An architecture of possibilities

Co-creation design as a tool for embracing well-being in creating alternative futures for vacant heritage in Estação neighborhood, Faro, Portugal

Sara Ewelina Szulc

co-creation design | well-being | vacant heritage | participatory methods

“Young people are the adults of tomorrow.”

- child, Heritage Impact Assessment

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[redacted]

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View on the city of Faro

Coastline of Portugal

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Foreword

This booklet presents the graduation thesis written in the context of the design studio Revitalising Heritage: Faro Convention Labs. The case study of this graduation is the city of Faro in Portugal, which creates unique possibilities for learning and designing in a different cultural setting. In addition, this booklet explains each phase of the design process, from the research to the final design.

Graduation studio is divided into two main phases: research and design. We were encouraged to work in small groups based on our interests during the study. As members of the "Green group," we were interested in nature and the co-creation process in architecture. The first chapter of this thesis is a result of group work. Due to cooperation with other students, we could support and stimulate each other to embrace new concepts and ways of working. The following chapters are the result of the individual work but are inextricably linked since each next step follows the previous one.

On behalf of the entire group, we are grateful to those who have supported our work on this project. Special thanks to our supervisors Ana Pereira Roders and Bruno de Andrade for their help in the entire research process and their knowledge, tips, and many words full of support and understanding. Many thanks to Wido Quist for his kind observations, questions, and help. Ana Tarrafa Silva and Teresa Valente deserve the most sincere appreciation and thanks for supporting our project and creating opportunities for this project to come into being. Patricia Fonseca Afonso, Patricia Malobbia, and Tiago Candeias played an important role during our fieldwork in Faro, without whom it would not be possible to obtain much of the information. In addition, we would like to thank Carlos Queiroz for showing a different perspective on people and education and for documenting our work in photography and film. Finally, we would like to thank the volunteers from the University of Algarve: Maria Sousa, Nathália Bonatto Ramos, Maria Rosmaninho, Roberta Menezes, and Joana Martins, for helping us to connect with the local community.

Street somewhere in Faro

Introduction

Design Process

The architect's design process is constantly changing. *Designing* is a highly dynamic process, which is often difficult to describe, even though experienced architects. The design process can be divided into three stages: analysis, synthesis, and evaluation. Activities within those stages can contain feedback loops because of the dynamic character of the design process. The architect's design process is not strictly based on knowledge and experience but also on intuition and experimentation. [1]

This graduation project was focused on the co-creation design method using Minecraft to set the dialog with school children. Co-creation design changes the design process because it offers additional perspective and knowledge about the place we want to alter. It makes the process more democratic because it gives the word to society, very often to the groups of people that, in normal circumstances, would not be heard. Co-creation design also takes a part of the power away from the architect, making him a co-creator, not just a creator.

When developing an architectural project, everything can influence its process and outcomes. In the presented process, the vast impact had three aspects: the decision to work with children, using a new method for research, and the choice of building. The first decision was dictated by the challenge it brings, and the desire to work with the group is only sometimes considered during the design process. The choice of method was inspired by the work of professor Bruno de Andrade, whose enthusiasm for collaborating with children using Minecraft strongly influenced my perspective. Finally, the selection of the building was based on the information provided by local architects and the possibilities it offers – a very spacious courtyard.

Diagram (Fig.1) simplifies the design process into steps that are more uniform but still resemble my process, specific to the circumstances of the fieldwork. It aims to enable the possibility for replication of this process. If the method is replicable, it will be possible to use it in a different context. Academic research has multiple steps in the case of this project, which follows from the complexity of the study. The research was developed by four students working with four stakeholder groups. As a result, four methods were applied to enable dialog with different age groups, described in detail in Chapter 1.

There are three critical steps in the pre-design phase. The first is executing the workshops according to the method during the fieldwork. In the case of Faro, we were working in a foreign cultural context where language influenced communication. Still, due to the cooperation with local architects, students, and the municipality, it was not an obstacle. The second step is data collection and analysis, which, combining results collected in four different workshops, demanded careful study. A third important step in this phase was the preparation of the Cultural Significance Survey, which is a collection of all the values and attributes. After collecting all the information, work in a group was finalized. Finally, the following steps were executed individually (individual work is marked with blue in the diagram).

What is specific to this process is that part of the information was available during the data collection step. Working with children is dynamic and might bring unexpected results or, like in this case, provide incomplete data. Executing the same design process in other contexts could also cause such a hindrance. As a result, the process goes to the design proposal, which the stakeholder evaluates. The outcomes of the heritage impact assessment were evaluated and led to the final design. The following chapters describe the whole process in depth.

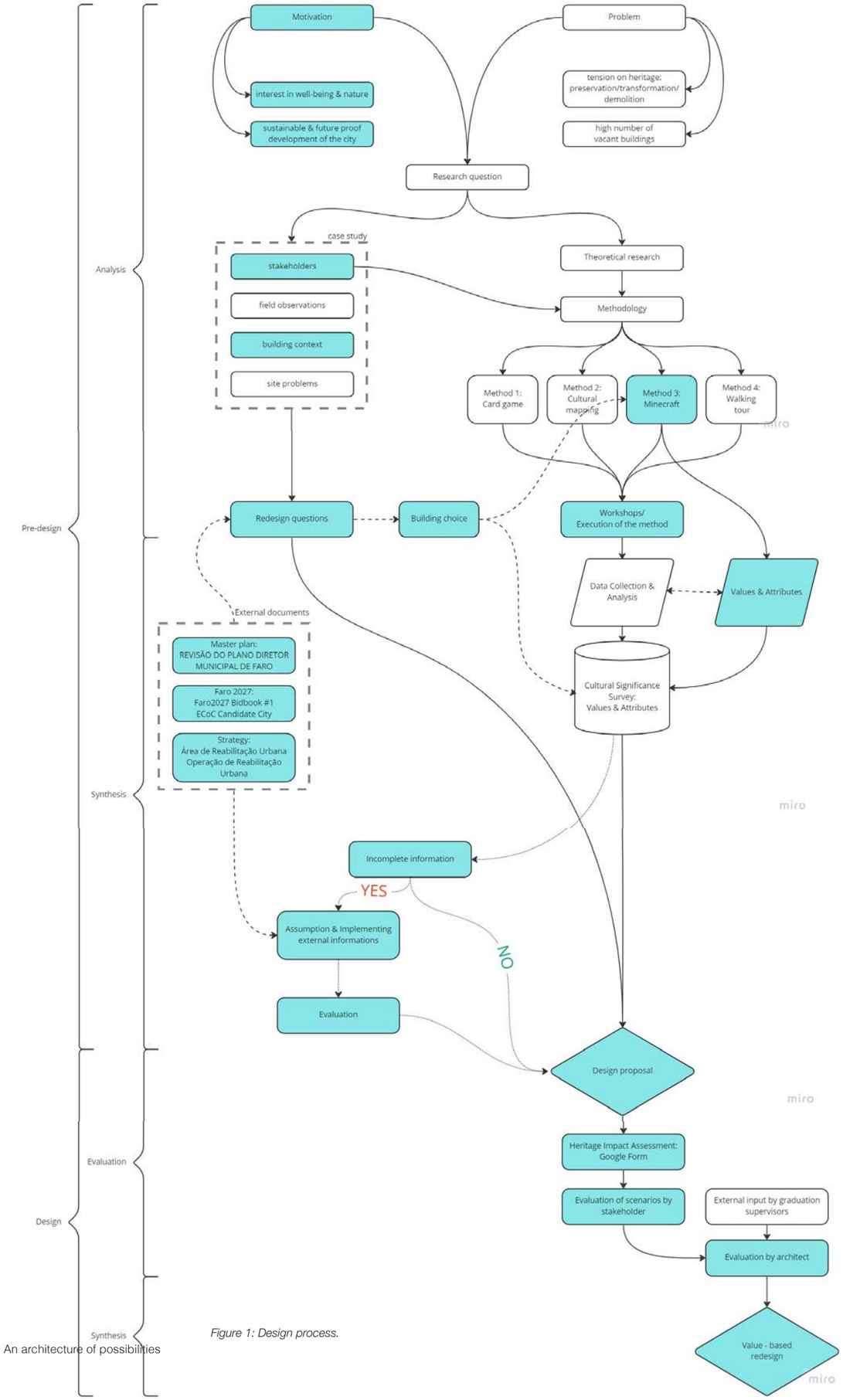


Figure 1: Design process.

An architecture of possibilities

Explanation of the title

The term *architecture of possibilities* is used not through the first time. Architects, designers, and artists are exploring the potential of architectural spaces from diverse perspectives. For example, Aarushi Kalra, with her project Theatre X, explores the possibilities of architecture to embody the digital environment in the physical world. [2] Writer Lincoln Caplan used the term *architecture of possibilities* in his article devoted to the work of famous architect Richard Rogers. [3] Inspired by modern industrialism, Rogers designed unusual buildings, which were the statement of architecture's possibilities. The master thesis of George Courtauld also contains the term *architecture of possibilities* in the title since he researched the possibilities offered by architecture in the context of interaction with the audience. [4]

In this work, the term *architecture of possibilities* is used because it underlines the broader perspective of design. This graduation project explores the possibilities of diverse research methods in the context of the built environment and the opportunities of the vacant heritage in Faro. The plot strongly inspired the title because it revealed its potential step by step, which made me see the whole project as a place where different possibilities can become a reality. There are many possibilities for a particular vacant plot. The title of this project underlines that my proposition is one of many possibilities and does not define the future of the building.

Co-creation is "any act of collective creativity that is experienced jointly by two or more people." [5] The approach of co-creation is associated with co-design. *Co-design* is "collective creativity as it is applied across the whole span of a design process." [5] This thesis concentrates on the notion of co-creation design with the local community. *Co-creation design* aims to bring together students of architecture (experts) and children (stakeholders) to develop an alternative future scenario for a vacant building in Faro.[6] This concept is rooted in heritage values (economic, social, ecological, political, scientific, age, aesthetical and historic). From this research perspective, *co-creation design* is seen "as a form of heritage innovation: design ideas are shared and improved together through the implementation of a digital technology setting." [6]

Chapter 1: Cultural Significance Survey

(Re)discovering the values of nature in the neighborhood of Estação, Faro, with the community

Written by Sara Szulc, Willem Elskamp, Marloes Drijver, Tao Qiyang

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. The World Health Organization defined health in 1948 as " a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." A short time ago, in 2020, WHO expanded the definition by stating that health and wellbeing "are influenced by a range of biomedical, psychosocial, social, economic and environmental factors that interconnect across people in differing ways and at different times across the life course."

2. However, the definition of well-being is not always straightforward, so for this paper, the description of Tchiki Davis is used: "Well-being is the experience of health, happiness, and prosperity. It includes good mental health, high life satisfaction, a sense of meaning or purpose, and managing stress." Historic landscapes and elements of nature, like rivers and parks, have a therapeutic influence on human well-being. Additionally, nearby living heritage "is associated with higher life satisfaction and quality of life," which validates the idea that well-being and health are inextricably linked. Moreover, they depend on our connection to nature.

1. 1. Introduction

The role of nature in historic cities has been a growing debate about creating healthier and climate-proof environments. In economic and *health*[1] 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*[2]. [7] 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. [8] 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. [9]

Heritage is considered to have a distinctive ability to contribute to physical and mental well-being. It shapes our cities and enhances community cohesion. Heritage has a great capacity to develop "personal satisfaction that working in and with the past brings." [10] If we devote more attention to our health and well-being, reconsidering the importance of heritage, we will be able to explore the potential of heritage sites more sustainably. Heritage can enhance individual well-being, as well as social. "It offers the intangible: a sense of rootedness and identity, place and understanding. It can also provide tangible benefits; volunteers at heritage sites feel more confident, and volunteering boosts their social skills." [10] Researchers explain that visiting heritage sites brings beneficial results to the state of our well-being, equal to doing sports or visiting libraries. [11] However, visiting is not the only way to improve our well-being – "heritage offers opportunities for volunteering, involvement in community projects, and treatments for health conditions. It forms an essential part of the built and natural environments." [7] Heritage provides immense possibilities for connection with each other and ourselves in a more mindful way. We can learn by discovering "shared histories and identities." Furthermore, heritage has the "ability to connect places and people. Heritage makes an environment special to its community and pleasurable to experience, which is important for well-being." [10]

This chapter 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. [12] 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. [13, 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.” [13, 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 [9], 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 [8] 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 well-being. Other research [12] 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.[15] In addition, emotional attachment is derived from place attachment because it says something about the symbolic relationship 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. [16] However, place attachment may also lead to adverse effects, such as prejudice against other regions or neglecting the potential risks around the neighborhood. [17] 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 [18] as the collection of three factors to which people can directly feel attached to activities with people [19], physical settings, and meanings of conceptions. [20] 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. [21] 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. [22] 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 (Fig.2)

Figure 2: Intergenerational division of stakeholders.

Furthermore, this research is adapted from the values-based design approach developed by Pereira Roders and Tarrafa Silva (2012). [27] The foundation of this approach is the cultural significance of heritage. Cultural significance considers two elements: values and attributes. The value of heritage refers to why something is important to someone. It is understood as “the importance or worth of something for someone.” [24] Attributes refer to “a quality or characteristic that someone or something has.” [25] 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.” [26] However, Pereira Roders expanded the list of values with additional ones: economic, political, age, and ecological, and assigned other secondary values to them (Fig.3). [27]

Figure 3: Values framework. Adapted from: Pereira Roders, A. R. (2007). Re-architecture : lifespan rehabilitation of built heritage - capitellum. Technische UniversiteitEindhoven. https://doi.org/10.6100/IR631784 [27]

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 (Fig.4). [28]

1.1.2. Relevance

There is still a gap in using participation methods during the design process in architecture and heritage research. Avrami [29] 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

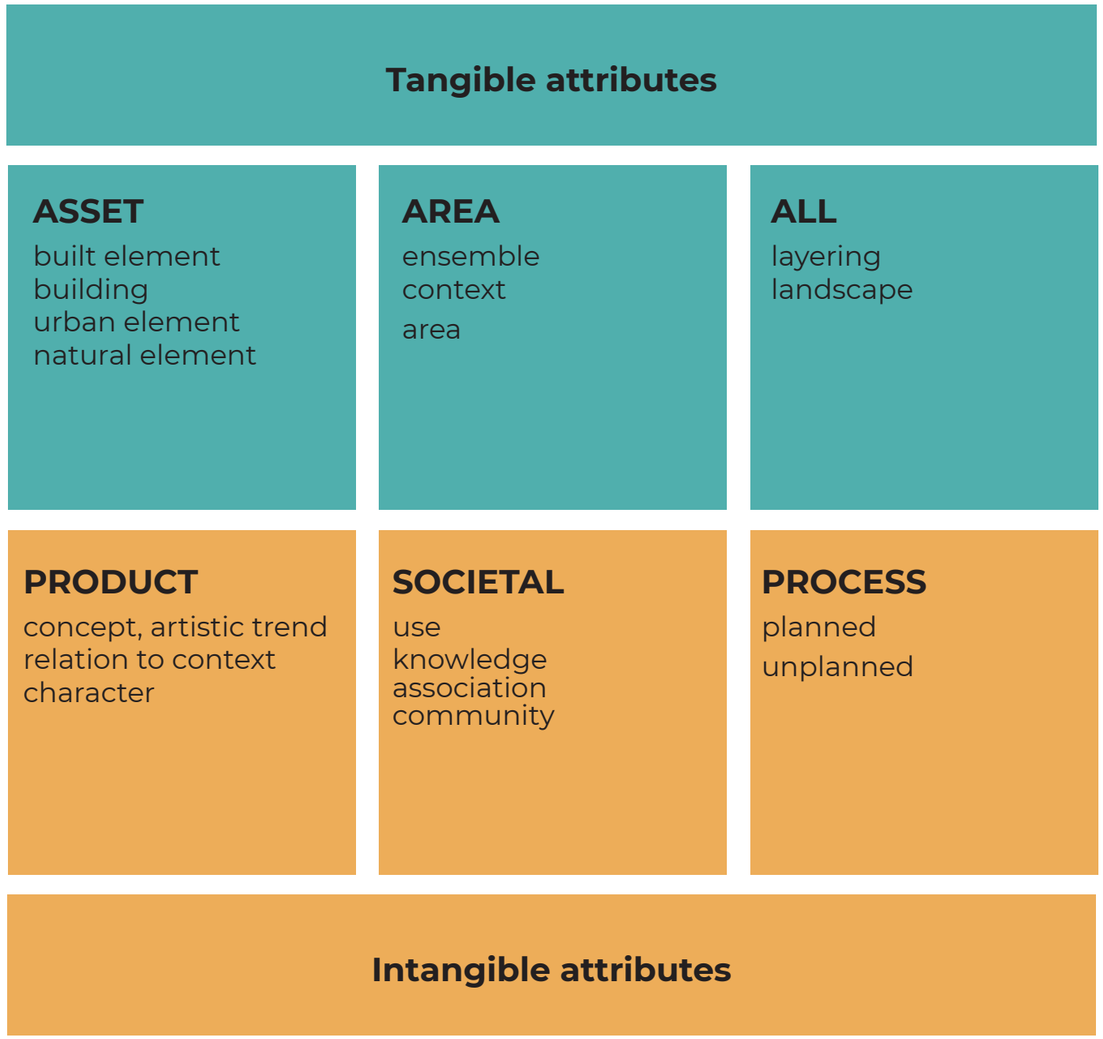


Figure 4: Attributes. Adapted from: Veldpaus, L. (2015). Historic urban landscapes: framing the integration of urban and heritage planning in multilevel governance. Technische Universiteit Eindhoven.

different stakeholders in terms of the *cultural significance*[3] 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*[4] 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. [30]

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. [31] The outcomes of this study will lead to inspiration for the community and raise attention for the Faro Convention.

3. 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."[26]

4. Co-creation is a term describing the process of creating something together. From the design perspective, engaging future users helps develop "more relevant and usable products and services." Involving citizens in the urban development or building design process can provide complex and more meaningful solutions for the design, increasing the quality of our environment. Co-creation has become increasingly essential for architects because it enables dialogue with users, which was not always the case.[30]

1.1.3 Case Study

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. [32] 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.

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. [33]

2.1. Research Approach

People 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 temperatures in the cities, are issues that future urbanists and architects need to address.

The neighborhood of Estação in Faro, 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 on the city's waterfront. [34] 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 separate values between older and younger generations.

2.1.1. Research questions

The research aims to understand the values of the 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 the nature of different generations influence the emotional attachment to Estação, Faro, and support the redesign of a vacant building?*

Each sub-question is researched by another student. Working together aimed to develop more advanced and deeper investigations during the fieldwork in Faro. Nevertheless, the goal of graduation is to develop the individual design. Sub-question number four is researched by the author of this booklet:

1. How can an intergenerational relation be created by using the values on the 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?
- *What are the values of children on nature?*
- *What attributes of nature do children prefer to redesign a vacant building?*
- *How do those values and attributes enhance children's well-being?*

2.1.2. 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 seeks to gather information about all age groups with the most suitable participatory gaming methods. It empowers participatory gaming decision-making in design processes (Fig.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.

2.1.3. 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. The following documents were established to fulfill ethical requirements: an Ethics Review checklist, Data Management Plan, and an 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 HREC application (Human Research Ethics Committee) was prepared as recommended by the Delft University of Technology.

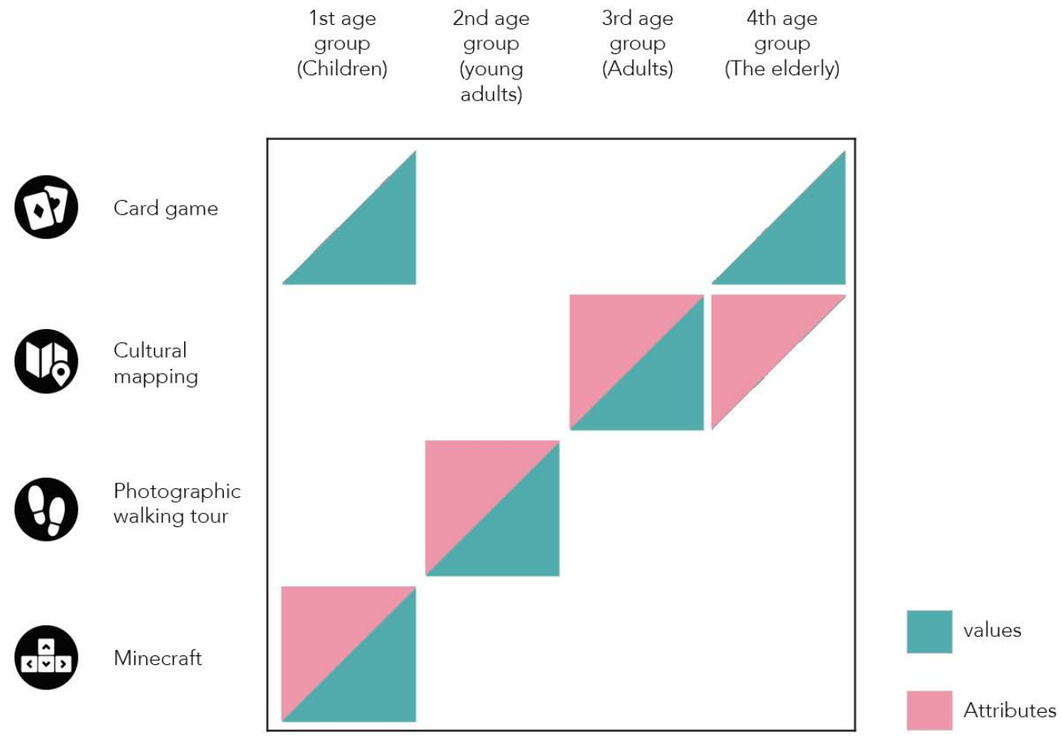


Figure 5: Diagram with different generations and methods.

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") [35] 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 (Fig.6)

The proposals on these cards contain actions to take regarding the city of Faro, e.g., organizing events, making changes to buildings, or changing city policies. These proposals are based on nature-based solutions (NBS) from the Urbinat catalog [36] and are completed with other actions that might want to be explored further in the design phase. Each of these proposals has been linked to the values framework by Pereira Roders e.g.; the NBS green walls have been linked to the value ecological. This way, 72 cards are equally distributed

Co-authors of Chapter 1 during the research in the archive of the Municipality of Faro. From left: Marloes Drijver, Willem Elskamp, Tao Qiyang

among the values to ensure that the results will not be biased towards one or more values and to increase the chances of recognizing each.

Participants play the game in groups of 4 to 6 people. The group will assign one person to play as the "mayor" while the other players will be their "advisors." Each game round will start with the advisors randomly taking five cards from the deck. From these cards, they choose one card that each of them will propose to the mayor. 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 cards chosen by the advisors and those accepted by the mayor will be noted and used to understand the group's values. Besides this, the negotiation process can be used to understand the thoughts behind the choices.

Figure 6: The card game method tool.

2.2.2 Minecraft

In 2012, the United Nations Human Settlements Program (UN-Habitat) started an innovative partnership with the Swedish computer game company Mojang AB, which developed Minecraft. In the project called "Block by Block," UN-Habitat implements "Minecraft as a community participation and engagement tool in the design" [37]. The workshops engage the local community to provide their perspective on their neighborhood and provide input for architects to develop more inclusive designs. The "Block by Block" methodology creates an opportunity to embrace the ideas and needs of "the communities to turn neglected urban spaces into vibrant places that improve quality of life for all." [37]

Using games in the research process explores stakeholders' values of different ages and occupations. Gaming is a participatory method that enables co-creation in redesigning the urban landscape. 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 enabling them to be part of the design process. [38] Minecraft, as a tool for visualization and collaboration, can provide possibilities for opening a debate between children and architects. [39] 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. Using games as a medium can provide possibilities for opening a debate between different community members, which very often is not easy because of the generation gap.

There is relatively small research about engaging children through Minecraft or other geo-games in design processes. Nevertheless, the potential of this tool is already recognized by some academics. One of the examples is an experiment executed in Brazil, which was focused on engaging children in the co-design process of urban development and testing the possibilities of Minecraft as a tool to enable the dialog between them and the architects. A study in Brazil

showed that Minecraft made it possible to motivate and involve children in the city planning process. Children quickly found themselves in the virtual version of their city built into the program. The most important conclusions drawn from this experiment are that children consciously consider nature as one of the components of the environment in which they live and value the ability to walk around their city. In addition, the experiment confirmed that Minecraft could be used as a tool to engage residents in discussions about the future of their place of residence. [40] A similar approach will be taken in field research in Faro.

The workshop aims to determine which values and attributes are essential for children and provide a fundament for further development of the design process. 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 cards aim to learn about the values and attributes essential to children. Secondly, children will redesign the vacant building and its area using Minecraft. Children will be asked to make the building and the area greener and give the building a new function (Fig.7).

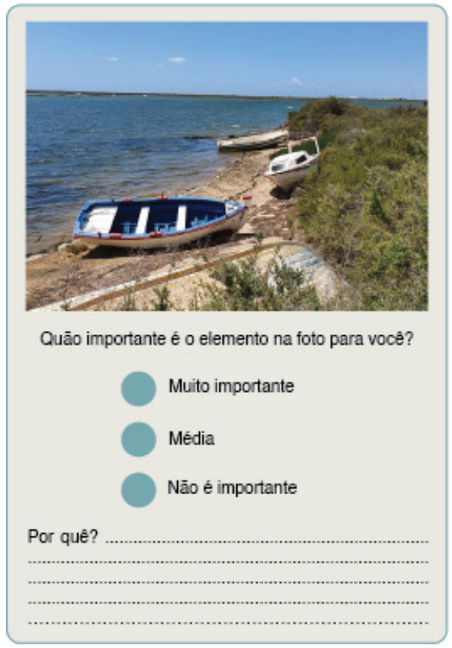


Figure 7: Minecraft workshop and example of a card used during the workshop.

“Minecraft is easy to use, and people of all ages, backgrounds and education levels can pick it up quickly. It is a surprisingly effective and cost-effective way to visualize a three-dimensional environment in a format designed for rapid iteration and idea-sharing. Minecraft helps neighborhood residents model their surroundings, visualize possibilities, express ideas, drive consensus, and accelerate progress.” [37]

2.2.3 Cultural mapping

Cultural mapping is a method suitable for adult and elderly participants familiar with the Estação neighborhood (Fig.8). In preparation for not able to engage a workshop of neighborhood residents during fieldwork, the research develops both workshop and street interview approaches for the cultural mapping method. 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. The second step is to invite participants to answer “yes” or “no” to five questions like “whether I love Estaco” and ”I want to stay here” to measure their level of place attachment and also bring the definition “attachment” to them. Based on the number of yes and no answers, they will be asked to choose the same number of positive and negative attributes which support their choice and further explain the reasons, in which case the answers related more to place attachment can be coded.

This method can provide two groups of expected results: the first is the different values with their frequency through coding the values in explanations; the second is the place-attachment hotspot map with the location information about primary attributes.

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. Along a fixed route, the tour will lead through Estação for approximately 45 minutes (Fig.9). This route is based on the idea of first exposing the participants to a more urban area (containing less nature) and ending up in a more natural environment near the waterfront. People will be asked to take photos 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. The app 'Wikiloc' will be used to collect each participant's data. The participants can take a photo with this app, and the tool will automatically assign the exact location of each image. They will also be asked to add a short description to each photo to explain why the specific photo was taken. This way, both attributes and values of emotional attachment towards nature will be derived during the tour. By using 'Wikiloc,' the data collection after the tour will be more convenient because the photos and the locations are visible.

Figure 9: The route of the walking tour method.

3.1. Empirical Research: Cultural Significance Survey

This chapter first explains the engagement process with stakeholders. Then, for each age group, there will be a description of how they were engaged and which games they played. Furthermore, the research results will be shown by comparing the four methods. This is divided into values and attributes.

3.1.1 Engagement with 1st age group

Children were considered relevant stakeholders because urban planning hardly considered their perspective. Children's opinions are often regarded as problematic, and their voice is underestimated. [41, 42] The research focusing „on the impact of children's ideas on the design process or on the architects themselves" is still limited. [43] Involving children in the design process develops their social competencies, facilitating later societal functioning. Allowing a child to participate in various social activities is an important element of upbringing. [44] "Kids engage in all the same aspects of modern life and the environment around us that adults do – and certainly more than just playgrounds. They are influenced by the world around them, just like adults. So we should honor their right to participate and have a voice. After all, we are creating healthy places for the whole community to live, work, and play, including children."[45] A workshop was organized in school, Escola EB 2,3 Dr. José Neves Júnior, which is not in the Estação neighborhood but still very close to it. However, it was not an obstacle

for the research because the area is well known due to the scale of the city, the small distance to the historic center, and the train station's location, which many students from the school use. The group consisting of 22 children aged 14 was divided into two groups (Fig.10, p.28). 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. This way, playing the card game and Minecraft was possible. Then, each group exchanged so everybody could experience working with a different method. The time constraints influenced the final results because some incomplete questionnaires 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 4 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. During all activities, it was observed that children could quickly adapt to the form of the workshop and understand the research goal. Moreover, they were firmly devoted to developing appealing designs, and it was visible that they enjoyed the workshop. Furthermore, the card game allowed them to use many of their assets, like the ability to discuss ideas or find the correct arguments. Additionally, they expressed their empathy for others by being willing to find solutions and make decisions that would benefit all.

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 regarding the values of 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 the 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 (Fig.11, p.31). The result of this engagement arose an interesting opportunity to compare the results of the locals and non-locals.

The walking tour was held two times, the first one with the locals and the second one with the non-locals. After a short introduction about the tour's goal and when they all successfully downloaded 'Wikiloc', a paper was given to them with a short overview of the route and the tasks. They were also told to take approximately twenty photos during the tour to make the comparison of the data more coherent. During the walking tour, the participants stayed more or less together but were asked to make decisions and photos on their own.

Figure 10: Workshop with children in school, Faro.

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 less formally, through which people were more open to sharing their opinions and memories. Daily talk with people working in shops around the neighborhood was another interviewing strategy, allowing us to conduct interviews with 12 adult participants (Fig.12).

As part of the public engagement, we found that the interviewing activity also significantly influenced the site and residents. Initially, our researchers felt guilty about taking up the interviewer's time but later found that many participants enjoyed it. Some of the participants at the bar party were very happy that our presence gave them a new topic and started to interact spontaneously based on this. Some other participants supported this environment-related research, believing that the community needs such attention and discussion to improve.

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 (Fig.13).

3.2 Results & 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 [27] 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). [28] 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 (Explained in par. 3.2.3.).

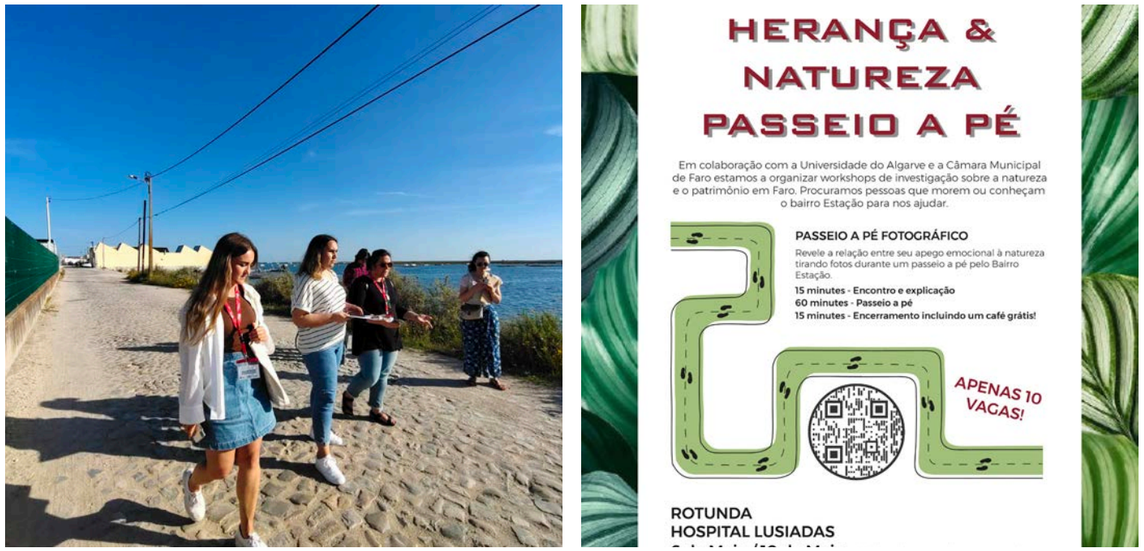


Figure 11: Poster and the walking tour with young adults.

Figure 12: Street and shop interviews with adults.

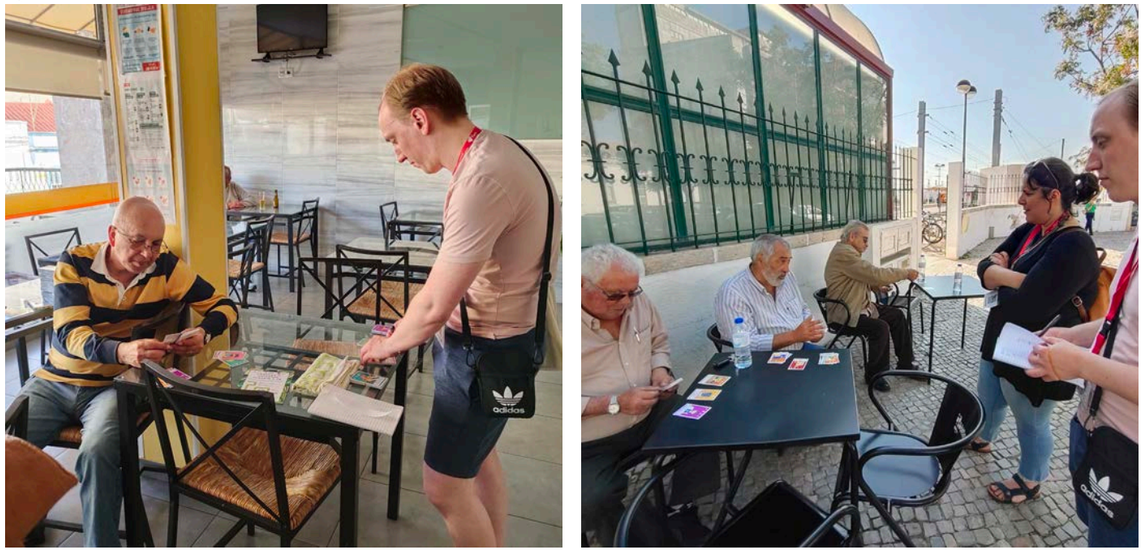


Figure 13: Workshop with the elderly.

3.2.1 Values

As explained previously, the research described in this chapter was conducted using mixed methods within a group of four students. All data were analyzed together to compare the results of four methods and four age groups. However, this thesis focuses on the Minecraft workshop and the information it has provided. To understand the principle of the analysis, we explain in a few examples how words are translated into values. Cards with photos and questions were used during the Minecraft workshop to better understand values (Fig.14, p.33). Children were divided into two groups of eleven. Each participant received nine cards. Children answered why an element or space in the picture is essential for them. Those sentences were translated from Portuguese to English and coded (Fig.15). Those words were collected and arranged based on the importance marked by children—this way of working led to the data set, which enabled the comparison between different group ages. All data collected from cards and Minecraft models are in Annex 1.

"(...) place where children can socialize and play with each other."

Value: social

Secondary value: emotional, collective

"Green space is important for our planet."

Value: ecological

Secondary value: existential

Value: ecological

Secondary value: spiritual

"(...) it's a good space to hang out and it's good for the environment."

Value: social

Secondary value: emotional, collective

Value: ecological

Secondary value: existential

Figure 15: Words analysis.

Figure 14: 198 cards/questionaires to analyse.

In the first part of the results (Fig.16, p.35), 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 economical. 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 as ecological, aesthetical and economic.

However, these values still have some significant differences between the younger and older age groups. 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 might be an example of generational conflict when the children's perspective is enormously different from their parent's. The research results confirm this contrasting approach in the context of the contemporary climate change narrative and the disappointment of the young generation with past generations' decisions. Furthermore, the 2nd group considers social and economic values the least important, while 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%.

Combining the cards (questionnaire) and Minecraft allowed children to recognize the full spectrum of values. This is significant in the context of a better understanding of possible input from children in architectural discussions. Nevertheless, this thesis focuses on the most significant values: social and ecological (Figure 17).

Figure 17: The most significant values from the research. Adapted from Pereira Roders.

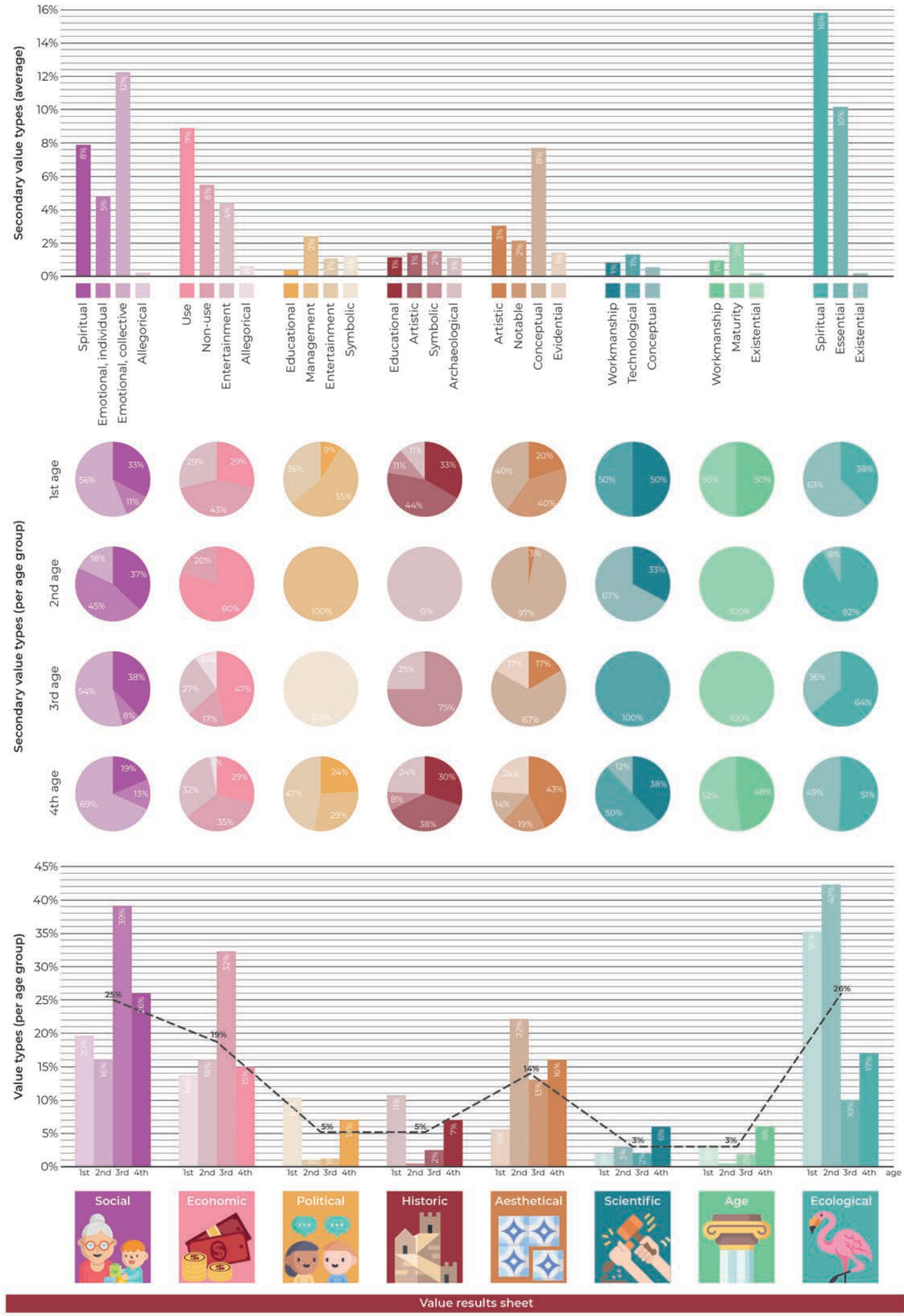


Figure 16: The results sheet of primary and secondary values.

3.2.3 Attributes

The methodology used to code attributes is the same as in the case of the values and resulted in comparing all the attributes collected for all the groups (Annex 2). Children during the Minecraft workshop designed the courtyard and described their designs (Fig.18, p.37). Their explanations in connection to the designs were coded and assigned to specific categories (Fig.19).

Attribute: (T) Asset-natural element

"break the ground to create a pool (with dolphins), creating a garden (with benches)"

Attribute: (T) Asset-natural element

Attribute: (I) Social-use

Attribute: (T) Asset-natural element

"put trees, bushes and flowers at the entrance, community garden"

Attribute: (I) Social-use

Attribute: (I) Social-community

Attribute: (T) Asset-natural element

"increase the green space - plant trees - renovate the main patio into a green space"

Attribute: (I) Social-use

Figure 19: Words analysis.

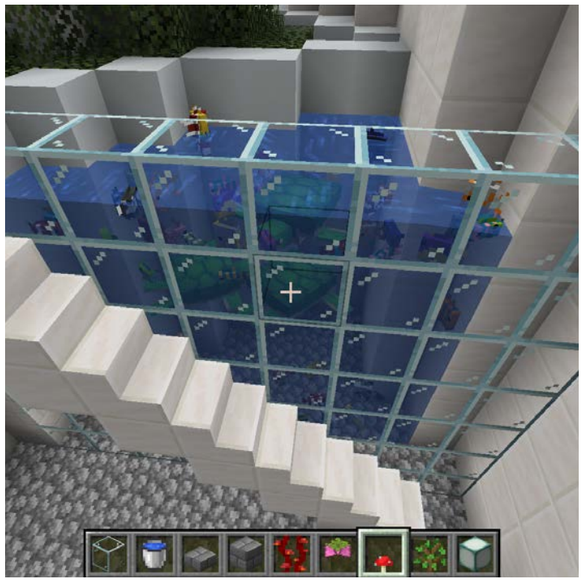


Figure 18: The redesign results of the Minecraft workshop.

The chart shows attributes used by children in the redesign assignment during the Minecraft workshop (Fig.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 Ria Formosa Natural Park neighborhood. 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.

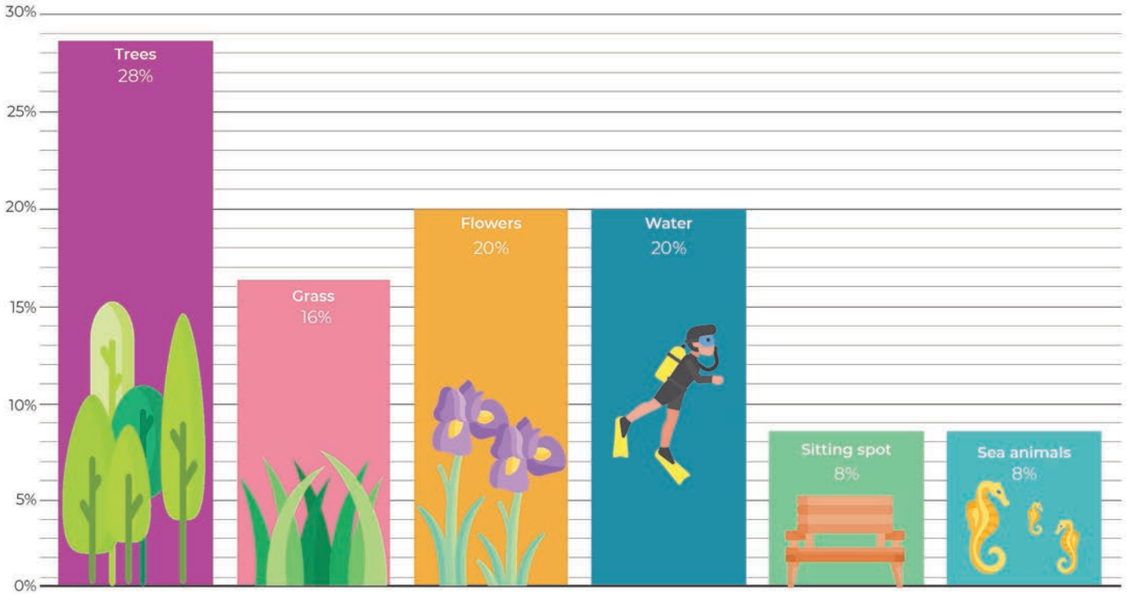


Figure 20: The comparison between Minecraft workshop redesign attributes.

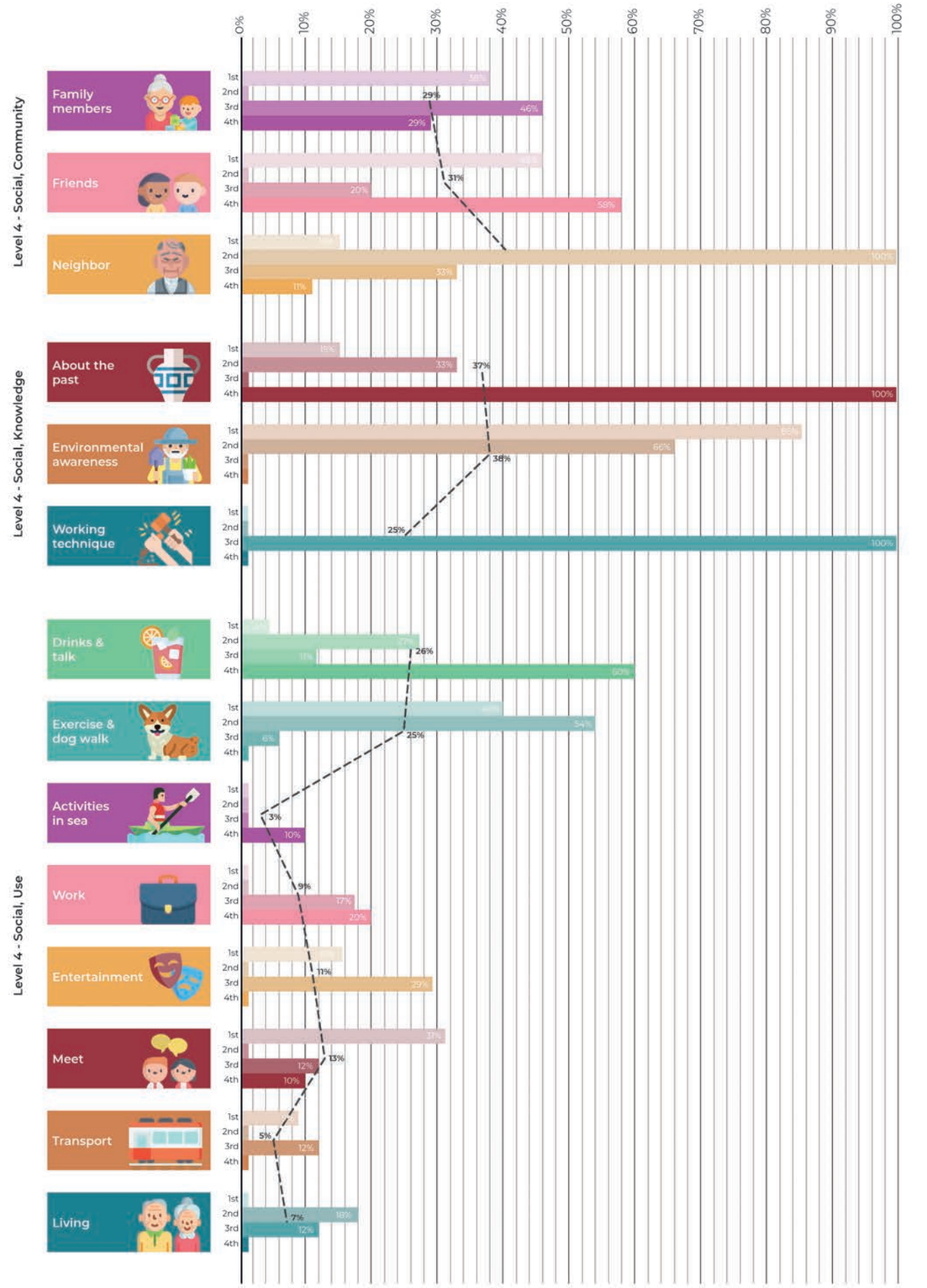
A collection of attributes is presented from general to specific natural assets (Fig.21, 22) and discussed from the intergenerational perspective to understand the similarity and differences between adults and the elderly. In the first level of attribute analysis, tangible attributes gain more attention than intangible ones. Most importantly, we could see that the older participants are, the more they feel attached to intangible attributes.

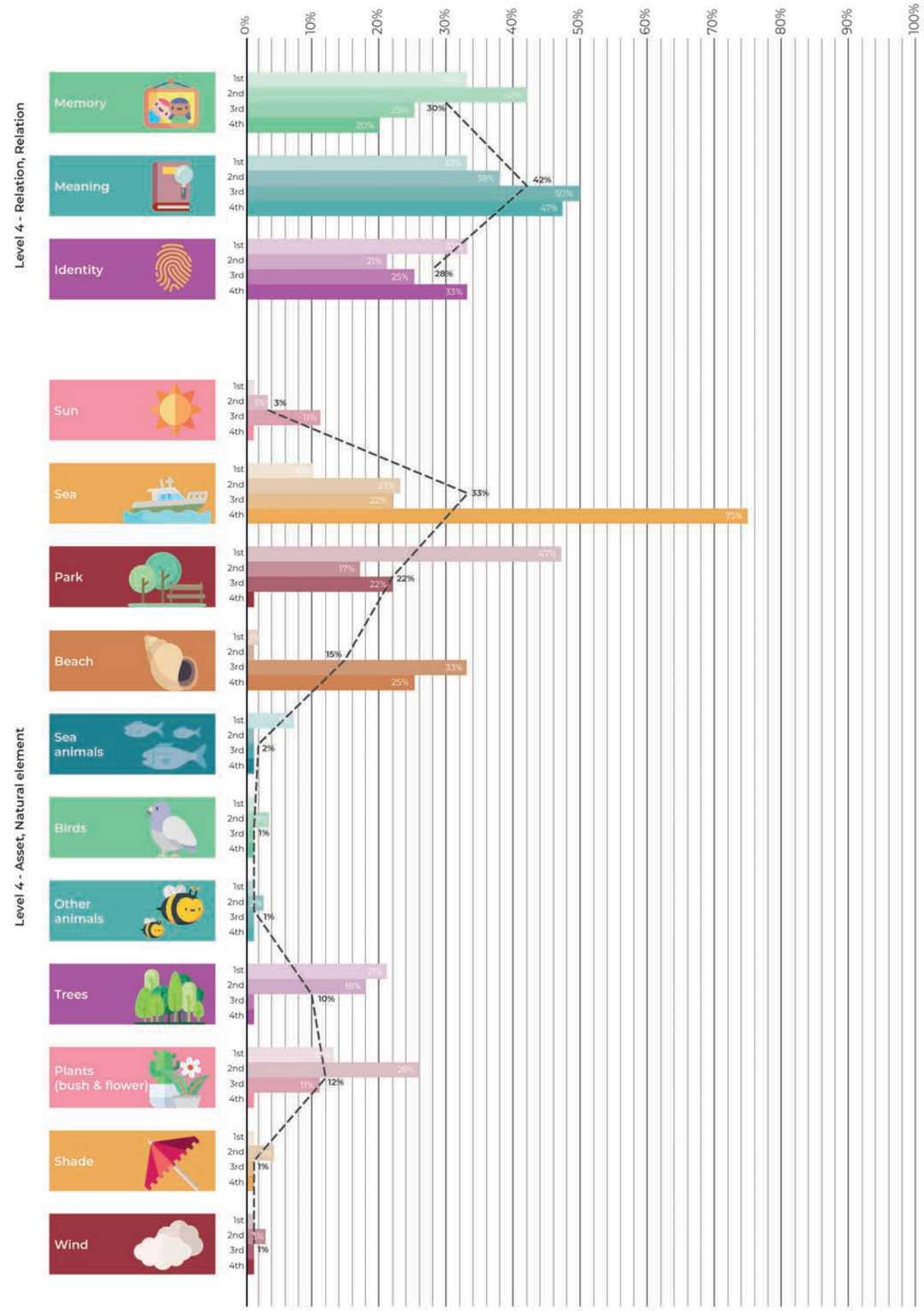
In the second level, with six categories of attribute types, people focused more on (I) societal attributes, (I) relation, and (T) asset attributes, while (T) landscape, (T) area, and (I) process gained less attention. This might result from participants' pragmatic attitude towards their social life. 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 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

Figure 21: The results sheet of three category levels of attributes.





Attribute results sheet

Attribute results sheet

Figure 22: The high-frequency answers for five core attributes.

Estacao (natural asset, relation, use, and community). The high-frequency answers about natural attributes are usually combined with the three types of attributes in the descriptions from stakeholders. 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, older people are more attached to (I)relation-relation attributes because of memory, meaning, and identity. This result indicates 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.

Then, where are the locations of these attributes? Through the hotspot map for place attachment with natural and non-natural attributes (Fig.23). 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 only feel attached to natural assets 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 24 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 24: Attribute timeline of a walking tour.

Figure 23: The hotspot maps for place attachment.

4.1. Conclusions

This paragraph aims to formulate a conclusion for the research and address answers to all questions. Finally, the main question will be answered, and further developments for the redesign will be discussed.

The conclusion focuses only on the four highest-rated values: ecological, social, economic, and aesthetic (Fig.25). 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 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 were 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.

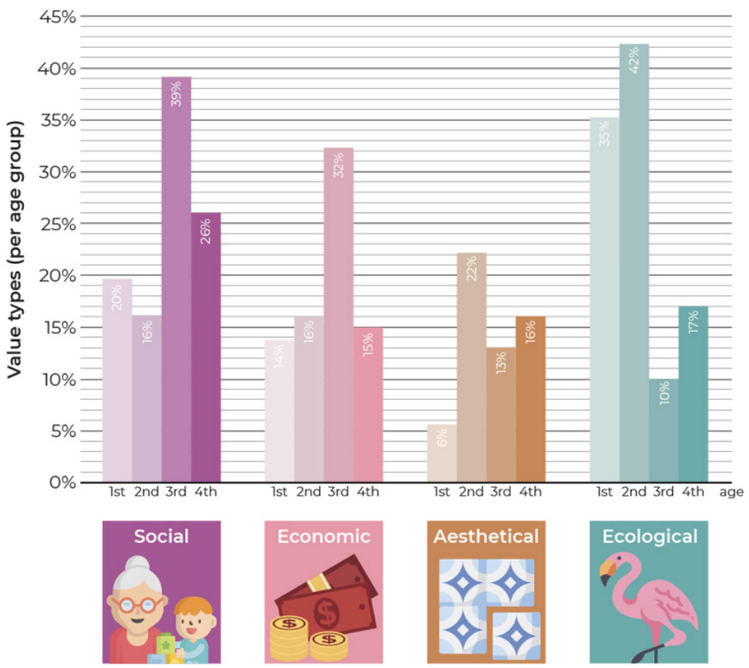


Figure 25: The four highest-rated values from research.

Research 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 relationship 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, 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 the ecological and social values of nature. Those values indicate that for the redesign of the vacant building, an integrated approach to architecture is fundamental. Considering the results, redesigning 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. The redesign of the vacant building should consider a design that would create a connection between the building and the outside, where the boundaries between inside and outside are not rigid.

- *What are the values of children on nature?*

The ecological value appears to be one of the most meaningful to children, according to our research. Surprising is their environmental awareness and understanding of the importance of nature for a healthy environment. Furthermore, outcomes of the research show that nature is a catalyst for social value. Children consider spending time outdoors and meeting their friends in a green and natural environment as inseparable elements.

- *What attributes of nature do children prefer to redesign a vacant building?*

Research indicates the following elements: trees, grass, flowers, water, sitting spots, and sea animals. All those elements were used in the redesign task in Minecraft. Analysis of the questionnaires shows the connections to those attributes. It can be stated that what children think is coherent with what they do. Attributes preferred by children are focused on the outside part of the building. Still, considering the idea that the outside surrounding of the building is its integral part, all those elements can support the redesign of a vacant building.

Interesting is aspect of water, considering location of Estação at the boundary of the Ria Formosa Natural Park. It is remarkable that six groups out of eight, used water in design. The presence of water in children's redesign can mean that they would like to re-establish the relation of the neighborhood with the lagoon. Additionally, it might suggest that children have strong emotional attachment to the lagoon.

- *How do those values and attributes enhance children's well-being?*

Children see green spaces as places to meet their friends and do sports. All those aspects are ingredients that build up our well-being. As explained at the beginning

of this chapter, spending time outdoors in green supports our physical and mental health. Social connections are elements of better well-being. The influence of sports on well-being is highly important, that talking about well-being is not possible without mentioning physical activity. Research indicates that children's values and attributes stimulate them to use green areas and share this experience with others.

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 what 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, and economic values, and intangible attributes are relevant to natural assets. In addition, the value overlap 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 redesigning various vacant buildings in the Estação neighborhood.

4.1.1. Minecraft as co-creation design tool

Part of the conclusion assesses Minecraft's advantages and disadvantages as a co-creation tool. Minecraft on its own would not allow the collection of all data described in this chapter: values and attributes. We have been aware since the beginning of the process that Minecraft needs additional tools to complement each other. The workshop conducted in Faro aimed to gather all possible information, considering values and attributes. It was possible to implement cards, which allowed a search for values and partly for attributes. Minecraft was beneficial for understanding the attributes and enabling children to co-design. The Table 1 on next page shows Minecraft's advantages and disadvantages based on our research in Faro.

Minecraft, as an independent tool, is beneficial in exploring design ideas among children and collecting information about tangible attributes. However, if researchers strive for a complementary approach, cards/questionnaires are helpful tools for assessing the values. It would be interesting for further research to execute a more extended workshop, where there would be more time for conversation with children and more time to finish all tasks. Furthermore, the form of cards would be worthy of exploration because there might be possibilities to make them more engaging and inspiring for children. Although the school gave time constraints, it was possible with the use of cards and Minecraft to collect children's values and attributes of nature.

Advantages	Disadvantages
Cognitive development • Minecraft gives the possibility to express imaginary pictures by building structures like buildings, landscapes, or fictional worlds. • Colorful game which stimulates creativity and desire to discover new possibilities. • Relatively easy to use (computer or video game).	**Cognitive development** • 45 minutes per group was not enough to finalize questionnaires and designs. • After the workshop, there was no time to discuss their work with children and what could be beneficial to understand their decision-making process.
Accessibility • All ages can play it. • Computer with a mouse is enough to play the game (no special devices are needed). • Minecraft can work on a server, meaning multiple players can work simultaneously.	**Accessibility** • Method was not chosen to be played by older generations, which tend to have difficulties understanding the virtual world and controls in the game. • Children design immediately in the game, making understanding their decision-making more difficult.
Interaction • It can be played in single and multiple players on almost all computers. • Children react positively to Minecraft as a tool and are easily engaged in creating the designs.	**Interaction** • There is a risk of domination of some players over others due to being the "mouse" of the group or having a stronger character.
Exploration • Human perspective in the game. • 3D environment in the game is easier to understand for children in comparison to drawings in 2D.	**Exploration** • Moving in the game is slow due to the human scale; the map only opens up when approaching, making it hard to see everything at once.
Representation • Minecraft lets players build the 3D model and adapt it endlessly. • Due to diverse modifications within the game, which can be used, there are endless possibilities for developing designs.	**Representation** • As a workshop tool is still slow, what makes it is difficult to make extensive interventions at once. • The level of detail in the game is relatively limited, which can lead to misunderstandings about built heritage. • Modeling and detailing the landscape/building/city is time-consuming (especially for less experienced researchers).
Design • Easy tool to show design ideas as a model. • Game uses blocks 1mx1mx1m, which helps in creating abstract environments.	**Design** • Blocks 1mx1mx1m are problematic because of the lower level of detail, making Minecraft more useful in discussions with children in the early design stage.
Value-based Design • Minecraft is useful for showing tangible attributes larger than 1mx1mx1m. • Minecraft helps find the correlation between values and attributes.	**Value-based Design** • Without implementing cards, it would be difficult to assess children's values. • Tangible attributes smaller than 1mx1mx1m can not be detailed in the game and, as a result, are not part of the discussion.

Table 1: Advantages and disadvantages of Minecraft. Adapted from: de Andrade, B., Pereira Roders, A. Values Based Design Education in Gamified Learning Environments. In Teaching Design for Values: Concepts, Tools and Practices. Rocco, R., Thomas, A., and Novas-Ferradás, M. (Eds). TU Delft OPEN. 2022. [46]

Chapter 2: Value - based redesign

1.1. Historical analysis of the existing building and plot

The building at Rua Infante D. Henrique 76 in Faro was designed by Jorge Alberto Ribeiro de Oliveira around 1950 for the urban public transport company Empresa de Viação Algarve, EVA (Fig.26, 27). The starting point for the analysis were drawings from the Municipality Archive. Still, that information was complemented by photographs of the current state, Portuguese websites about architecture, and the book “Regionalism, modernism and vernacular tradition in the architecture of Algarve, Portugal, 1925-1965” by Ricardo Manuel Costa Agarez.

Jorge Alberto Ribeiro de Oliveira was an architect for the municipalities of Faro, Olhão, Portimão, and Vila Real de Santo António between 1943 and 1957. His architecture can “be considered as conservative in the 1940s, and richly eclectic in the 1950s.” [47, p.166] Oliveira’s work had an important and long-term influence on the architecture in Algarve, especially since he strived to give the region more individual identity. As an architect, he designed different types of buildings: “schools, nurseries and kindergarten, social service and healthcare facilities, stations, market halls, administrative buildings, religious structures, housing, and urban renewal operations.” [47, p.167] Jorge Oliveira was influenced by Spanish architecture represented by “Revista Nacional: heavy compositions based on symbols of the Spanish golden age, often disproportionate to the size and purpose of the building, and equally dense combinations of these nationalist references with regional specificities.” His architectural translation resulted in eclectic elevations, which played “a representational role while evoking regional identities by providing controlled, modernized, at times fantasized versions of them.” [47, p.167] From 1950 there was a visible shift in the architectural language of Oliveira’s design from conservative regionalism to modernist regionalism. Between 1950 and 1951, some of his projects were suspended and handed over to younger architects representing post-war Algarvian style.

“Oliveira repeatedly said that he wanted his architecture to be “modern,” while being clearly “Portuguese.” It should be modest, economical, sober, almost frugal, and avoid the expensive and unnecessary decorations that, he felt, predominated in his time – but not destitute of the local colour and grace, by which he sought to integrate his new works with the extant “local environment.” If this was one outstanding concern, the other was a strict obeisance to what he called “the most serious principles of Architecture” and, above all, to one rule: the face of the building should at all times have an expression appropriate to its function.”” [47, p.172]

EVA building

Analysis of the historical drawings allowed us to reconstruct phases of the development of the interior of the building. The building was originally designed as a bus garage and storage. What is striking about those floorplans is the open plan of the building, which provides not only many possibilities for the organization of the plan, but was forced by the sizes of the buses (Fig.28, p.50). In 1953 architect Jorge de Oliveira was asked to redesign the upper floor of the building into offices for the company with cash desks to sell tickets (Fig.29, p.51). This resulted in minor changes in the façade because the architect designed stairs with an entrance to the office from the street (Fig.30, p.52).

Figure 26: Former EVA building - current state (April 2022).

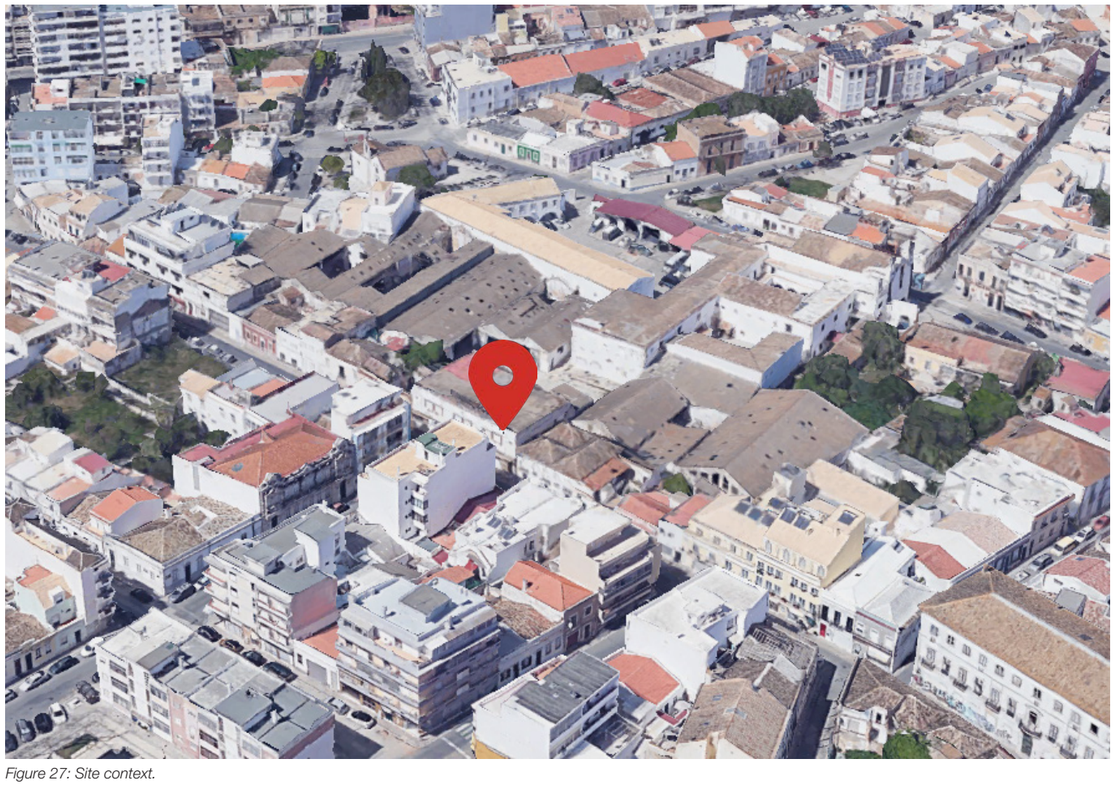
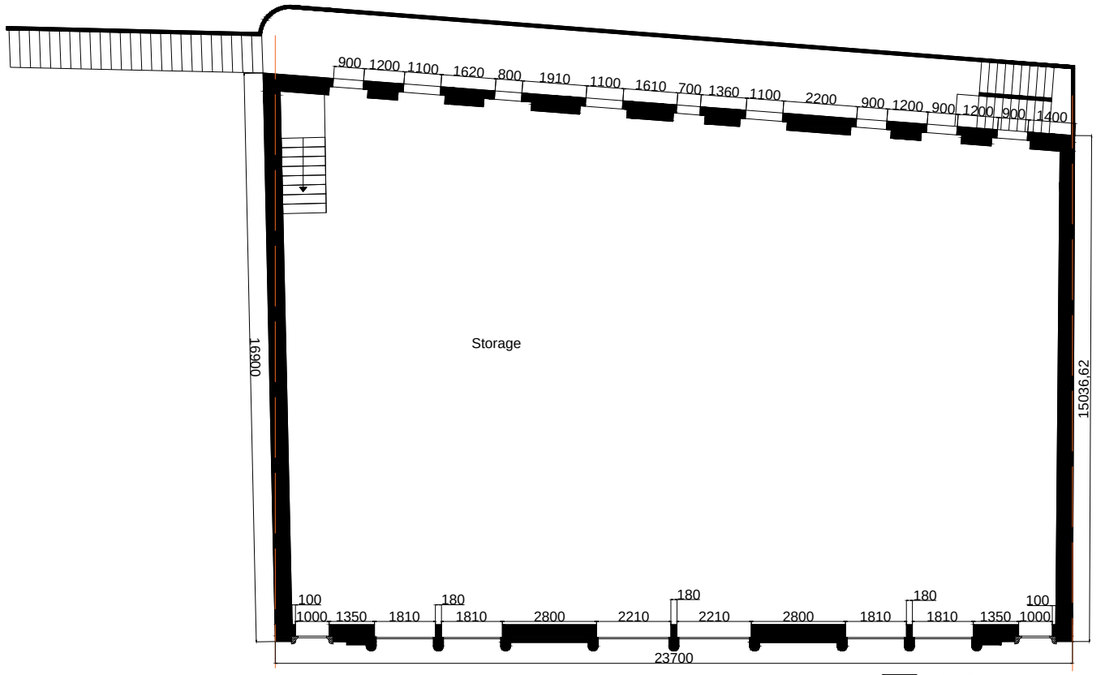


Figure 27: Site context.

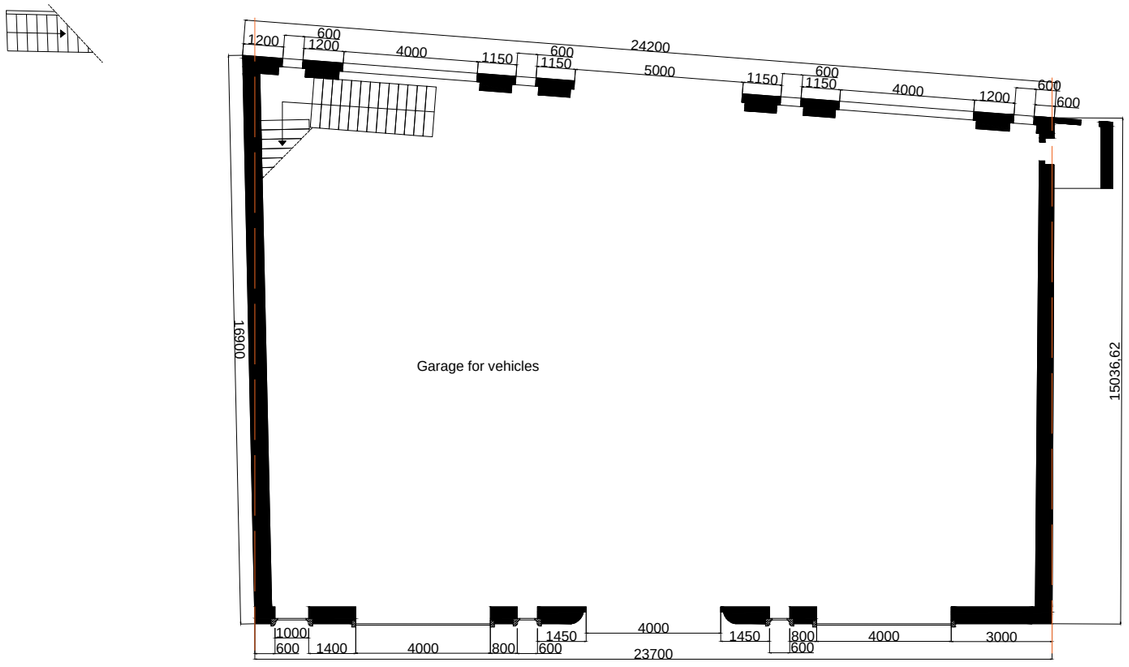


Empresa de Viação Algarve - urban public transport company

Original building

*Orange lines idicates angle of the external walls

1st floor
Scale 1:150



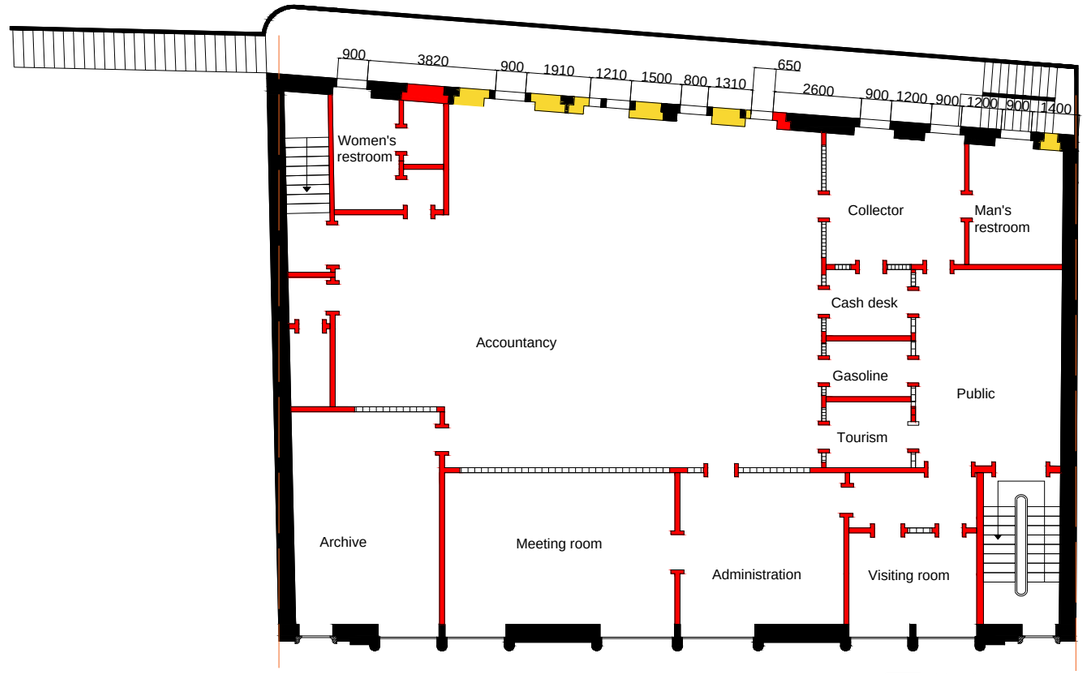
Empresa de Viação Algarve - urban public transport company

Original building

*Orange lines idicates angle of the external walls

Ground floor
Scale 1:150

Figure 28: Floorplans ca.1950, redrawn based on the archival drawings.



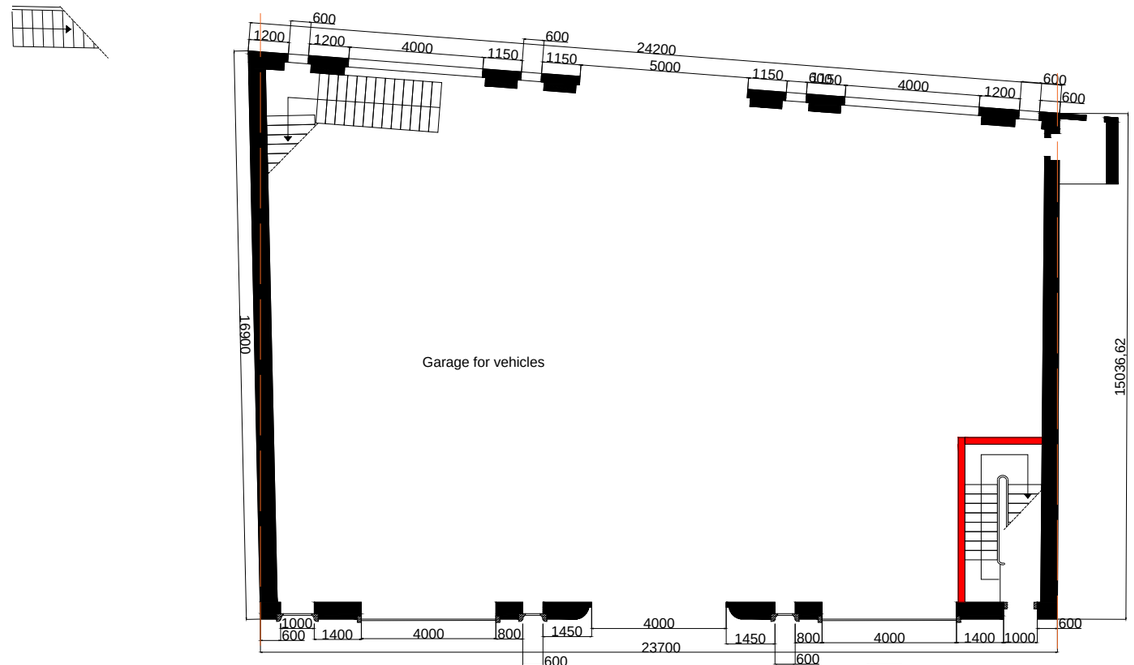
Empresa de Viação Algarve - urban public transport company

1953 - intervention by architect Jorge Alberto Ribeiro de Oliveira

*Orange lines idicates angle of the external walls

1st floor
Scale 1:150

Existing walls
Natural stone
Added structures
Demolished structures



Empresa de Viação Algarve - urban public transport company

1953 - intervention by architect Jorge Alberto Ribeiro de Oliveira

*Orange lines idicates angle of the external walls

Ground floor
Scale 1:150

Existing walls
Natural stone
Added structures

Figure 29: Changes in floorplans, 1953, redrawn based on the archival drawings.

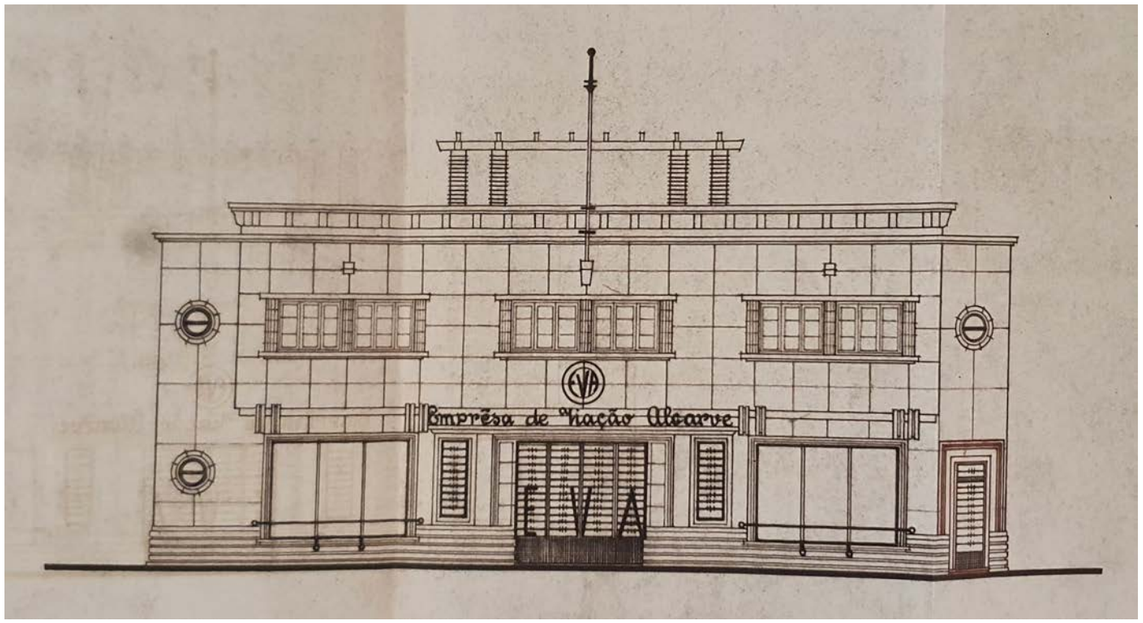


Figure 30: Changes in front facade, 1953. Upper drawing shows original facade. Bottom drawing shows facade after proposed changes in floor plans. Archival drawings [48].

In 1961 another transformation was designed by architect Hermínio Beato de Oliveira (Fig.31, p.54). The first question during the analysis was if there are some family connections between those two architects because of the same surname. The research excluded this theory. Most probably, there is a coincidence of surnames, especially since it seems that Oliveira is a popular surname in Portugal. It can be assumed that Hermínio took over some of Jorge's projects after he stopped working for the municipality. Hermínio Beato de Oliveira redesigned the ground floor of the building and devoted a lot of attention to the architectural expression of the façade on street level (Fig.32, p.55). He designed new offices and public parts where people could buy tickets. It is assumed that he did not change the upper floor, which Jorge de Oliveira redesigned in the past. In the version from 1961, drawings show glass vitrines, which Hermínio designed to show off the actual information about travel and tickets (Fig.33, p.55).

Currently, the building is not strongly deteriorated. Photographs of the façade show that all the windows are covered, and finishing materials need to be changed (Fig.34, p.56). Unfortunately, it was impossible to get inside the building to analyze the state of the interior.

Site

It was assumed that this thesis would focus on the EVA building and its courtyard. However, the analysis of the historical drawings gave the first hints of information that the plot of the building might be more extensive and contain more structures (Fig.35, p.57). It wasn't easy to find in the beginning since the documents did not have more information. Assumptions were made based on the analysis of the views on Google Earth, but those assumptions seem to complement the drawing from the municipality. The plot that belongs to the building contains many buildings, which assumingly were bus storages. Those buildings are in a diverse state of deterioration. Visually (Google Earth views), it can be said that the facilities are in good condition, but the roofs in some places are collapsed, and elements of roof construction are missing. It was decided that the whole plot would be considered for this graduation project because the size of the property and the amount of the building, as well as the connection with the main office building, provide uncountable opportunities for future development of this place (Fig.36, p.57). Later in the research, it was discovered that one more building, directly on the street, belongs to the plot (building marked in blue, Fig.36, p.57). The building is situated at the address R. Infante Dom Henrique 100 and has another gate that enables buses to drive inside the garage. However, due to the complexity of the project and time constraints of master thesis, this building will not be considered.

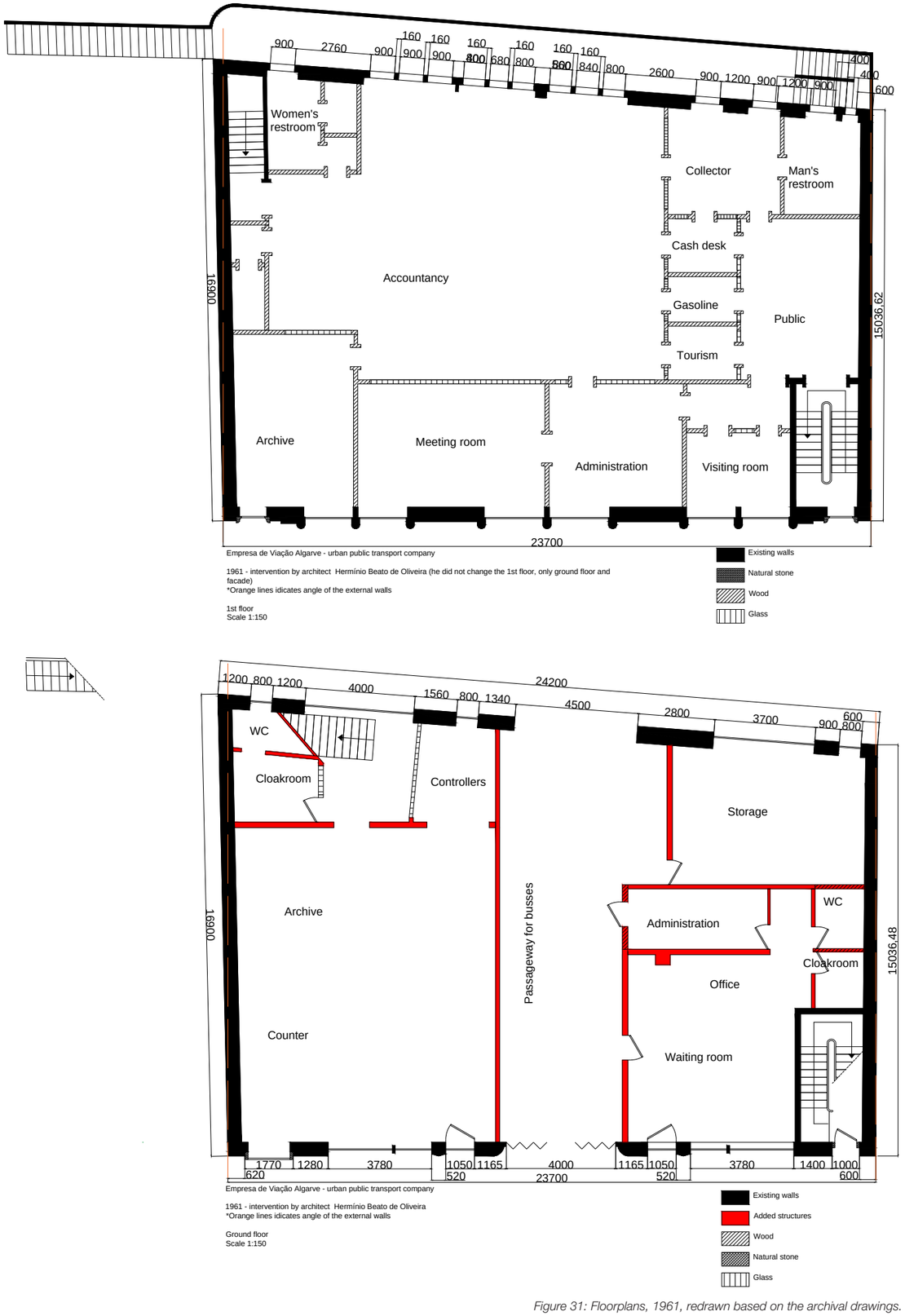


Figure 31: Floorplans, 1961, redrawn based on the archival drawings.

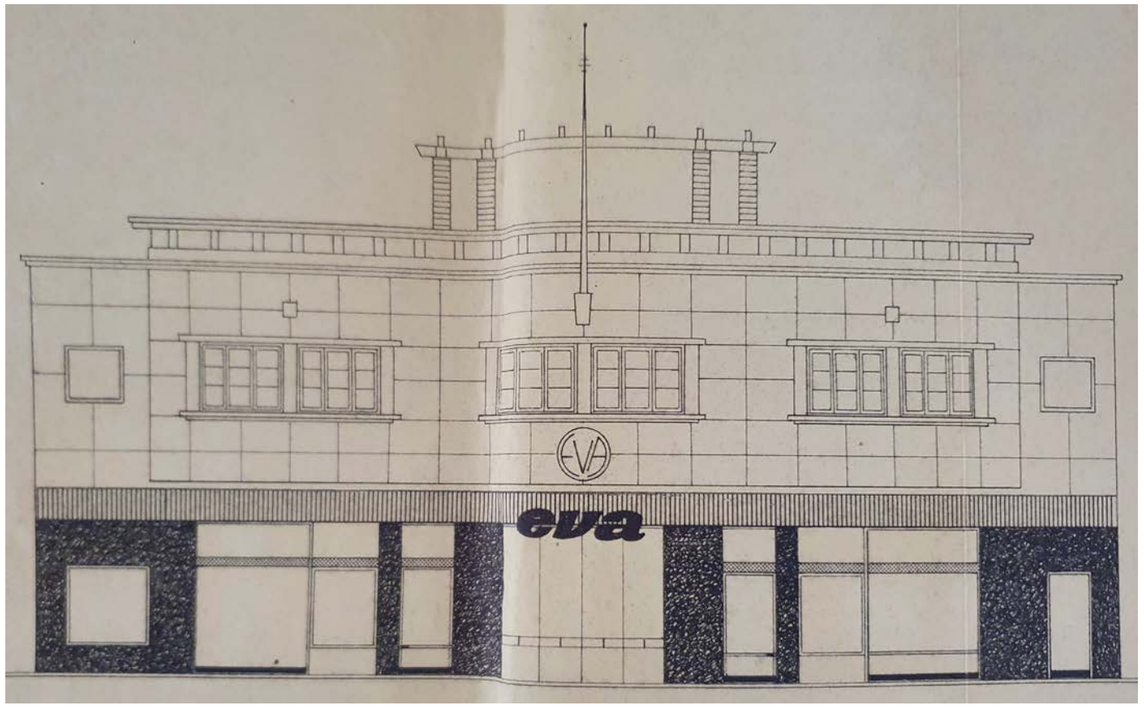


Figure 32: Changes in front facade, 1961. Archival drawing [48].

Figure 33: Glass vitrines, 1961. Archival drawing [48].

Figure 34: Current state of the building. April 2022.

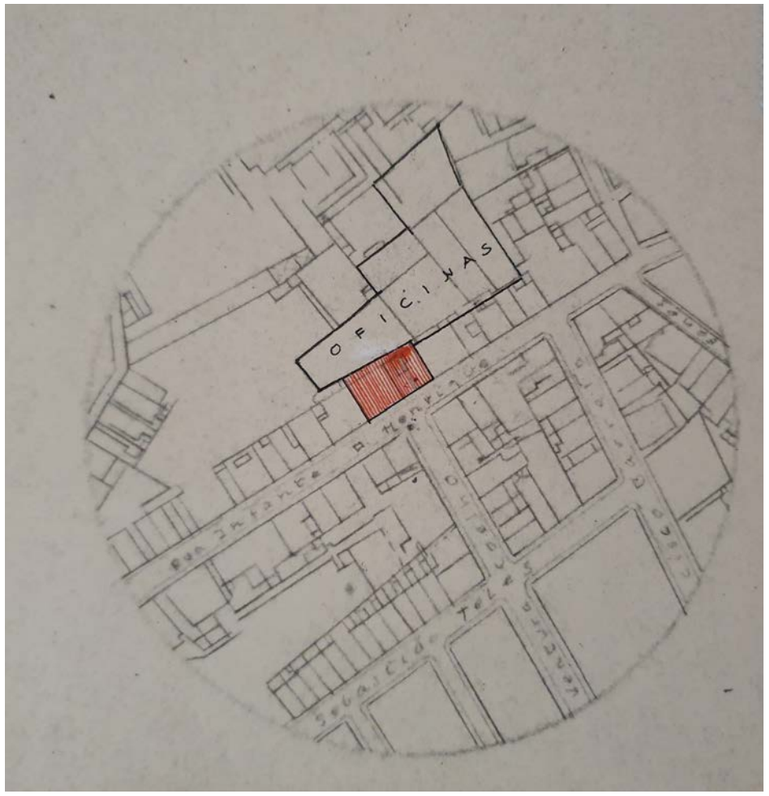


Figure 35: Site context. Archival drawing [48].

Site 1:1000
Current situation

Figure 36: Site context. Plot considered to redesign.

2.1. Side note: Minecraft workshop in “leisure center”

During our fieldwork in Faro, I could participate in an additional Minecraft workshop as a volunteer (Fig.37). Another student from our design studio was also working with Minecraft and children. His project was focused on redesigning a vacant church in Faro. The workshop took place in a “leisure center” for school-age children, where they can come after school for additional classes, spend their time and get support in doing their homework. Thanks to this workshop, I could observe Minecraft’s power as a co-creation design tool. Children were not only highly creative during the workshop but also enjoyed the activity and had no problem understanding the design task. Immediately in the game, they explored their ideas, proving how fast and easy the tool was. This group of children was slightly younger, around ten years old, but Minecraft enabled architectural discussion with them without obstacles.

The space where we were doing the workshop caught my attention because it was a temporary space. Faro is dealing with a need for more suitable buildings, while the city has many vacant buildings. I reflected that children deserve better, more pleasant, and more permanent educational spaces. I am describing this experience because it shows how well Minecraft works when working with children and influenced my work and design. This workshop directed my perspective on education spaces for children.

Figure 37: Minecraft workshop with children

3.1. Municipality’s ambitions & Faro 2027

The municipality of Faro strives to grow and develop by taking many initiatives. One of the most important was participating in the competition for the title of the European Capitol of Culture of 2027. Unfortunately, Faro was not chosen, but their ambitions and desires are not gone. Those goals were also confirmed in conversations with representatives of the municipality of Faro during our fieldwork. This paragraph describes initiatives that will form a fundament of the design, together with values and attributes collected during the research.

The city aims to involve young people through diverse projects to co-design the city’s future, like projects WHISPERING SANDS or CREATIVE RIPPLES. First empowers young people from the Algarve region to travel across Europe in search of knowledge, wisdom, and new ideas, which form a starting point for cultural debate. The second project “is a program on participatory art that aims to develop new strategies to involve communities in the design of the future city, making use of tools from art therapy and participatory art.” [49, p.24] Including the young generation in those processes is one of the fundaments of the agenda of Faro 2027.

Furthermore, the municipality strives to increase the education offer and support the digital transition. “The acceleration of the digital revolution creates an increasing need to adapt the ways of viewing, knowing, respecting, and preserving cultural heritages. We extend ideas from the Faro Convention into the digital sphere. We have already experimented with transdisciplinary teaching, with young people exploring their heritage through architectural reproduction in the online Minecraft game.” [49,p.26] Faro plans further “to create digital heritage projects focusing on intangible heritage: stories, knowledge, practices.” [49,p.26] The project MI.MOMO.FARO “explore new ways of learning, promoting creativity, collaboration and problem-solving in an immersive digital environment” by use of game Minecraft. The goal of this project is to showcase new educational approaches the field of Cultural Heritage and to “create a digital memory for the younger generations of the Modernist Movement in Faro but also in the Algarve.” [50]

Another aspect is an initiative called AÇOTEIAS- Creative Rooftops, which is part of a larger project European Creative Rooftop Network. This project aims “to create creative solutions for the rooftops of cities. These solutions should respond to Europe’s social, economic, and environmental challenges in the near future.” [50] It is an international initiative that includes Dutch cities like Amsterdam and Rotterdam. Municipality wants to bring life to the rooftops, which can be space for various cultural events. [50]

From those ambitions of the municipality, I would like to take further into the design the following ingredients: including young people in co-create the city’s future, education, digitalization, and creative use of the roofs.

4.1. Alternative futures: three scenarios

A combination of values, attributes, the municipality's aims, my experiences from the fieldwork, and my interpretation of all the ingredients led me to design a Youth Center (Fig.38). Youth Center would provide a starting point for expanding educational offers and enabling digitalization. Creating a place for young people would help to include them in co-create the city's future. Children did not make a proposition for the function of the building during the workshop, which is why there was a need to complement that information with external sources like Faro2027. This function of a Youth Centre also aims to build on social value, which is one of the most important for children because the center would provide them with spaces for learning with their friends. The center's program would include open-study areas, group-study rooms, computer rooms, a VR lab, and a lunch room.

Additionally, the roof would be used as a terrace and event space. The courtyard is dedicated to ecological value and will be transformed into a garden for the public. Except for the main building (on the street side), the plot consists of a large surface of facilities and a courtyard. Such a prominent place provides almost uncountable possibilities, which led me to create possible future scenarios for this complex, and for the historic facade of the building. I decided to propose three options, while the function of the Youth center would not change.

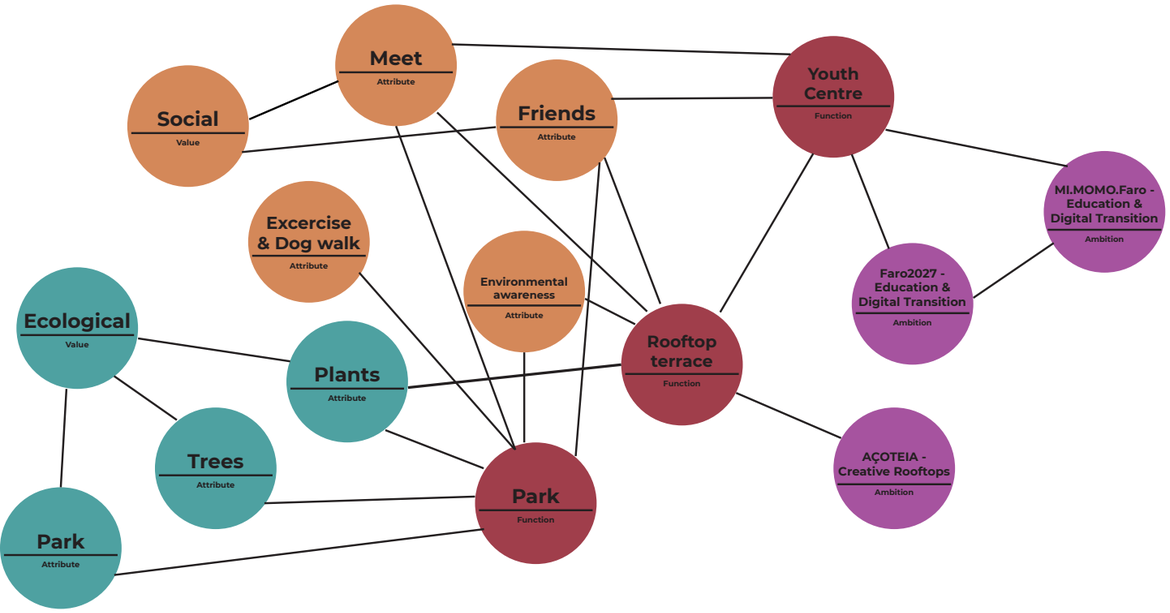
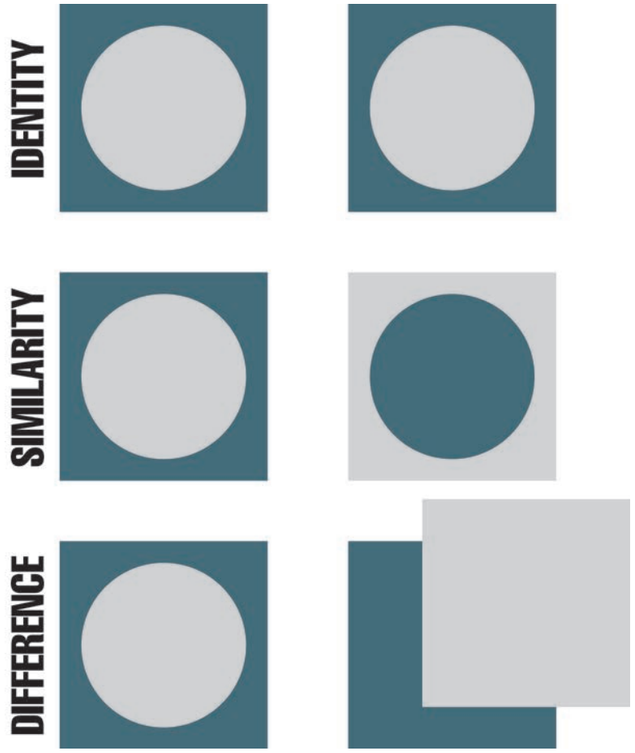


Figure 38: Relationships between ingredients of the design

Creating new scenarios was not only influenced by values I would like to maintain, create, destroy or restore but also by the notion of a relationship. In his book "Landscape planning and environmental impact design" [51], Tom Turner introduced the concept of the relationship between the evolution of design and its context. Those relationships are described by identity, similarity, and difference (Fig.39) Such a simple distinction helps the designer to organize the ideas but simultaneously improves the dialog with stakeholders. Scenarios were developed according to this division.

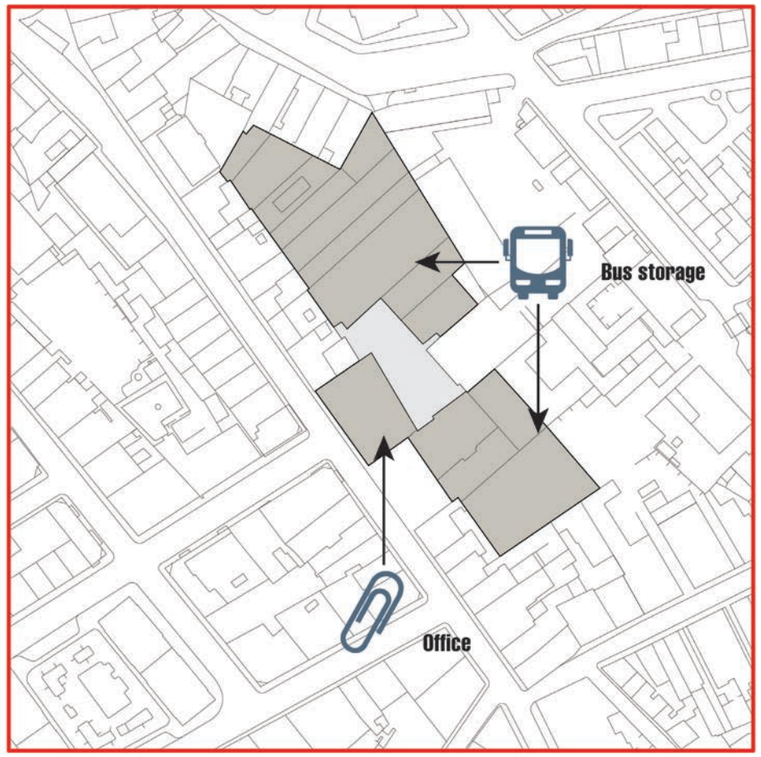
As a starting point, I have analyzed the master plan of the municipality to know if there are rules that should be followed for this building (Annex 3). This

Figure 39: Relationships between the evolution of design and its context. Adapted from Tom Turner, "Landscape planning and environmental impact design"



facility is listed as an "Inventoried buildings in an urban environment." According to the masterplan, "the inventoried architectural heritage includes buildings and urban complexes of architectural, historical, scenic, and archaeological interest." [Annex 3, Article 19, Point 1] Additionally, the building is included in the Historical Center and Surroundings zone, where conservation and valorization are privileged. Although conservation is desirable, the master plan does not set strict rules but demands arguments for the proposed interventions.

Each scenario is linked to the values it represents. It is concluded that the past scenario, emphasizing the main office building, represents historic, aesthetical, and age value. This conclusion is based on the new Master Plan of Faro [Annex 3] and historical background of the architect [47] and the building [48]. New scenarios are the translation of the values and attributes discovered during the research, and they are based on the Minecraft workshop with children (Figures 40-46, p.62-65).

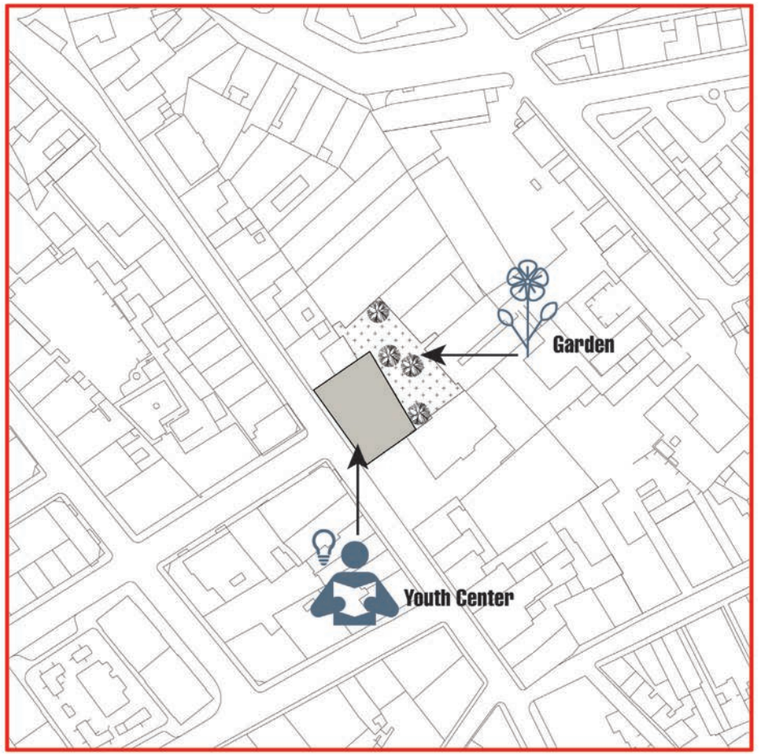


In the past: Travel company headquarters

In the past, the building was the headquarters of a travel company, and garages were intended for buses. The facilities are no longer used for a long time. The office building is still in good condition, although some garages need work to adapt to their new functions.

Figure 40: Functions of the buildings in the past

Represented values



Design proposal 1: Youth Centre with small garden

The proposal is to transform the old office building into a space dedicated to new technologies and shared study rooms. The inner courtyard will be transformed into a garden that can be used by all.

Figure 41: Design proposition 1: Youth Centre with small garden

Maintained values

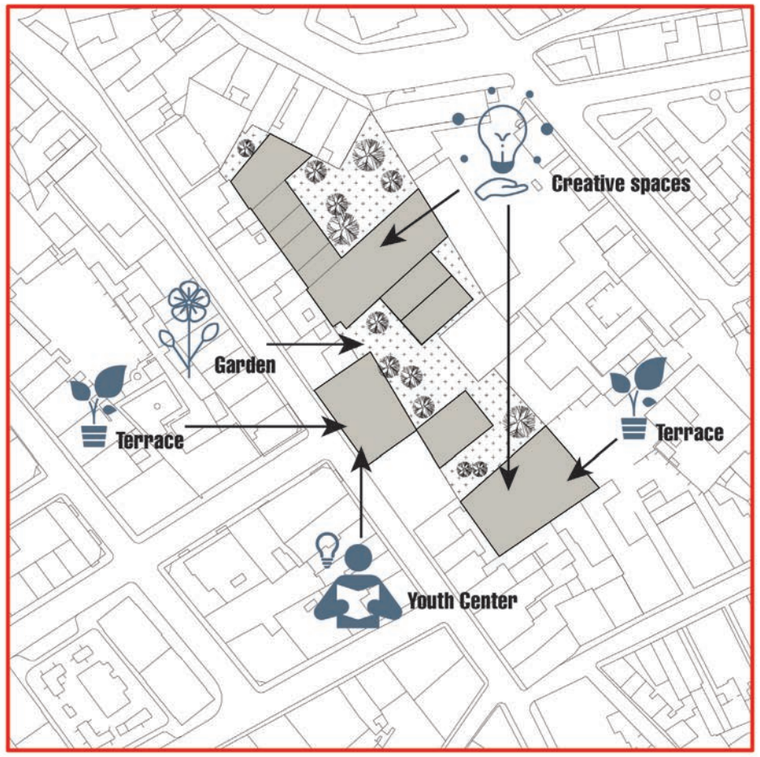
Created values

Relationship to context

Figure 42: Design proposition 2: Youth Centre with creative spaces and garden

Created values

Relationship to context



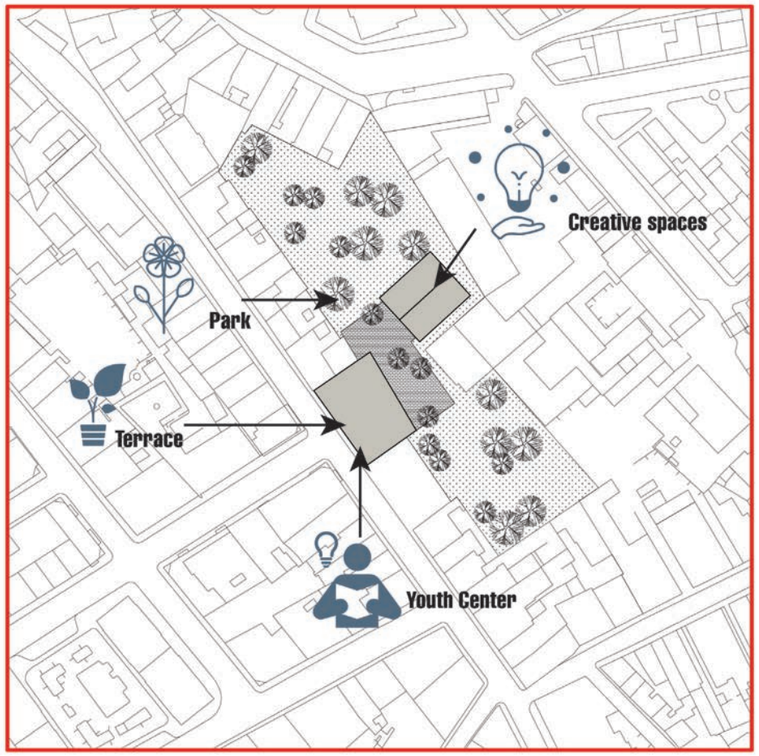
Design proposal 2: Youth Centre with creative spaces and garden

The proposal is to transform the old office building into a space dedicated to new technologies and shared study rooms. Some of the old garages will be demolished to make way for a large garden. The remaining buildings will be used as spaces for creative activities for children and teenagers, such as workshops, yoga classes, exhibitions or movie theaters.

Figure 43: Design proposition 3: Youth Centre with creative space and park

Created values

Relationship to context



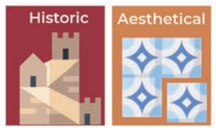
Design proposal 3: Youth Centre with creative space and park

The proposal is to transform the old office building into a space dedicated to new technologies and shared study rooms. Most of the old garages will be demolished and replaced by a small green park. In another building, conditions will be created for carrying out specific creative activities for young people.

Facade 1: Repair of the old facade

The proposal is to renovate the façade but maintain the building's original design. We fix and replace what is in the worst condition, but we do not change the style of the building.

Maintained values



Relationship to context

Figure 44: Proposition for Facade 1

Facade 2: Renovation of the facade and replacement of windows

The proposal is to renovate the facade in a more modern and contemporary style, without, however, changing the original shape of the building. The windows are replaced and a terrace with plants is created on the roof.

Maintained values

Relationship to context

Figure 45: Proposition for Facade 2

Facade 3: Green facade and replacement of windows

In this proposal the façade is totally changed. The entire facade is covered with plants. The windows are replaced and a terrace with plants is created on the roof.

Created values

Relationship to context

Figure 46: Proposition for Facade 3

Chapter 3: Heritage Impact assessment

3.1. Children's evaluation

Based on the proposals discussed in the previous chapter, a questionnaire was developed to allow children to express their opinions about the project. The survey was sent as a Google form to the school where the Minecraft workshop was conducted. The Portuguese version of the questionnaire can be found in Annex 4. Preparing the questionnaire helped one of the Portuguese supervisors, who is a native speaker. In the survey, the children were reacquainted with the context of our design studio and the issues of the building. Children were asked to choose the organization of the entire complex of buildings and the facade of the building. Additionally, they were also asked a few open questions. This paragraph will analyze and explain answers to all the questions.

The questionnaire was answered by 22 people, meaning the entire group that participated in the workshop filled out the form. Firstly, the results of question number 4 will be discussed.

Question 4: What do you think about having a Youth Center in this space? Do you more or less agree? Why? Do you have another idea you'd like to see come to fruition?

It is worth recalling that the function of the Youth Center is the result of the architect's interpretation because children did not give new function to the building during the Minecraft workshop. Despite this, the vast majority of children were optimistic about the idea of a Youth Centre, as much as 86% (Fig. 46). The children found this to be "a good use of this space and would be very useful" and a "place where young people can live together." Simple answers that they agreed with function were the most often; they did not provide longer answers. Answers to this question were concise and needed more insight into why children like this proposition. Nevertheless, few opinions could point to the aspects of well-being:

"it would help young people."
"it is for the good of young people who need to be helped."
"use of a currently unused space for recreational and environmental purposes"
"soccer field"

Some participants are aware of young people's mental health issues and see the need for support. However, it could also be understood in the context of broader life problems. Therefore, regardless of the background of issues that young people must face, it influences their mental health, resulting in their well-being. Furthermore, appreciating the recreational and environmental advantages of the design proposition indicates the need for young people to spend time outside, which also strongly influences their well-being. The offer of creating a "soccer field" strongly connects with aspects of physical health and spending time outside. Such a positive reaction to the proposition of the Youth Centre, where children can learn

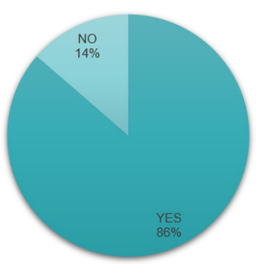


Figure 46: Results of the questionnaire

Question 4: What do you think about having a Youth Center in this space? Do you more or less agree? Why? Do you have another idea you'd like to see come to fruition?

with friends and get involved in diverse activities, could point to the social value, which is essential for the research group. Social contacts and time with peers are ingredients of healthy development and well-being. It can be assumed that the Youth Centre could support the well-being of children from a broader perspective of social interaction. The Youth Center could fulfill not only an educational role and be a place of meetings but could also serve as a place of self-development and psychological help.

For scenarios about the organization of the entire complex, 64% chose design proposal number 3, The Youth Centre with creative space and park (Fig.47). It was a closed question with a single choice. This particular design has the highest amount of demolition. No one chose proposition number 1, where all buildings are kept. Design number 2 gained the attention of 36% of children. Those responses show how coherent they are, with the results from the Minecraft workshop executed a few months ago. Children value green spaces and do not necessarily see the need to keep old buildings. There is a strong correlation between the results of the Cultural Significance Survey, where ecological value was the most significant, and the design proposal choice. Children choose a proposal with the largest surface of greenery compared to other propositions. Furthermore, there is a clear connection between the park in design proposal 3 to the most frequent attributes: (T) asset-natural elements. The presence of natural elements, like trees or water, in a living environment positively supports well-being.

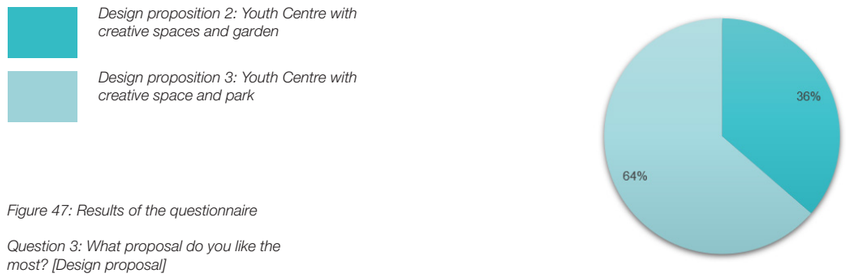


Figure 47: Results of the questionnaire

Question 3: What proposal do you like the most? [Design proposal]

Most children, 41%, chose Facade 2, describing it as "the most beautiful" and "most visually pleasing"(Fig. 48). On the other hand, 36% favored Facade 3 and justified their answer with the following statements "we need a greener world," "green spaces are always good," and "good use of the facade for green space." Very interesting is that 23% chose Façade 1, the renovation of the old façade according to the original style, because they found it more modern and prettier, or they did not like the greenery on other proposals. Therefore, it can be concluded that children prefer more contemporary designs and enjoy plants in their environment. Additionally, it could be assumed that when choosing the façade, children pay attention to aesthetical and ecological value because the visual composition and greenery attracted them.

Figure 48: Results of the questionnaire

Question 6: What proposal do you like the most? [Facade]

3.2. Discussion

Heritage impact assessment contributed to understanding the interests of children in the context of values and heritage. Furthermore, it helped find the relationships with well-being but simultaneously provided questions.

The last question from the questionnaire, “Why do you think architects and city council should listen to young people in city planning?” provided very inspiring answers, which are quoted below:

“Because young people are the adults of tomorrow.”
“Because we are the future of the city.”
“Because we are the future of the nation.”
“Because the city will be ours in the future.”
“Because we are the ones who will stay here afterward.”
“Because we are the ones who will be in these spaces in the future.”
“Because young people can have good ideas.”
“I think they should listen to young people and all people to get an idea.”

The young generation is aware of the responsibility they will carry in the future and will be in charge at a certain point. Therefore, it might evoke a discussion about sustainable and future-proof development of our cities. Furthermore, it could be discussed if the young generation could help shape the future architecture according to the constantly changing social, economic, and climatic circumstances. As architects, we design for all ages and have to consider future problems during the design process. Therefore, the question is, could we create more sustainable buildings and cities considering children’s perspectives? To answer this question, more research is necessary.

The essential question is how to incorporate children’s opinions into the design. Should design be based on the answers, or should we search for a compromise? It can be concluded that children might not be able to assess the value of built heritage. They preferred demolition and the ultimate change of the architectural expression of the facade. It should be mentioned that children were not informed that the building is considered heritage by the municipality due to the historical value of represented architecture. Would this knowledge influence their perception, or children at the age of 14 would ignore it? The truth is that architects are responsible for educating and caring about the history we will expose to the next generations. Architects, city planners, and municipalities can decide what will be saved and what will not. It is relevant to consider the aspects on which we can search for the compromise and where we need to take responsibility as professionals.

Heritage impact assessment helped to prove that co-creation design can be used as a tool for embracing well-being. Co-creation design allows the exchange of opinions and expressing needs that otherwise could be overlooked.

All questions mentioned in this discussion, as well as findings about the history of the building, could become the starting point for future Ph.D. research. Especially interesting would be to go through such a design process, but with the integration of co-creation from the beginning, from the research phase. A combination of designing by architects and co-creation sessions with young people and children could be intriguing, bringing unusual effects.

The next chapter contains the final design, which is the result of the research, heritage impact assessment, and architects’ interpretation. The reader will be explained how the collected knowledge influenced certain decisions.

Minecraft workshop with school children in Faro

Chapter 4: Final design

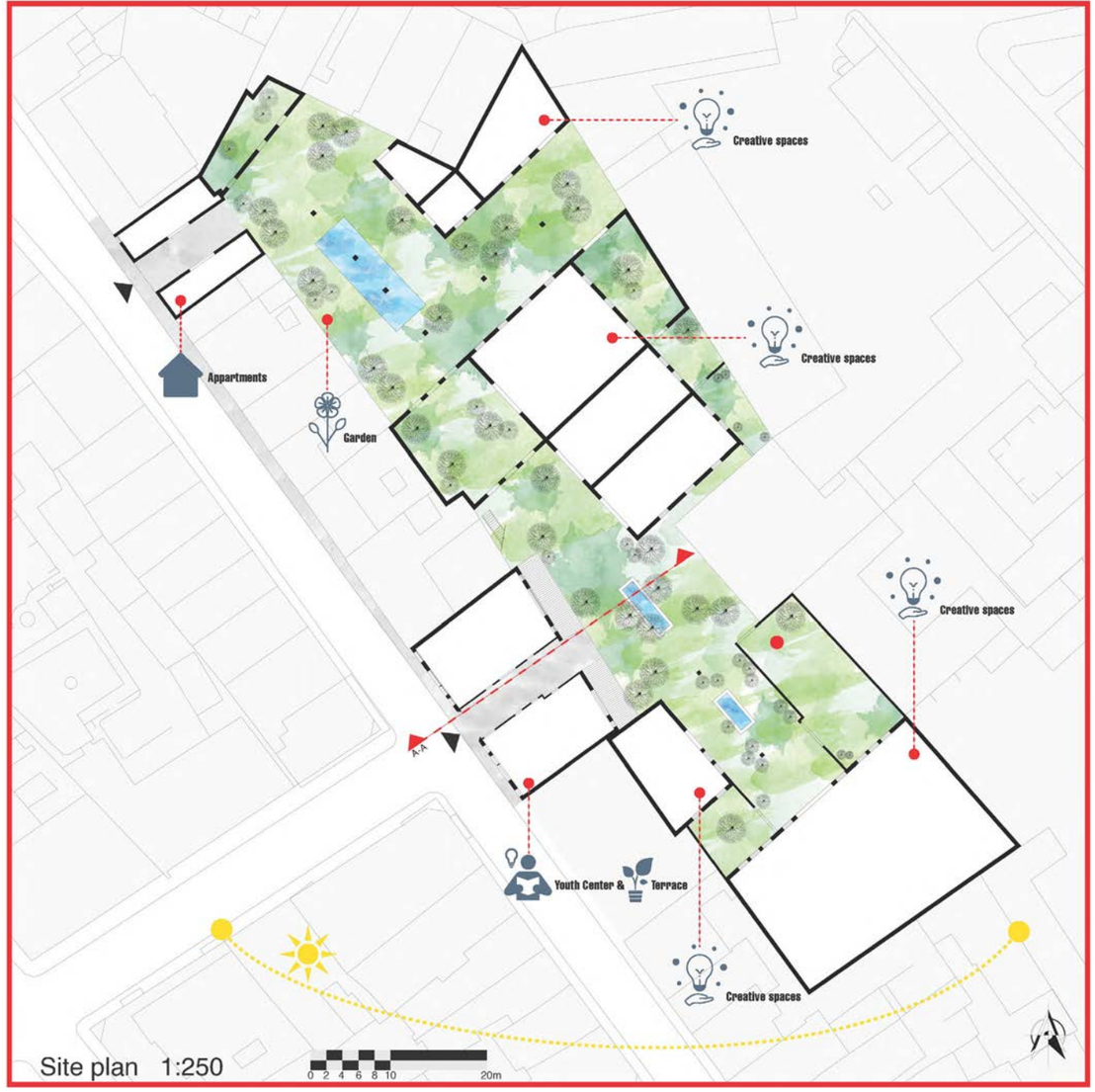
Site plan

The complex of the Youth Centre is open to the public and accessible to all, which is an essential aspect of this design, especially in the context of intergenerational relationships that our group researched in chapter 1. In addition, spaces inside the complex would be used for creative activities like workshops, meetings, yoga, sports, and events (Fig.49). Incorporating additional building on the street side into the project allows for better and safer access to the complex (Fig.50). Earlier, this building was not considered, but the P4 presentation revealed the necessity to include this building in the design. The entire plot is part of the design that enables a more integrated approach towards heritage and the history of this complex. This building could be transformed into apartments for nomads or other functions.

Buildings filled with green are the ones opened to become part of the garden. Those buildings' roofs were removed, but the steel trusses are kept and visible (Fig.51). This unusual approach towards existing buildings gives possibilities to create new spaces inside existing structures. Demolition of the existing buildings is minor, visible in Figure 52 on page 72, which shows the changes in the plot. As a result, design is strongly connected to the local context, even if the further use is different from the previous one. This approach can show children the value of the architectural and cultural heritage of the place. Additionally, it illustrates how creatively we can transform our cities and adjust them to current needs with respect for history and nature. Visualization (Fig.53, p.72) shows how the garden inside the buildings could look like and how it could be used by young people and children.

The main building is transformed into the Youth Centre with a roof terrace accessible by outside stairs and a lift inside the building. The proposed alternative future for the site creates social and ecological value, but it's different from its original context.

Figure 50: Additional building at the street side. Foto by Ricardo Agarez.



Created values

Relationship to context

Figure 49: Site plan.

Figure 51: Section AA.

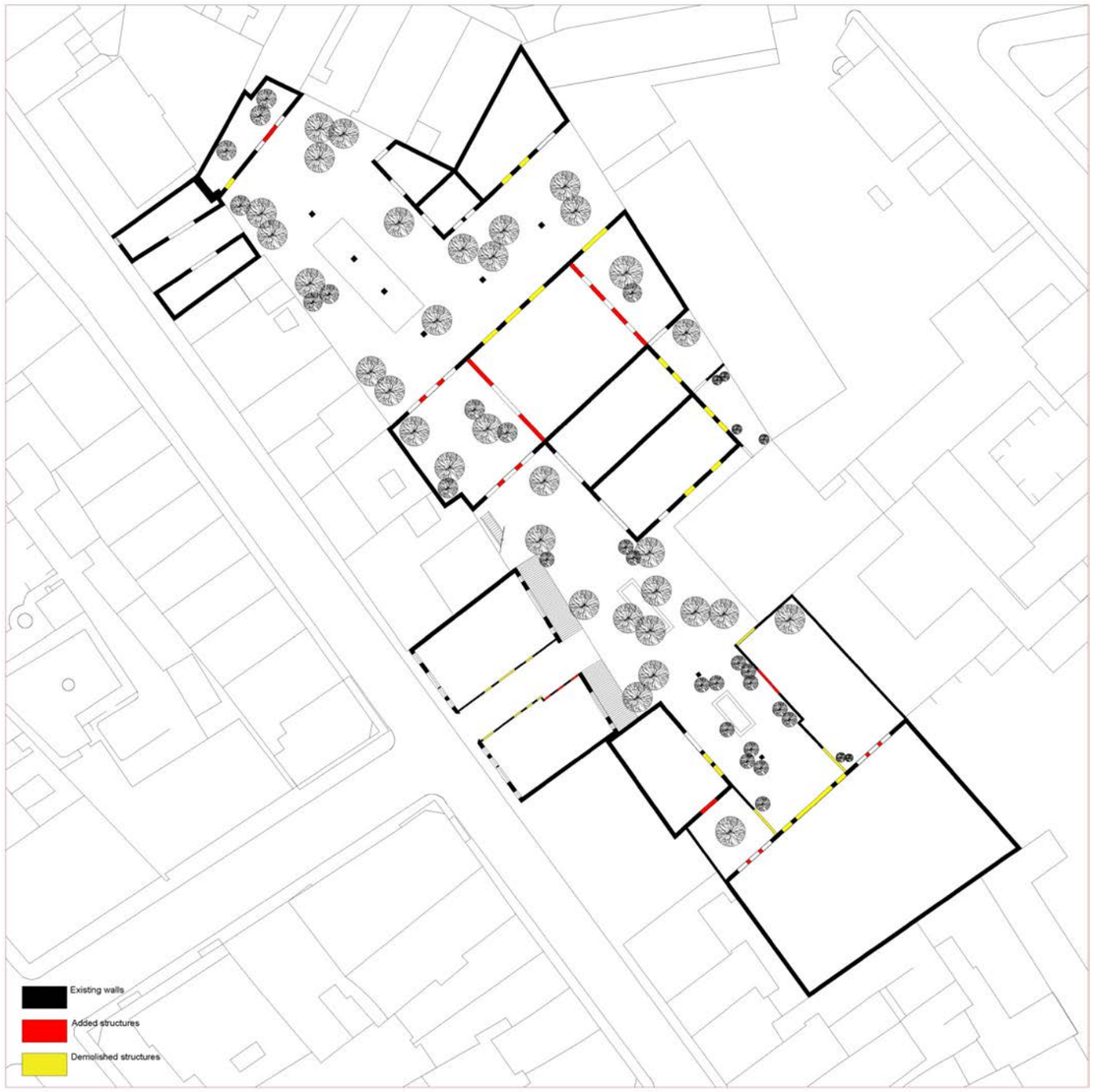


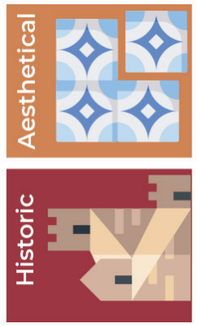
Figure 52: Site plan. Drawing ilustrates what was demolisched and added to the existing site plan in order to design alterantive proposition.

Figure 53: Visualisation of the garden designed inside former bus storage buildings. Drawing is marked on the site plan with red dot.

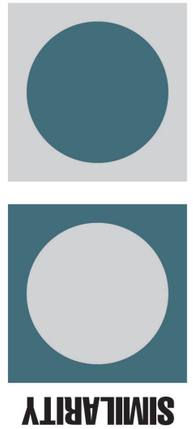
Facades of the Youth Centre

Figure 54: Front facade

Maintained values



Relationship to context



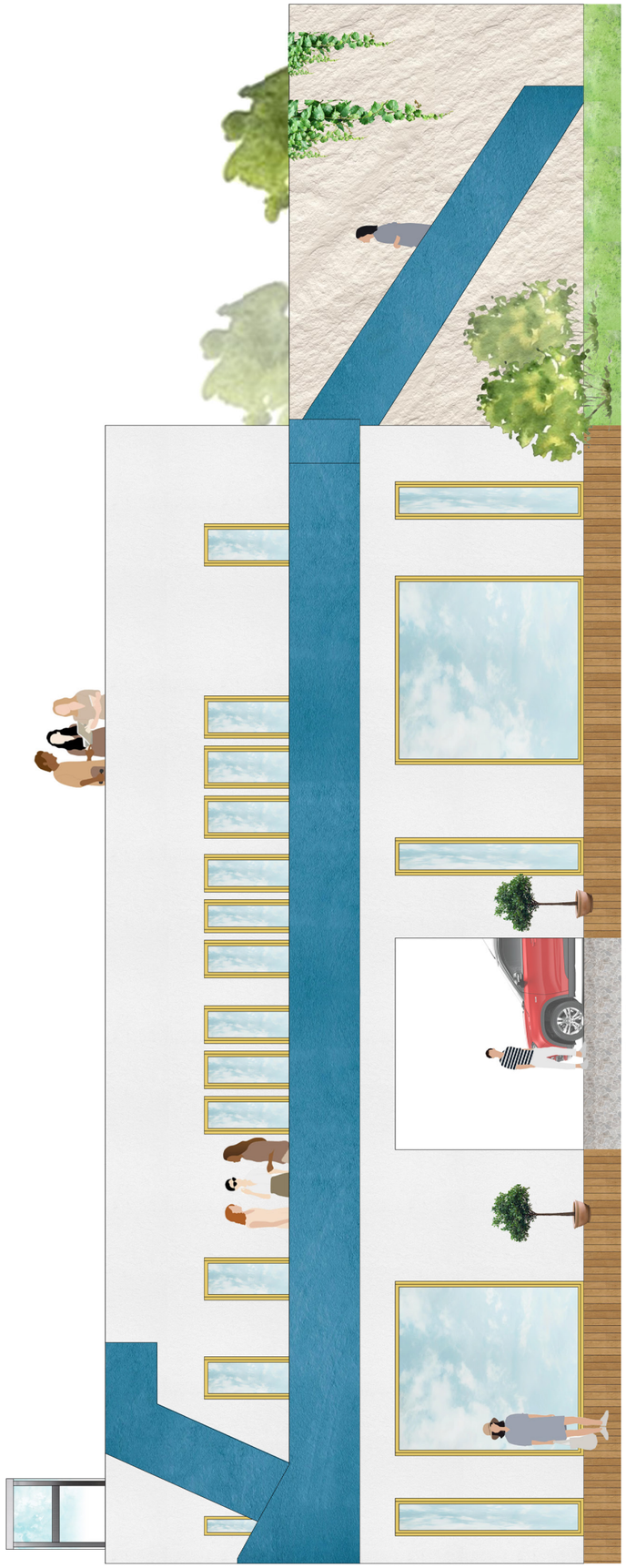


Figure 55: Back facade

Floor plans

The organization of the floor plans was inspired by the approach of José Pacheco, a teacher and creator of Escola da Ponte, an open-plan school [52]. The idea was to design a school without a classical classroom. Instead, the aim was to implement spaces with movable walls that would allow for more integration and adaptation to the needs. An example of such flexible educational spaces is shown in Figure 56.

The historical evolution of the floor plan was traced based on archival documents and research (Fig.57). As it was explained, it was impossible to see the building inside, meaning that the drawings illustrate the theoretical layout of the spaces. It would be problematic to propose an alternative floor plan in this situation. For this reason, the interior of the building is demolished, as shown in Figure 57. What is important to mention is that the façade of the Youth Centre, the former office, is untouched. As a result, new floor plans were designed, implementing open-plan spaces. The program of the Youth Centre is centered around digital transformation and social interaction with peers (Fig.58).

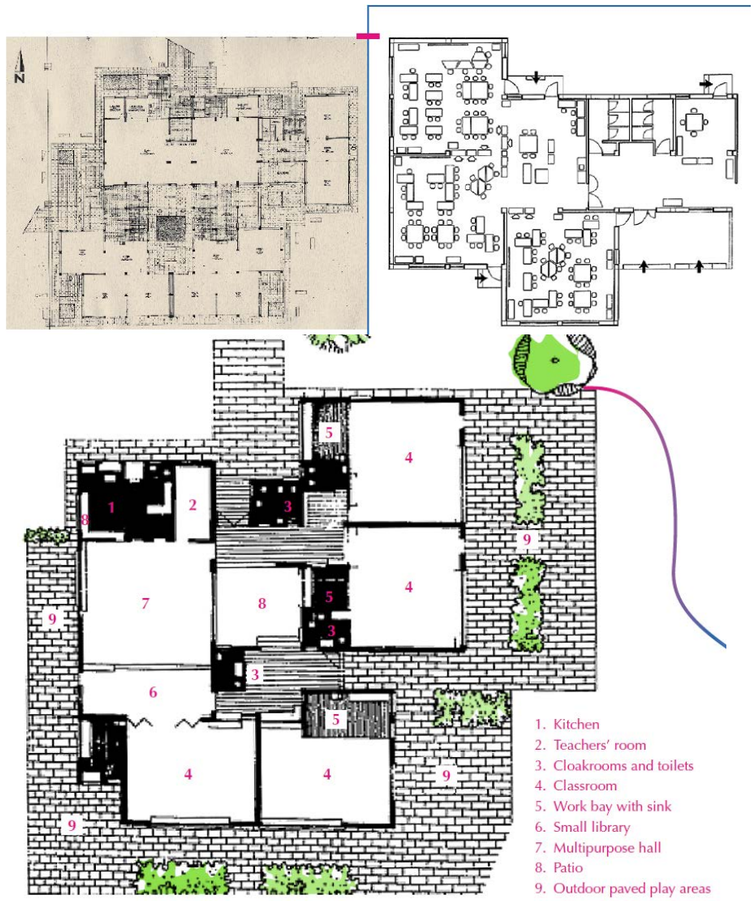


Figure 56: Examples of open plan school. Source: Martinho, M., & Freire da Silva, J. (2008). Open Plan Schools in Portugal: Failure or Innovation? In www.oecd-ilibrary.org (ISSN 1609-7548). OECD. Retrieved November 6, 2022, from https://www.oecd-ilibrary.org/education/open-plan-schools-in-portugal_234830442731

Figure 57: Demolition and changes in existing floor plans.

Figure 58: Alternative floor plans for the Youth Centre.

The façade's design is similar to the original (Fig.xx) but refreshed and introduces new materials (Fig.xx). Earlier, the upper part of the façade was finished with a plaster coat, but in the new design, the upper part is finished with engineered stone: ULMA panel. ULMA panel is a material with all the sensations of stone due to its textures, colors, and strength. This stone derivative is made up almost entirely of natural (aggregates) and recycled components. The bottom part of the façade is finished with a white plaster coat. On the following, pages are two details focusing on aluminum windows (Fig.xx & Fig.xx).

Figure xx: Current state of the facade.

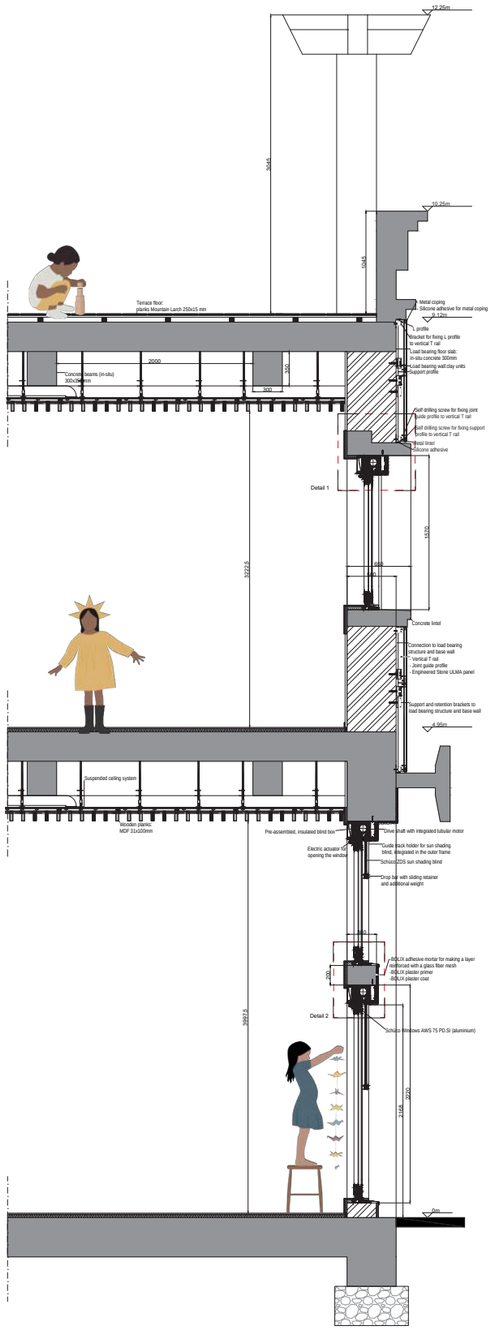


Figure xx: New design of the facade. Original drawing in scale 1:20.

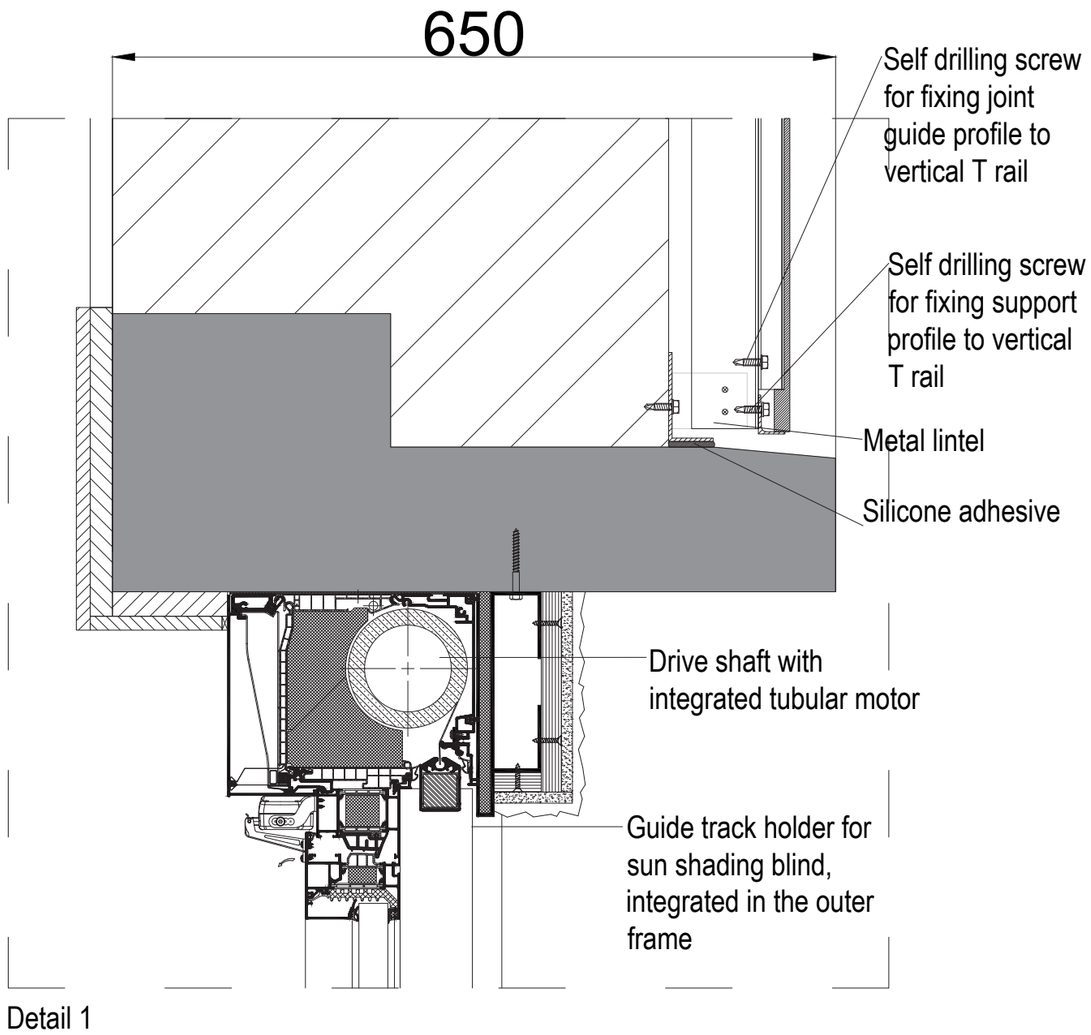


Figure xx: Detail 1. Original drawing in scale 1:5.

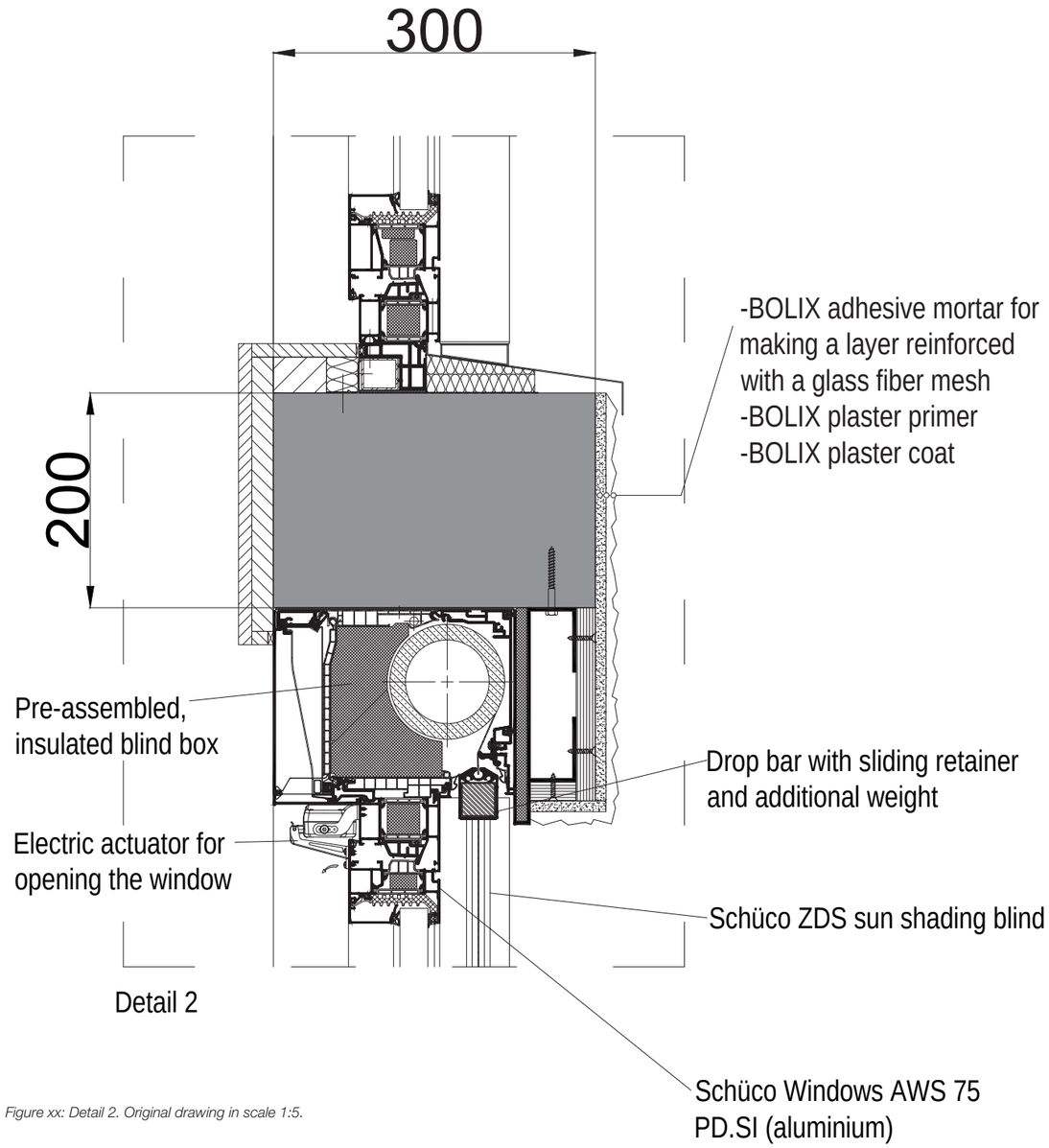


Figure xx: Detail 2. Original drawing in scale 1:5.

The building uses a ceiling cooling system (Fig.xx) during the summer (Fig.xx & Fig.xx), which can be reversed during the winter and heat the building inside (Fig.xx & Fig.xx). Balanced mechanical ventilation with CO2 sensors provides fresh air. It is necessary due to the program of the building, which foreseen the computer rooms, which influences higher heat production. When the occupation of the building is lower, cross ventilation through the windows will provide fresh air. Electricity is produced by solar panels situated on the roofs of other buildings in the complex because the roof of the Youth Center is used as a terrace.

How many solar panels need the Youth Center?

Average electricity use for educational building: 40,6 kWh/m2
The surface of the Youth Centre (2 levels): 700 m2
The average electricity use for the Youth Centre:
40,6 kWh/m2 x 700 m2 = 28420 kWh

Watt-peak (Wp) of solar panels: 500 WP
Conversion factor (NL): 0,85 kWh/WP
Expected annual yield: 500WP X 0,85 kWh/WP = 425 kWh

The total amount of solar panels for the Youth Centre: 28420 kWh / 425 kWh = 67

67 solar panels need 134 m2 of the roof. This is not a problem in this complex due to the multiple buildings, which can provide space for even more solar panels.

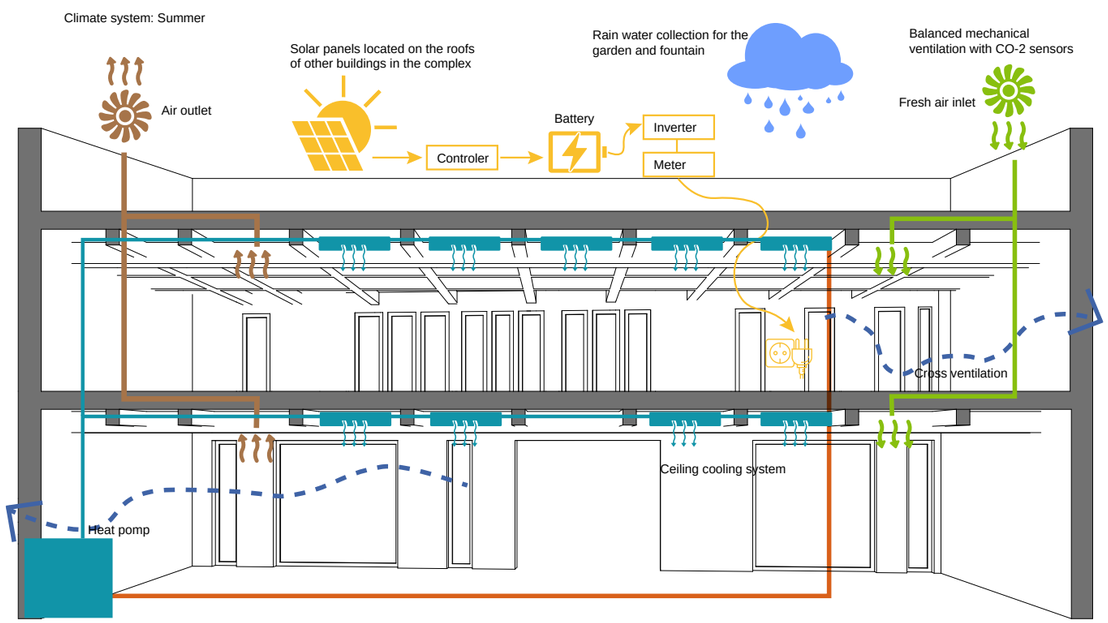


Figure xx: Climate installation scheme: summer.

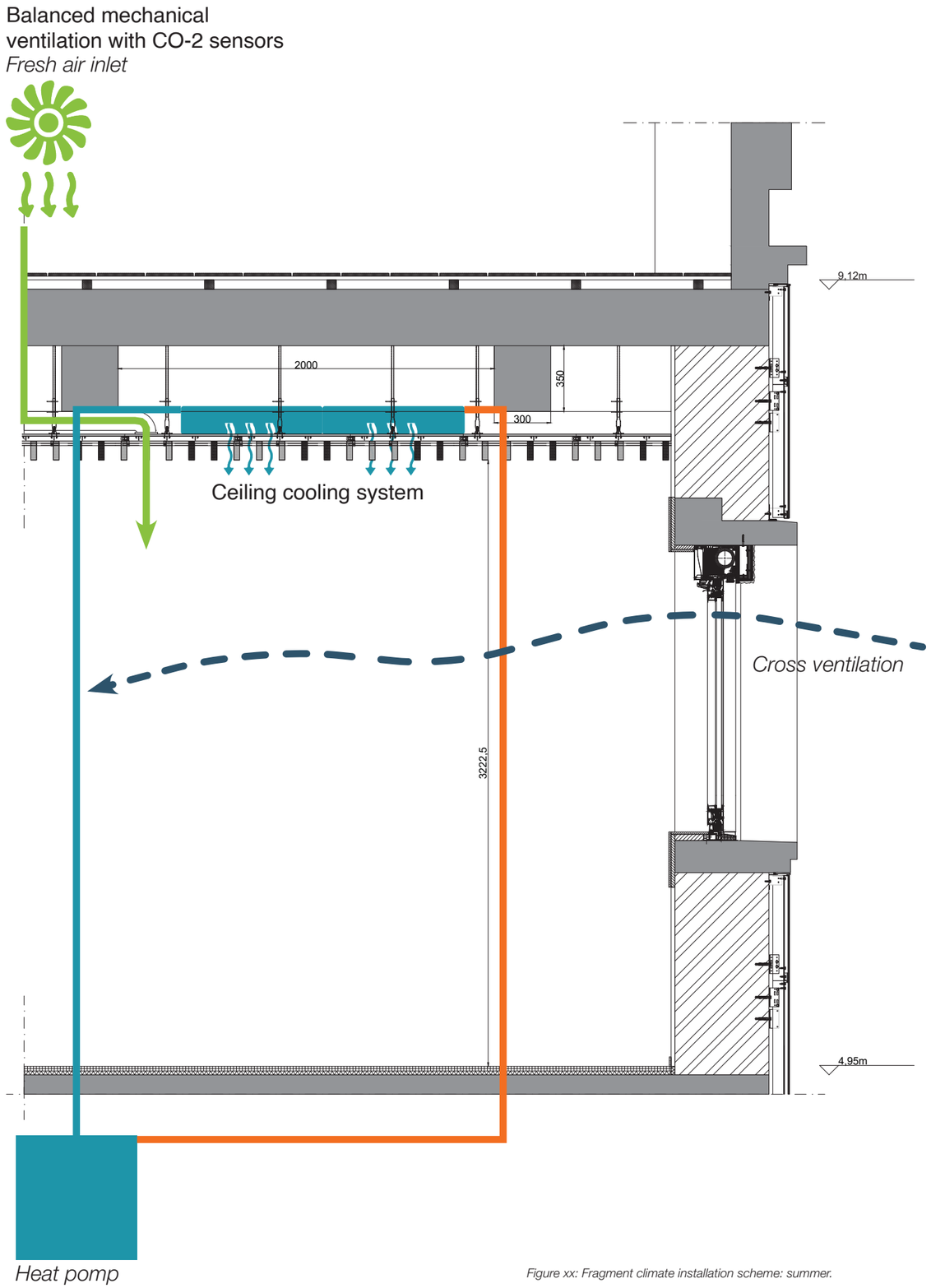


Figure xx: Fragment climate installation scheme: summer.

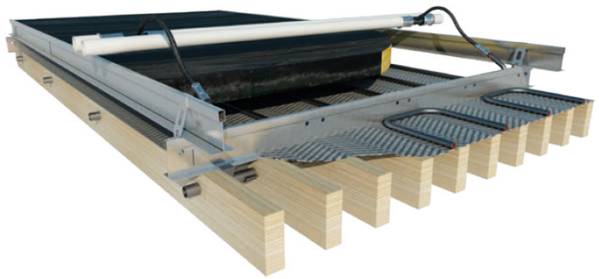


Figure xx: Ceiling cooling system example.

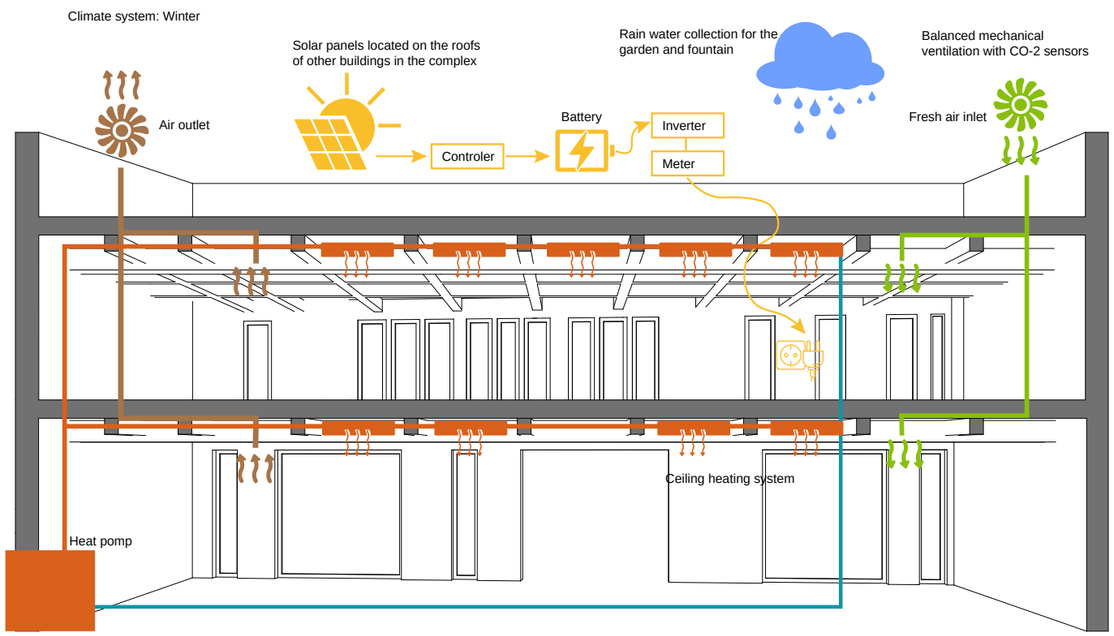


Figure xx: Climate installation scheme: winter.

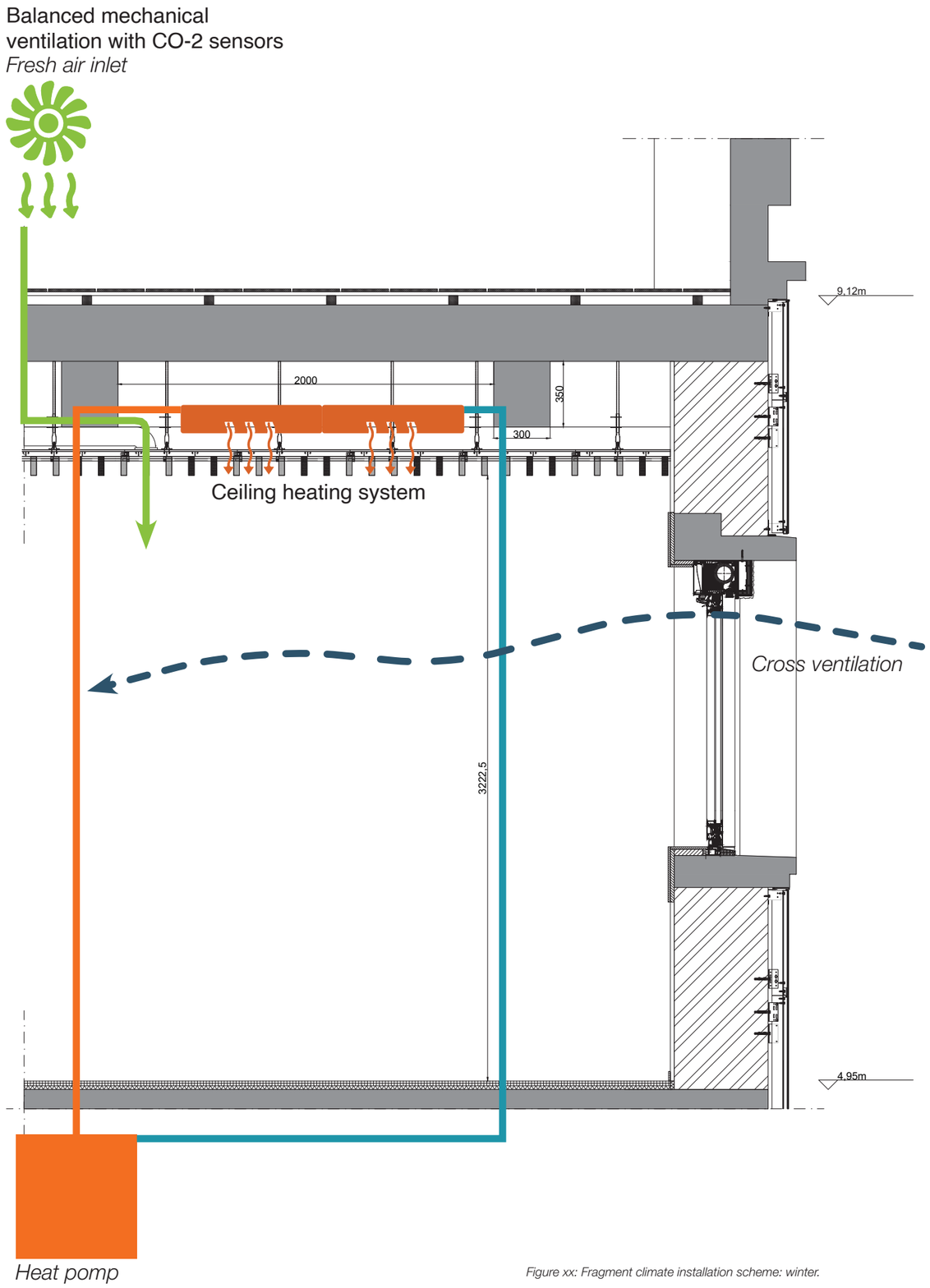
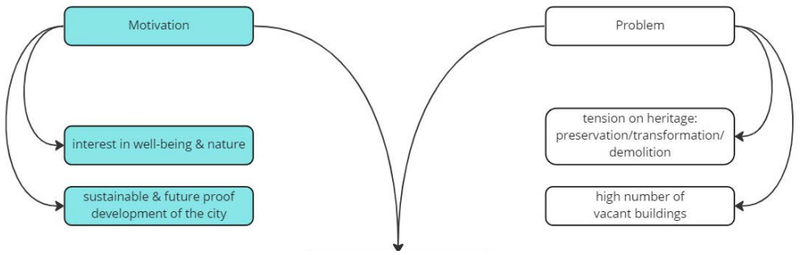


Figure xx: Fragment climate installation scheme: winter.

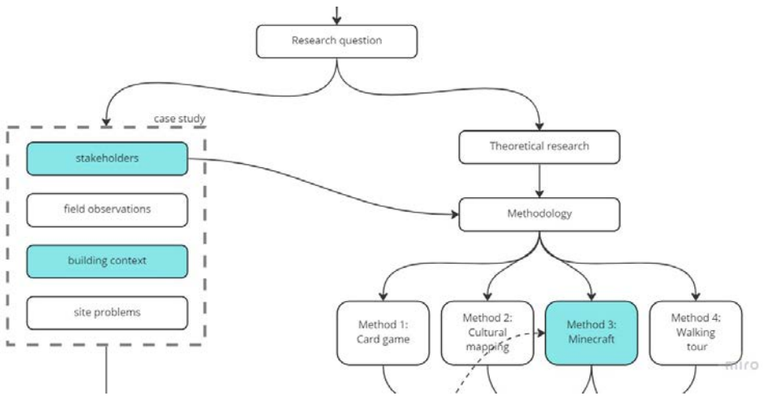
Reflection

Graduation studio Revitalising Heritage: Faro Convention Labs was based in Faro, Portugal. The studio's core was formed around values society transfers to the built environment. Those values are unfortunately not consistently recognized as heritage values. Lack of awareness can lead to the annihilation of those values by the transformations of architects and city planners. Faro, in the context of recognizing the value of heritage, is an exceptional place due to the ratification of The Council of Europe Framework Convention on the Value of Cultural Heritage for Society, the so-called Faro Convention. The studio's goal was to search for the values and attributes of different social groups by undertaking varied types of co-creation. In this reflection, I would like to refer to the diagram of my design process, mentioned in Introduction, because it will help to follow my journey throughout the entire graduation.

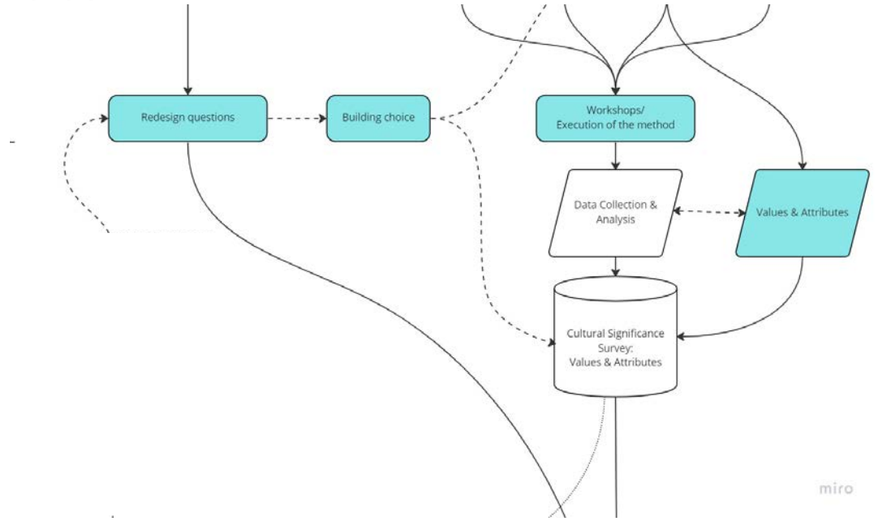
Parallel to the problem of recognizing values, the city of Faro deals with tension on heritage. Due to complex economic and legal issues, the city has many vacant buildings, and deciding what should happen to the facilities is challenging. Should they be preserved and transformed into new use, or maybe their time has passed, and demolition is the only possibility? My motivation for the project was strongly driven by my interest in well-being and nature, as well as my desire to deepen my knowledge about sustainable and future-proof development of the city.



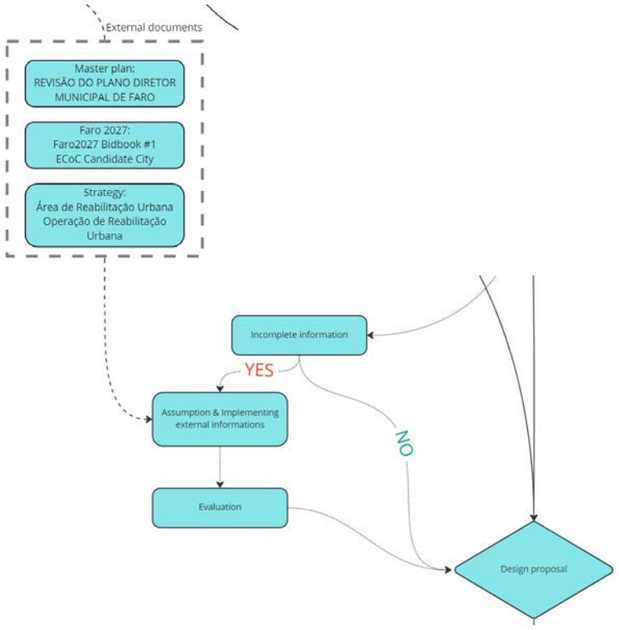
As mentioned, our supervisors encouraged us to work in the research phase as teams. The fragment of the diagram below illustrates the group work, but the individual activities of decisions are colored in blue. Co-creation, one of the studio's leading concepts, was not only the research theme but also part of our daily work. Together we cluster our research questions around the overarching theme of nature. My work focused on values that children convey on nature. The decision to work with children was connected to multiple aspects: they are mostly not chosen as potential stakeholders, it is more challenging to communicate with them about architectural issues, and approaching them requires compliance with various ethical principles. Working with such an unpredictable group is interesting, mainly because students do not have many opportunities to co-create with the young generation during their studies.



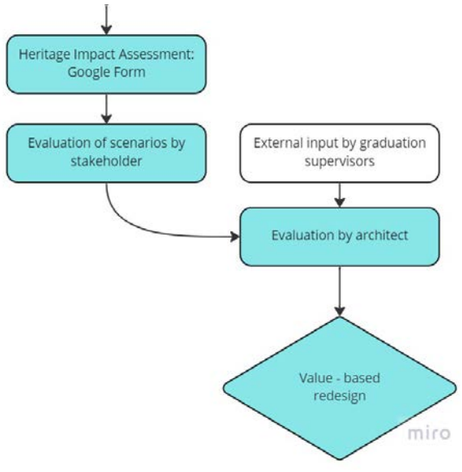
Our group had uncountable discussions about the stakeholders and methodologies. We were aware that methods of research need to fit the stakeholders. In the process of research and learning from our teachers, I got inspired to undertake the challenge of working with Minecraft. There was much potential in this method in the context of co-creation with children because the game is an environment that can be easily understood by the youngest. Challenge for me was that I did not know the game earlier, I had never before prepared a workshop for children, and to make it even more challenging, all this had to happen in Portugal. The execution of the workshop went very well due to cooperation between several people. Organizing workshops in school required contacting the school and requesting permission from parents. In the organization of it, our supervisors and partners from the Municipality of Faro were involved. This part of the research was a very important lesson for me because, in the end, I was responsible for executing the workshop and gaining results. I had to deal with fast-changing circumstances and take care of effectively communicating with children.



What I would improve next time is the quality and detail of the Minecraft model. Gaming as a method was new for me, and it cost time to acquire enough skills to work effectively in a digital environment. Furthermore, the cards/questionnaires used during the workshop were printed, which is not environmentally friendly and creates an obstacle in analyzing the results. Reading different handwriting and translations was highly time-consuming. A volunteer from the University of Algarve who was helping me during the workshop also helped me with this part. For the next time, I would do Google Forms, as I did for the impact assessment. Another point to improve would be the time frame of the workshop. Unfortunately, the school gave us little time, only 1,5h, which made it more challenging to engage with children and establish a deeper dialogue.



The impact assessment was the process I went through the first time. It was organized as a questionnaire in Google Forms. The possibility of working online helped immensely because traveling to Portugal a second time during graduation could be challenging to organize. The impact assessment explores children's opinions about the design's propositions for the complex and historical front facade. Propositions were rooted in the results gained from the Minecraft workshop and combined with ambitions of the Municipality of Faro, focused on digitalization, expanding education offers, and involving young people in dialog about the city's future. Data collected through the impact assessment helped improve the future design but also brought unexpected insights into a possible complex program. In terms of organization, I did not encounter problems; contact with the school and collecting forms went smoothly and fast.



What is very unexpected for me is that the project has become very complex and multidimensional. It changed during the process from a vacant building to an urban complex. With every next step, this historical complex was revealing more details. The former EVA headquarters has much potential as a development project. As I mentioned, this graduation project could become a

starting point for future Ph.D. research. The problems of vacancy, built heritage, future development of the cities, and co-creation are very relevant in the temporary world. Countries like Portugal have many empty buildings, while countries like the Netherlands lack enough affordable living spaces. Climate change and convoluted social changes also increase the complexity of the future work of an architect, but also governments. Exploring co-creation as a tool for creating alternative futures for vacant heritage, can help us finding the most optimal solutions.

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Barreta Island, Faro, Portugal

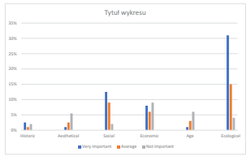
Annex 1: Data set from Minecraft workshop

How important it is? — Very / Avarage / Not impo.

			Portuguese	English
	Computer 2	Card 1	Mesmo ao pé da uma estação tens espaços verdes Pois mesmo ao pé da estação do comboios existem espaços verdes Pois mesmo ao pé da estação do comboios existem espaços verdes	Right next to a station you have green spaces. Because right next to the train station there are green spaces. Because right next to the train station there are green spaces.
	this group was working very close, many answers are the same	Card 2	Porque poderiam estar remodeladas Pois poderiam estar mais arranjadas Porque poderiam estar remodeladas	Because they could be refurbished. Well, they could be more arranged. Because they could be refurbished.
	Minecraft: water pond with grass, tree	Card 3	Porque há habitam bastantes seres vivos Porque há habitam bastantes seres vivos Porque há habitam bastantes seres vivos	Because there are many living beings there. Because there are many living beings there. Because there are many living beings there.
		Card 4	Porque temos mais espaços verdes. Porque temos mais espaços verdes. Porque temos mais espaços verdes.	Because we have more green spaces. Because we have more green spaces. Because we have more green spaces.
		Card 5	Porque como anda muita gente não é tão poluente e para as pessoas se movimentares entre cidades. Para as pessoas deslocam-se da cidade para cidade e como são mais pessoas e menos poluente. [difficult to read, looks like other answers]	Because as many people walk, it is not so polluting and for people to move between cities. For people, they move from city to city and get more people and less polluting.
Session 1		Card 6	Para as pessoas caminharem ao ar livre. Porque é um lugar ideal para as pessoas caminharem. Para as pessoas caminharem ao ar livre.	For people to walk outdoors. Because it is an ideal place for people to walk. For people to walk outdoors.
		Card 7	Pois é bom ter espaços verdes espalhados pela cidade. Pois é bom ter espaços verdes espalhados pela cidade. Pois é bom ter espaços verdes espalhados pela cidade.	Well, it's good to have green spaces scattered around the city. Well, it's good to have green spaces scattered around the city. Well, it's good to have green spaces scattered around the city.
		Card 8	Porque ficamos a ter conhecimento sobre o nosso passado. Porque ficamos a ter conhecimento sobre o nosso passado. Porque ficamos a ter conhecimento sobre o nosso passado.	Because we get to know about our past. Because we get to know about our past. Because we get to know about our past.
		Card 9	4 muito importante porque é um lugar onde as crianças conversem e brincarem umas com as outras. 4 muito importante porque é um lugar onde as crianças conversem e brincarem umas com as outras. 4 muito importante porque é um lugar onde as crianças conversem e brincarem umas com as outras.	It is very important because it is a place where children can socialize and play with each other. It is very important because it is a place where children can socialize and play with each other. It is very important because it is a place where children can socialize and play with each other.
		Card 1	Para poder ir onde quero. Pois gosto muito deste edifício. [Para mas deslocamos.]	It is important because I can go wherever I want. I really like this building. [For more you move.]
	Computer 3	Card 2	Nao traz muito interesse. Pois não me agrada muito. Porque não é a minha casa.	It doesn't bring much interest. Well, I don't like it very much. Because it's not my house.
		Card 3	É bonito e gosto da praia. não anda do barco. Porque não gosto de praia.	It's Beautiful and I like the beach. I don't go by boat. Because I don't like the beach.
		Card 4	Tem plantas.. Pois não vou andandito. Porque e um espaço bonito.	It has plants. I don't go there. Because it's a beautiful space.
		Card 5	Para poder ir a algum lugar em Portugal. E a parte da estacao que eu posso viajar. Para mas deslocca.	To be able to go somewhere in Portugal. It is from the station that I can travel. To move more.
	this card was mixed with other, similar !!!	Card 6	Importante para o carrinhar e bem muitas plantas. Pois posso andar de bicicleta. Para caminharmos.	Important for walking and well many plants. Because I can ride a bike. For us to walk.
		Card 7	Porque precisamos de plantas. Pois nunca passo por la. Porque não me importa.	Because we need plants. Country I never go through it. Because I don't care.
		Card 8	Nao me atrai atenção. Nunca me interessou. Porque não é a minha casa.	It doesn't attract my attention. It never interested me. Because it's not my house.
		Card 9	Para quando tiver filhos. Porque é um espaço para as criancas (como eu) brincarem. Porque não é importante para mim só para os meus filhos.	It will be important when I will have children. Because it's a space for children (like me) to play. Because it's not important for me, but it will be for my children (in the future).
	Computer 4	Card 10	Porque é um lugar tranquilo para as pessoas passarem. Porque é necessário haver deslocacas para outras cidades.	Because it's a quiet place for people to pass through. Because it is necessary to travel to other cities.
	the set was mixed with set from 2 section	Card 11 Card 2	Porque as pessoas podem mergulhar e se divertir. [empty]	Because people can dive in and have fun. [empty]
		Card 12 Card 3	Porque é um bom sitio para viver. Porque é importante haver var para a circulação de barcas e de ser vivos.	Because it's a good place to live. Because it is important to have access to the movement of boats and living beings.
		Card 13 Card 4	Porque tem uma boa paisagem para as pessoas verem. Pais é importante ter espaços verdes para um melhor ambiente.	Because it has a good landscape for people to see. Because it is important to have green spaces for a better environment.
		Card 14 Card 5	Porque é um bom sitio para caseis se encontrarem e ficarem. [not readable]	Because it's a good place for couples to meet. Because cars need parking spots
		Card 15 Card 6	Porque assim as criangas conseguem conviver atraves do desporto. [empty]	Because that way children can meet/ spend time together through sport.
		Card 16 Card 7	Porque as pessoas conseguem piquenique e comunicarem. Porque é importante ter espaços verdes á volta de Faro para haver um melhor ambiente.	Because people can picnic and communicate. Because it is important to have green spaces around Faro for a better environment.
		Card 17 Card 8	Porque não tem nada de útil. Pois é um monumento histórico que é importante pois abreu muitor turistas e um os meis historico a cidade.	Because there's nothing useful. It is a historical monument that is important because it has opened a lot of tourists and is one of the most historic sites in the city.
		Card 18 Card 9	Porque as crianças precisam de conviver.	Because children need to live together.
	Computer 5	Card 1	Pois é um dos transportes mais utilizadas em Faro. Porque é um dos transportes mais comuns e rápidos. Pois é necessária a existência de espaços verdes um pouco por todo a lado.	It is one of the most used transports in Faro. Because it is one of the most common and fastest transport. For it is necessary to have green spaces all over the place.
		Card 2	Pois deveria ser renovados pois não estao o atrair niguen pois esto muito degradado. Os prédios e casas antigas deveriam ser renovadas. Os prédios e casas antigas deveriam ser renovadas.	Because they should be renewed because they are not attracting anyone because they are very degraded. Old buildings and houses should be renovated. Old buildings and houses should be renovated.
		Card 3	[empty] Sois á costa portuguesa é importante para atrair turismo.	On the Portuguese coast is important to attract tourism. Because in the ria we find a wide range of biodiversity, most of it being typical here, and the ria has a big economical value because it serves as a supply (fish and seafood) to many dinners.
		Card 4	[empty] [empty] Pois mesmo na praia é importante a existência de espaços verdes.	Without green spaces the city would be less attractive. Because even on the beach it is important to have green spaces.
		Card 5	Pois é necessario haver estacionamentos perto das estacoes de comboio para dar disponibilidade as pessoas que vao apanhar o comboio. É importante pois é necessário estacionamentos para facilitar o uso doconmercio. É importante pois é necessário estacionamentos para facilitar o uso doconmercio.	Because it is necessary to have parking spaces close to the train stations to make available the people who will take the train. It is important because parking is necessary to facilitate the use of the train. It is important because parking is necessary to facilitate the use of the train.
		Card 6	[empty] Pois é um tento turistico onde os pessoas podem canarlar e ver os vistas. Pois é um tento turistico onde os pessoas podem canarlar e ver os vistas.	It is a tourist destination where people can relax and see the sights. It is a tourist destination where people can relax and see the sights.
		Card 7	Porque é importante ter espaços verdes á volta de Faro para haver um melhor ambiente. É importante que os espaços ou vedar das casas reja decorado e atractiva.	Because it is important to have green spaces around Faro for a better environment. It is important that the spaces or fences of the houses are decorated and attractive.
		Card 8	[empty] Pois é um monumento histórico que é importante pois atrai muito turismo e dá um or mais hisitorico o cidade. É um importante local turistico e cultural. [empty]	It is a historic monument that is important because it attracts a lot of tourism and gives the city a more historic feel. It is an important tourist and cultural site.
		Card 9	[empty] [empty] Pois é um lugar as criancas podem brincar e conviver mas precisa de ser renovado.	It is a place for children to play and socialize but it needs to be renovated.
Session 2	Computer 2	Card 10	Pois acho que não é importante para a cidade.	Wiel, i don't think it's important for the city.
		Card 11		
		Card 12	Pois é um espaço verdes são importantes. Pois é um espaço verdes são importantes. Pois acho que não é importante para a cidade.	Well, green spaces are important. Well, green spaces are important. Wiel, i don't think it's important for the city.
		Card 13	Pois é um espaço verdes são importantes. Pois é um espaço verdes são importantes. Pois é um espaço verdes são importantes.	Well, green spaces are important. Well, green spaces are important. Well, green spaces are important.
		Card 14	É importante porque podemos fazer desporto lá e também é um espaco verde.	It's important because we can do sport there and it's also a green space. It doesn't change my life but sometimes i hang out there.
		Card 15	Ás vezes vou lá passear e exercitar, é muito importante	Sometimes I go there for a walk and exercise, it's very important.
		Card 16	Porque nunca vou lá.	Because I never go there.
		Card 17	Pois não fai falta na cidade. Pois não fai falta na cidade. Pois não fai falta na cidade.	Well, there's no need in the city. Well, there's no need in the city. Wiel, there's no need in the city.
		Card 18	Pois não fai falta na cidade. Pois não fai falta na cidade. Pois não fai falta na cidade.	Well, there's no need in the city. Well, there's no need in the city. Wiel, there's no need in the city.
	Computer 3	Card 10	Pois os plantas muito importantes na vida das pessoas. Pois os plantas muito importantes na vida das pessoas.	Because plants are very important in people's lives. Because plants are very important in people's lives.
		Card 11		
		Card 12	natureza é sempre importante.	Because in my opinion the plant is very invasive. nature is always important.
		Card 13	Pois não há muitas zonas para observar paisagens em Portugal.	Because there are not many areas to observe landscapes in Portugal. Nature is essential for us and for the city
		Card 14	Pois são precisos mais espaços como este para as pessoas andarem e passarem tempo com a família.	Open spaces are good for playing. Because more spaces like this are needed for people to walk and spend time with thair family. I think it's important because the Ribeirinho park is a place where we can practice sports which is very good for our health.
		Card 15	Pois não existe muitos espaços com este na cidade.	Because there aren't many spaces like this in the city.
		Card 16	O espaço verde é importante para o nosso planeta.	Green space is important for our planet.
		Card 17	já não fai falta na nossa cidade e acho que se pocha renovar. Pois esta a ocupar espaco onde podemos colocar coisas modernas.	It is no longer needed in our city and I think it can be renewed. Because it's taking up space where we can put modern things.
		Card 18	Não acho importante porque ja nao fai falta na nossa cidade. Pois não conheço o edifício.	I don't think it's important because it's no longer needed in our city. Wiel, i don't know the building.
	Computer 4	Card 10		
		Card 11	É habitat para muitas especie e anda serve para melhorar o clima e aumentar o turismo.	It is a habitat for many species and even serves to improve the climate and increase tourism.
		Card 12	A planta é muito importante mas nao é uma planta muito prerisevel pois em temmar de populacos e de necessida der dos pessoas é mais importante ter arvores de fruta.	The plant is very important but it is not a very handy plant because in terms of population and people's needs it is more important to have fruit trees.

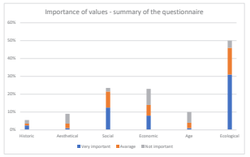
Card 13		This plant is a weed, which, on one side is a problem linked to the fact that it is an invasive plant, but on the other side they help the balance of the ecosystem.	
Card 14			
Card 15		I think is important at least because it's a place where we can be with our friends and play volleyball. It's good to do exercise.	
Card 16	Este elemento da foto tem grande importancia pois permite que exista espacos de convivia a ar civre para queas pessoas possam aproveitas as areas verdes da nossa cidade.	This element of the photo is of great importance because it allows open-air living spaces for people to enjoy the green areas of our city.	
Card 17	Este elemento não tem grande importancia pois é um espaco abananado que poderia sei renovado e dan lugar a outro espaco de maior importancia.	This element is not very important because it is a shabby space that could be renewed and give way to another space of greater importance. It's important to see old houses but it's also important to make new ones.	
Card 18			
Card 10		Factories are very important to make our stuff.	
Computer 5			
Card 11	Precisamos das árvores para respirar.	We need trees to breathe.	
Card 12	Porque é o habitat de muitos animais e é um otimo ponta turistico.	Because it is the habitat of many animals and is a great tourist destination.	
Card 13	Certas plantas servem para decorar o jardim.	Certain plants serve to decorate the garden.	
Card 14		The grass is made to prevent people from falling into the river.	
Card 15	Porque é um local muito frequentado é um local do lazer em contacto com a natureza e um lugar para fazer exercicio fisico. Porque é um bom espaco para conviver e é bom para o ambiente. Porque é um local de lazer que tem contato com a natureza.	Because it is a very popular place, it is a place of leisure in contact with nature and a place to exercise. Because it's a good space to hang out and it's good for the environment. Because it is a place of leisure that has contact with nature.	
Card 16			
Card 17	Pode reconstruir o pintar a casa e pole como noval. Porque esta a ocupar a cidade mais se demolir mas vamos ter mais espaco para construir novos edificios mais modernos.	You can rebuild or paint the house and polish it like new. Because it is taking up the city more if it is demolished, but we will have more space to build new, more modern buildings.	
Card 18	Porque está a ocupar espaco importante da cidade. Não tem utilidade. Não tem utilidade.	Because it is taking up important space in the city. It's of no use. It's of no use.	

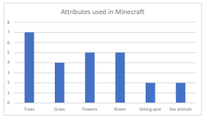
			Very important	Avarage	Not important
C1	K1				
C2	K2	Historic	3%	1%	2%
C3	K3				
C4	K4		V	A	N
C5	K5	Aesthetical	1%	3%	6%
C6	K6				
C7	K7		V	A	N
C8	K8	Social	13%	9%	2%
C9	K9				
C10	K10		V	A	N
C11	K11	Economic	8%	6%	9%
C12	K12				
C13	K13		V	A	N
C14	K14	Age	1%	3%	6%
C15	K15				
C16	K16		V	A	N
C17	K17	Ecological	31%	15%	4%
C18	K18				
	K19				
	K20				
	K21				
	K22				



	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Trees	1	1	1	1	1	1	1
Grass	1			1	1	1	1
Flowers		1	1		1	1	1
Water	1	1	1		1	1	1
Sitting spot					1		1
Sea animals					1	1	

Trees	7
Grass	4
Flowers	5
Water	5
Sitting spot	2
Sea animals	2





	wirh?
5.1.	aumentar o espaço verde - plantar árvores - renovame o patio principal num espaco verde increase the green space - plant trees - renovate the main patio into a green space
4.2	criar mais espacos verdes ao redar do edificio e usar plantas e elementas verdes para o interior, colocar tambem algumas flores para cras um jardim create more green spaces around the building and use green plants and elements for the interior, also put some flowers to create a garden
3.1	Cafe: para es fecsoas terem um sitio para camer Cafe: for people to have a place to come
5.2.	meter arvores, arbustos e flores na entrada, jardim comunitario put trees, bushes and flowers at the entrance, community garden
2.2	partir o chão para criar uma piscina(com golfinhos), criacao de um jardim (com bancos) break the ground to create a pool (with dolphins), creating a garden (with benches)
3.2	começamos por meter arbustos, poiś espacos verdes sao sempre importantes na nossa cidade. foemos uma fonte com agua para as pessoas beberem agua. we started by putting in bushes, because green spaces are always important in our city. We made a fountain with water for people to drink water.

Annex 2: Data set for attributes

Attribute categories	adult	positive	negative	adult	elderly	positive
Intangible	45	31	14	55,55556	50	40
Tangibe	37	30	8	45,67901	36	30

Attribute categories	adult	positive	negative	adult	elderly	positive
(I) Process	0			0	0	
(I) Social	32	22	10	39,50617	25	22
(I) Relation	13	9	4	16,04938	25	18
(T) Landscape	0			0	3	3
(T) Area	14	10	4	17,28395	10	7
(T) Asset	23	19	4	28,39506	23	20

Attribute categories	adult	positive	negative	adult	elderly	positive
(I) Process - Not planned	0			0	0	
(I) Process - Planned	0			0	0	
(I) Social - Community	10	9	1	12,34568	11	8
(I) Social - Association	2	2		2,469136	0	
(I) Social - Knowledge	2	2		2,469136	0	
(I) Social - Use	18	9	9	22,22222	14	14
(I) Relation - Concept	2	2		2,469136	2	2
(I) Relation - Relation	6	5	1	7,407407	18	12
(I) Relation - Character	5	2	3	6,17284	5	4
(T) Landscape - Layering	0			0	0	
(T) Landscape - Landscape	0			0	3	3
(T) Area - Area	10	6	4	12,34568	10	7
(T) Area- Context/Setting	3	3		3,703704	0	
(T) Area - Ensemble	1	1		1,234568	0	
(T) Asset - Natural element	6	6		7,407407	3	3
(T) Asset - Urban element	4	3	1	4,938272	5	4
(T) Asset - Building	12	9	3	14,81481	14	12
(T) Asset - Building elements	1	1		1,234568	1	1
	82			101,2346	86	

		Proportion (%)	adult	elderly
(I) Social - Community				
Family members	12	37,5	7	5
Friends	13	40,625	3	10
Neighbor	7	21,875	5	2
(I) Social - Use				
Drink & talk	21	43,75		
Excerice & dog walk	12	25		
Activities in sea	7	14,58333		
Work & wait for trian	8	16,66667		

(I) Relation - Relation					
Memory	9	34,61538	1	3	5
Meaning	11	42,30769	2	7	2
Identity	6	23,07692	1	5	

(T) Asset - Natural element	
Sky	
Park	60
Sea	12
Air	
sea animals	9
birds	
Trees	27
Plants (bush & flower)	16
plants on building facades	
The sea	12
The path by the sea	7
The national park	6

Annex 3: Rules applied to the redesign of the building, according to municipal masterplan

Document: A masterplan made by Municipality of Faro: REVISÃO DO PLANO DIRETOR MUNICIPAL DE FARO. REGULAMENTO. 2021 Rules applied to the redesign of the building. Chapter II. EQUITY SYSTEM SECTION III. INVENTORY HERITAGE SUBSECTION I. ARCHITECTURAL HERITAGE		
Article 19. Identification and general provisions	1. The inventoried architectural heritage includes buildings and urban complexes of architectural, historical, scenic, and archaeological interest, which are recognized by the Municipality and are included in the Planning Plan – Cultural Heritage and whose definitions are set out in article 5, namely: a) Listed buildings in urban areas; b) Quality Fronts; c) Neighborhoods and Urban Sets. 2. It also includes the inventoried structures in rural areas, which are included in the Architectural and Archaeological Heritage Plan, which accompanies the Plan. 3. The properties referred to in numbers 1 and 2 of this article, due to their particular relevance, must be treated and preserved within the scope of planning management acts, with a view to their respective rural and urban enhancement and integration and, as such, subject to special protection and safeguard measures. 4. For the purposes of the previous number of this article, special protection measures are the conservation interventions necessary to ensure their transmission to future generations, under conditions that avoid their de-characterization, degradation or destruction, incidents on structural elements, architectural, decorative, in their formal and constructive aspects. 5. For the purposes of the provisions of paragraph 3 of this article, special safeguard measures are also defined as interventions for identification, documentation, investigation, necessary for safeguarding and eventual promotion, translated into: a) Survey – graphic, topographic and photographic; b) Documentary research; c) Collection – oral testimony; of estate, equipment and integrated heritage; d) Archaeological work – monitoring, probing or excavation; e) Classification. 6. In the properties referred to in number 1, without prejudice to the provisions of articles 20, 21 and 22, alteration and expansion works are permitted, provided that they do not distort the architectural and volumetric characteristics of the existing one, and comply with the terms of this regulation and under one of the following conditions: a) To restore the architectural or urban characteristics and coherence of the properties, provided that it is technically justifiable; b) To adapt the properties to a new use or to new legal requirements relating to the existing use; c) To improve the structural and functional performance of properties, without prejudice to their characteristics; d) The assessment of the changes provided for in the preceding paragraphs will be carried out through an assessment of the patrimonial impact, duly substantiated through a prior report, under the terms of the Legal Regime approved by Decree-Law no. 140/2009, of 15 June. 7. In the properties mentioned in number 1, without prejudice to the provisions of articles 20, 21 and 22, total or partial demolition is only permitted under one of the following conditions: a) In situations of imminent ruin, attested by the municipality through a municipal inspection, expert opinion by a public body or other entities in terms of administrative assistance provided for in the Code of Administrative Procedure or, even, by a qualified technician for the purpose, under the terms of the legislation in force. force or under the conditions referred to in number 2 of article 37;	Building is classified as "Edifícios Inventariados em meio urbano – Inventoried buildings in urban environment". Conservation is desirable, but changes that not interfere with character and architectural expressions are allowed. Alteration and expansion is possible, but without distorting architectural and volumetric characteristics. Conditions consider restoration, adaptation to new use, and improvement. Changes will be assessed by the municipality. Demolition is allowed when there is total ruin or buildings have no architectural and historical value.

	b) For the enhancement of properties, through the suppression of parts without architectural and historical value, duly justified in a previous report, under the terms of Decree-Law no. 140/2009, of 15 June. 8. In the situations provided for in subparagraphs a) and b) of the previous number, demolition is only allowed after approval of the new intervention project.	
Article 22. Buildings inventoried in urban areas	1. These are buildings in urban areas, defined in article 5 of these Regulations and included in the Planning Plan-Cultural Heritage. 2. Without prejudice to the provisions in the areas of the Historic Center and Surroundings to the Historic Center, in these buildings, conservation and valorization is privileged. 3. In addition to the interventions referred to in the previous point, other types of interventions are allowed, provided they are duly supported by a prior report on the importance and evaluation of the works or interventions proposed to be carried out in relation to cultural assets, under the terms of the Decree- Law No. 140/2009, of June 15th. 4. Notwithstanding what was mentioned in the previous number, some special safeguard measures may be determined under the terms of number 5 of article 18.	The building is included in the "historic center" zoning area. Interventions are possible, as far as the importance/ relevance of those interventions is provided.
CHAPTER IV. URBAN SOIL SECTION II. CENTRAL SPACES		
Article 87. Buildability Scheme	1. Without prejudice to the provisions for each subcategory of space, new buildings and the intervention in existing buildings must maintain the consolidated alignment, the number of floors, height of buildings and predominant volume, not constituting a reference to the occasional existence of buildings whose alignments or heights of the facades do not fit into the set. 2. New buildings and intervention in existing buildings must privilege the type-morphological characteristics of the existing building in order to safeguard adequate urban integration. 3. Allotment operations are permitted in all subcategories of the Central Spaces, establishing the following land use indexes for this purpose: a) Faro - 1.0; b) Montenegro and Patacão – 0.6; c) Estoi, Conceição, Santa Bárbara de Nexe and Bordeira - 0.5. 4. The land use indices identified in the previous number may be added exclusively for the following purposes: a) Basements for car parking – 0.2 to 0.5; b) Balconies – 0.2. 5. Dimensioning of the areas destined for the road network and parking in terms of Title V of the present regulation. 6. Dimensioning of areas intended for green spaces and equipment for collective use under the terms of Title VI, Chapter III, of this regulation. 7. All infrastructures must be connected to public networks. 8. In Central Spaces, and without prejudice to the provisions of Subsection I – Architectural Heritage, of Section II – Inventory Heritage, of Cap. II - Heritage System, the building system of the different subcategories is as follows: a) Faro Historic Center Area: i) Priority is given to the conservation of the building and its urban morphology; ii) The following urban planning operations are also permitted, under the terms of the applicable legal and regulatory provisions: ii1) Alteration and expansion, in the following specific situations: (i) Extension to 2 floors and 8.1 m in height; (ii) Exceptionally, in order to maintain the relationship of continuity with the neighbouring buildings, the expansion may be greater than the number of floors indicated in the previous point, if the mode of height of the	Interventions should respect number of floors, height, volume. Respect the typology of the building/ architecture. Conservation is priority. But interventions are also fine.

	existing facades on the urban front in which they are inserted admits , without prejudice to compliance with article 59 of the RGEU, not exceeding the maximum number of 4 floors, with the exception of Av. da República and Largo do Carmo where it can reach 6 floors or 18.9 m; (iii) Expansion in depth, up to 15 m, provided that the existing patio is maintained, as well as its permeability, in an area equal to or greater than 30% of the area of the building. (iv) Alteration of facades intended to: (iv1) One-off corrections resulting from tampering caused by a relatively recent intervention and/or of notoriously poor quality; (iv2) Enable the building's rehabilitation process. ii2) Demolition, under the terms of article 37, and after the new urban planning operation for the site has been licensed; ii3) Reconstruction, following demolition according to the previous paragraph, under the following conditions: (i) Maximum number of 2 floors above the threshold level up to 8.1 m in height. ii4) Only works for the construction of new buildings that aim to occupy unbuilt urban buildings are allowed, with the following conditions being adopted: (i) Maximum number of 2 floors above the threshold level up to a maximum facade height of 8.1 m; (ii) Exceptionally, in order to maintain the relationship of continuity with neighboring buildings, the number of floors may be higher than that indicated in the previous point, if the mode of the height of the existing facades on the urban front in which they are inserted allows, without prejudice to compliance with article 59 of the RGEU; (iii) Maximum Gable Depth of 15 m (iv) Maintenance of a patio with a permeability level of not less than 30% of the building's area.	There are possibilities for extending the volume, but I plan something else. So this point is not relevant. Interventions on the façade: improving the quality of the existing, enabling the building's rehabilitation process, demolition under some terms and then reconstruction. enabling the building's rehabilitation process – this sounds very relevant for one of my propositions.
CHAPTER VI. PROGRAMMING AND EXECUTION OF THE PLAN SECTION III. AREAS FOR GREEN SPACES AND EQUIPMENT FOR COLLECTIVE USE		
Article 122. Sizing parameters	1. The parameters for the sizing of areas intended for green spaces and infrastructure for collective use and equipment for collective use, in re-division operations, subdivision, or urban operations with a relevant impact or similar to the subdivision operation, when they do not affect areas covered per detailed plan or urbanization plan in force, assume the following values: (table p.95). 2. In areas intended for green spaces, priority should be given to the adoption of solutions that promote the infiltration of rainwater, namely terrain modeling that facilitates the infiltration and use of permeable materials on sidewalks, sidewalks, squares, bike paths, parks parking, among others.	
Article 123. Concessions	1. The parcels referring to green spaces and infrastructure for collective use and equipment for collective use arising from re-division, subdivision and urban planning operations that, under the terms of municipal regulation, are considered to have a relevant impact or similar to allotment operation, and correspond to those considered necessary and/or sufficient to guarantee the satisfaction of needs and the public interest, without prejudice to the provisions of the law. 2. Regardless of the agreement between the City Council and the promoter of the urban planning operation, when the areas to be included in the municipal domain fall short of those calculated according to the dimensioning parameters established in the previous chapter, the missing area will be compensated to the Municipality and in accordance with the provisions of municipal regulations. 3. When, in the interest of the municipality, the areas to be included in the municipal domain are greater than those resulting from the application of the sizing parameters established in the previous chapter, the municipality will compensate the promoters in accordance with the provisions of the municipal regulation. 4. Compensation to the municipality for areas not ceded is carried out by the modalities and proportions indicated in the municipal regulation, with a positive breakdown of situations of clogging and rehabilitation, in order to encourage the consolidation of the urban fabric and the rehabilitation of the building stock.	
	5. The parcels of green spaces for collective use to be transferred to the municipal domain must comply with the following conditions: a) At least 75% of the corresponding total area constitutes a single non-discontinuous parcel, and parcels for that purpose with an area of less than 200 m2 or with a width equal to or less than 5 m integrated in public streets are not allowed; b) They have direct access to a public space or road and their location and configuration contribute to the qualification of the urban space in which they are integrated and to the enjoyment of the population installed or to be installed in the place. 6. Only uncovered areas where at least a rectangle measuring 22m x 44m can be entered are considered for accounting as areas for collective use.	

Annex 4: Impact assessment - Google Form

Um novo uso e uma nova fachada para o edifício da R. Infante Dom Henrique 76, Faro

No passado dia 6 de Maio , estivemos juntos num workshop onde jogamos *Minecraft* e um jogo de cartas, e discutimos a Arquitectura e a Natureza em Faro. Este workshop foi uma das actividades do projeto de mestrado em Arquitectura da Universidade de Delft. Este alunos estão agora a trabalhar nos seus projectos de arquitectura e gostavam muito de saber a tua opinião sobre algumas das ideias que estão a desenvolver. **Podes ajuda-los, escolhendo algumas das opções que aqui te propomos?** Se quiseres podes pedir ajuda a um adulto, mas nós queremos mesmo é saber a tua opinião!

Obrigada!

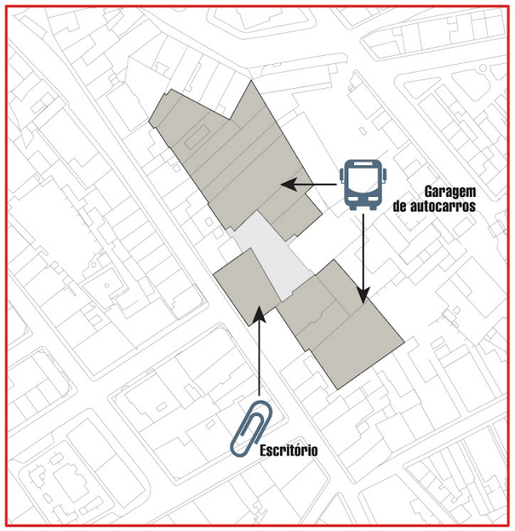
1. 1. Quantos anos tens?

2. Contexto

O conjunto que estamos a estudar é a antiga estação dos autocarros de Faro (edifício da R. Infante Dom Henrique 76). Nesta imagem podes ver a planta do mesmo com a identificação do
edifícios que eram utilizados para os escritórios e as garagens para os autocarros.
É um conjunto um pouco antigo, de 1950, e que desde a construção da actual estação dos autocarros nunca mais teve outro uso. Está abandonado há muito tempo, e enquanto que o edificio de escritórios ainda está em boas condições, algumas garagens necessitam de algumas obras.

A nossa ideia é transformar o conjunto num **Centro Juvenil**. Isto é, num espaço direcionado para os jovens de Faro, onde poderão estudar, conviver, participar em actividades e até dinamizar
iniciativas. Para isso vamos ter de o alterar um pouco, em particular a forma como está organizado, atribuindo novos usos, e a própria fachada principal (parte da frente do edficio). Temos muitas ideias mas precisamos que nos ajudes a decidir. Podes ajudar-nos?

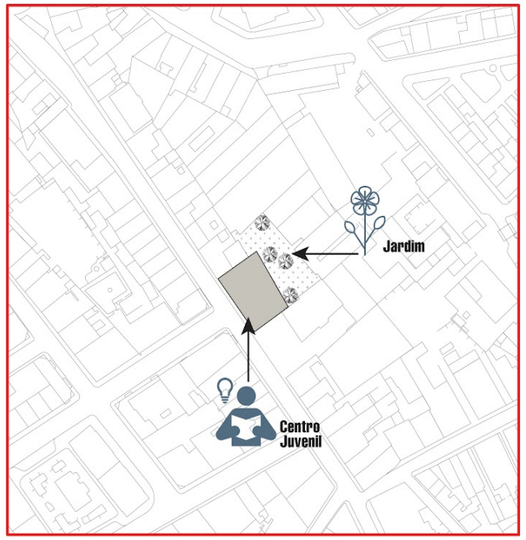
No passado



No passado: Sede da empresa de viagens

No passado, o edifício era a sede de uma empresa de transportes rodoviários, e as garagens eram destinadas a autocarros. As instalações não são usadas há muito tempo. O edifício de escritórios ainda está em boas condições, embora algumas garagens necessitem de obras de adequação ás novas funções.

Proposta de projecto 1: Centro Juvenil com pequeno jardim



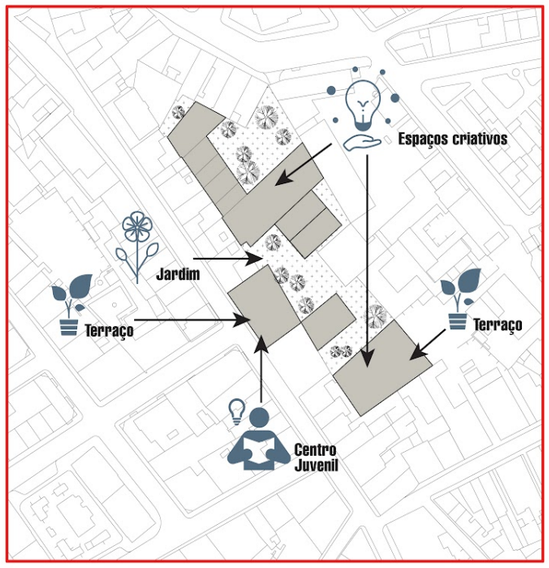
Proposta de projecto 1: Centro Juvenil com pequeno jardim

A proposta é transformar o antigo edifício de escritórios num espaço dedicado às novas tecnologias e salas de estudo partilhadas. O pátio interno será transformado num jardim que poderá ser utilizado por todos.

3. Um novo uso para o edificio e a sua envolvente

Nesta
primeira parte do questionário gostariamos de saber a tua opinião sobre a futura utilização deste conjunto. Primeiro são apresentadas três propostas de diferentes formas de utilizar e organizar o conjunto da antiga estação de autocarros. Por favor vê com atenção cada um delas para depois poderes escolher aquela que mais gostas.

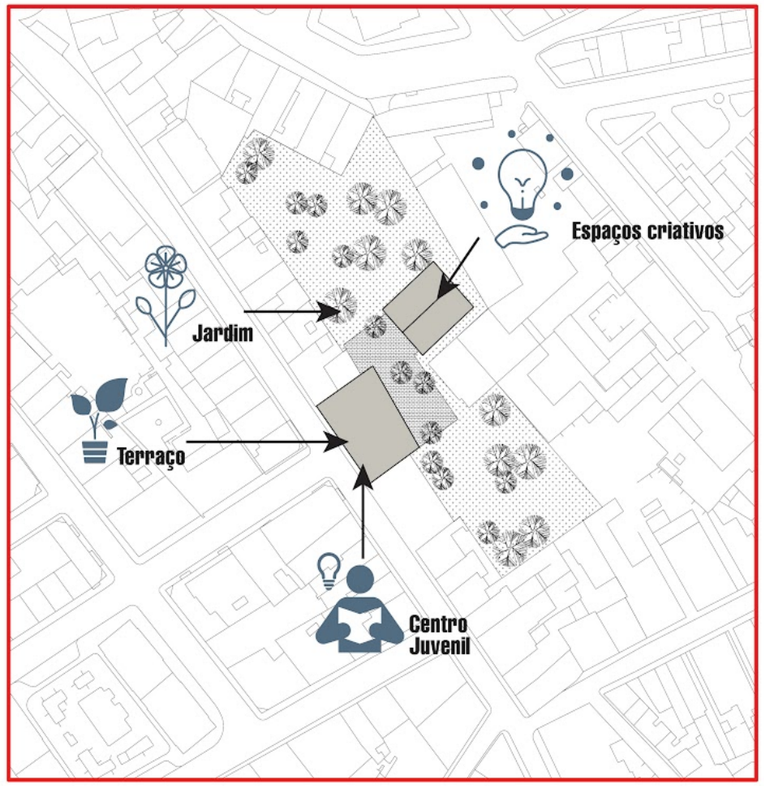
Proposta de projeto 2: Centro Juvenil com espaços criativos e jardim



Proposta de projecto 2: Centro Juvenil com espaços criativos e jardim

A proposta é transformar o antigo edifício de escritórios num espaço dedicado às novas tecnologias e salas de estudo partilhadas. Algumas das garagens antigas serão demolidas para dar lugar a um grande jardim. Os restantes edifícios, serão usados como espaços para actividades criativas para crianças e adolescentes, tais como oficinas, aulas de ioga, exposições ou salas de cinema.

Proposta de projecto 3: Centro Juvenil com espaço criativo e parque verde



Proposta de projecto 3: Centro Juvenil com espaço criativo e parque verde

A proposta é transformar o antigo edifício de escritórios num espaço dedicado às novas tecnologias e salas de estudo partilhadas. A maioria das garagens antigas será demolida, sendo substituidas por um pequeno parque verde. Num outro edificio, serão criadas as condições para a realização de actividades criativas específicas para jovens.

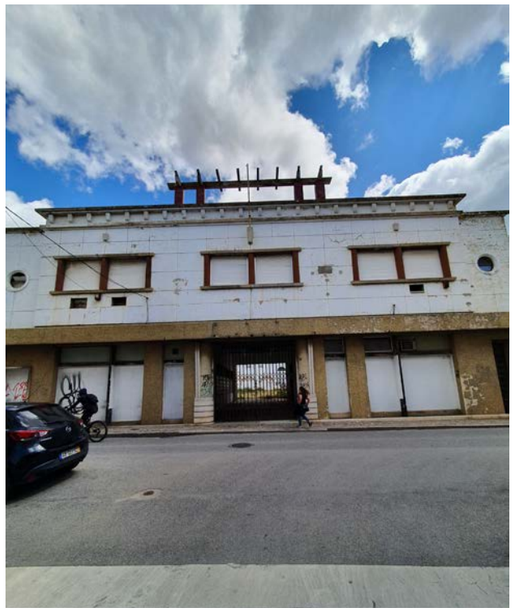
2. Qual a proposta que mais gostas?

   Zaznacz tylko jedną odpowiedź.

   - ◯ Projecto 1 - Centro Juvenil com pequeno jardim
   - ◯ Projecto 2 - Centro Juvenil com espaços criativos e jardim
   - ◯ Projecto 3 - Centro Juvenil com espaço criativo e parque verde

3. 4. O que achas de se fazer um Centro Juvenil neste espaço? Concordas mais ou menos? Porquê? Tens outra ideia que gostavas de ver concretizada?

5. O estado atual da fachada



6. Uma nova fachada

Nesta segunda parte deste questionário gostariamos que pensasses um pouco sobre a fachada do conjunto a antiga estação dos autocarros de Faro. A fachada é a parede da frente do edíficio. É a parte mais visível do edifício, e portanto aquela que mais facilmente nos recordamos. Nesta imagem podes ver uma fotografia actual da fachada. Como podes ver, e apesar de ainda ser muito bonita, está a precisar de ser arranjada, para ser a "cara" do novo Centro Juvenil. Assim, gostariamos de saber qual a tua opinião sobre as três propostas para a melhoria desta fachada, apresentadas seguidamente. Por favor vê com atenção cada um delas para depois poderes escolher aquela que mais gostas.

Proposta de Fachada 1: Reparação da fachada antiga.

Proposta de Fachada 1: Reparação da fachada antiga.

A proposta é renovar a fachada mas manter o desenho original do edificio. Arranjamos e substituimos o que está em pior condições, mas não mudamos o estilo do edificio.

Proposta de Fachada 2: Renovação da fachada e substituição das janelas.

Proposta de Fachada 2: Renovação da fachada e substituição das janelas.

A proposta é renovar a fachada num estido mais moderno e contemporâneo, sem, no entanto, alterar a forma original do edifício. As janelas são substituidas e no telhado é criado um terraço com plantas.

Proposta de Fachada 3: Fachada verde e substituição de janelas.

Proposta de Fachada 3: Fachada verde e substituição de janelas.

Nesta proposta a fachada é totalmente alterada. Toda a fachada é coberta por plantas. As janelas são substituidas e no telhado é criado um terraço com plantas.

4. Qual a proposta que mais gostas?

Zaznacz tylko jedną odpowiedź.

- Fachada 1: Reparação da fachada antiga
- Fachada 2: Renovação da fachada e substituição das janelas
- Fachada 3: Fachada verde e substituição de janelas

5. 7. Porque escolheste essa proposta de fachada?

6. 8. Na tua opinião, porque é que achas que os arquitetos e a câmara municipal devem ouvir os jovens no planeamento da cidade?

Obrigada pelo teu tempo!
Muito obrigada pela tua participação e comentários. O teu contributo é muito importante para mim e o projecto de arquitetura que estou a preparar.