furthermore, the matrix is also showing that the green platform will add ***shading***. This goal is not embedded in the platform's design and could have been better designed. Finally, the attribute ***uninviting atmosphere*** needs to be discussed. The intervention level is mainly remove, but should be interpreted as removing the previous unorganised areas around the building to create a more lively area.



Bridge

The need to design a bridge over the train tracks is derived from the masterplan and connects the different redesign areas with each other. It functions as a connection between the neighborhood and the waterfront, to make the plot accessible and more attractive. Therefore, the intervention level remove is covered for the attribute *uninviting atmosphere* and the value *abandoned area*. The value *accessibility* and *street* were assigned with the intervention level add, but when criticality looking at the design proposal, this intervention is not embedded. Lastly, the intervention level for *emotional attached* and *neighborhood* was to keep the original state of the area to ensure the emotional bond people have with the current state, but the bridge will be added as new object to the neighborhood.





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Chapter 4

Reflection

This master thesis explored emotional attachment towards nature from the younger generation in Faro, Portugal, to eventually redesign two former warehouses in a nature-inclusive way. The research was focused on revealing the values and attributes of the community as a whole, while the design intent was to examine the most important values and attributes of the younger generation. This focus is based on the fact that Faro, particularly the chosen neighborhood Estaçao, is facing a growing aging population. Two vacant buildings were redesigned to attract more young people to the site and stimulate the economy in this area. The most important values and attributes were translated into functions and design guidelines for the values-based design, and the impact assessment shows the relationship between each of these aspects. This gave new insights into how to deal with contradictory demands for a redesign.

A participatory method was implemented to reveal the values and attributes of the younger generation. However, there still needs to be a gap in using participatory methods during the design process in architecture and heritage research. Therefore, this research added new methods of participatory practices that other researchers in the future can implement. Not only I, as a future architect, learned from this way of working with the community to understand the needs of the people better. But the community can also learn about the importance of the quality of their living environment and really play a role in the design process. The chosen method for this stakeholder was a photographic walking tour in which people were asked to take photos of specific natural elements in their neighborhood. What I should do better next time is to plan ahead to raise attention for the walking tour and increase the number of participants. This way, more significant results can be drawn for the redesign, which will make the redesign more precise.

The studio where this master thesis was part of is the MSc Architecture, Urbanism and Building Sciences. The specific studio is called Revitalising Heritage: Faro Convention Lab and is part of the Heritage & Architecture Chair. The studio topic is related to participatory methods that can be used in research and design processes to engage the local communities and create more inclusive architecture. In addition, the master thesis topic is strongly related to the importance of nature in architecture, which is a currently valid topic in this field to create healthier cities. The fieldwork trip was supported by the municipality of Faro, which is highly interested in heritage research for societies considering the fact that the Faro Convention is held in their city. This study's outcomes will inspire the community and raise attention to the Faro Convention. Finally, the group cultural significance paper was presented at the URBiNAT conference in Milan, Italy. Here, inspiration from fellow students and colleagues is exchanged, which eventually influences the redesign.