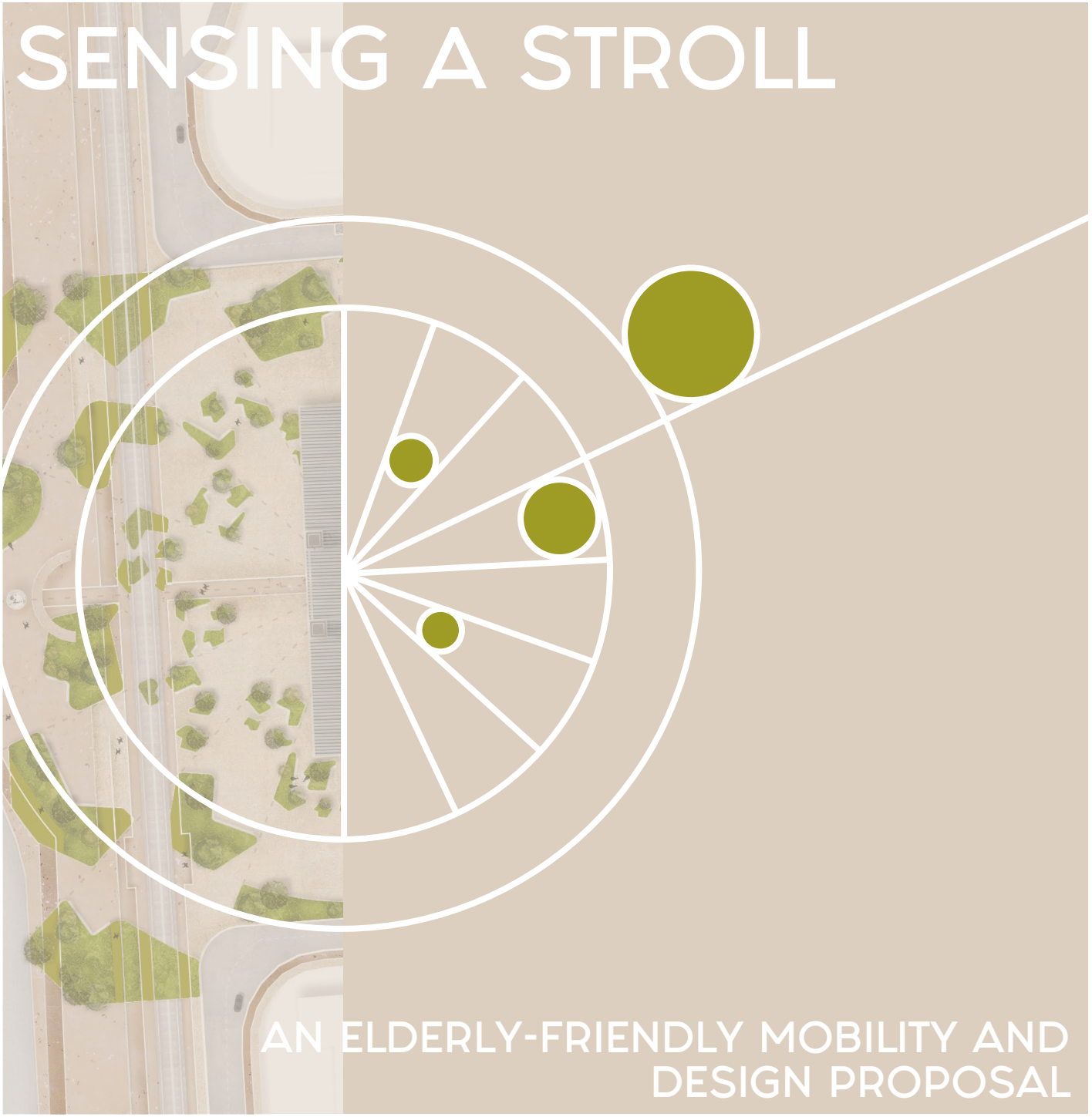
SENSING A STROLL



AN ELDERLY-FRIENDLY MOBILITY AND DESIGN PROPOSAL

Ill.1: View on the Mirror Ball

Abstract

Sensing a Stroll is an Urban Design project that aims to explore the question of well-being among the elderly, through design in the public space. In a context of a general ageing of the European population, questioning the improvement of well-being for this growing category of the population appears all the more relevant. To investigate an elderly-friendly mobility and design proposal, the thesis project takes place in an urban area with a high proportion of elderly people, combined with major social and economic difficulties. Sensing a Stroll will indeed take you to Blackpool, one of the UK's most deprived towns, located in the northwest of England. This inventory of the town stresses the need for an inclusive public space, creating social links and access to all. The thesis project is based on the idea that a space that is physically accessible to the elderly, and therefore people with reduced mobility, is a public space accessible to all. This academic and itinerant journey will take you through a site-specific urban design project and a reflection on the design components that can facilitate social interaction for elderly people within the public space.

Title	Sensing a Stroll - an Elderly-friendly Mobility and Design Proposal
Project	Master Thesis
Institution	Aalborg University
Faculty	Technical Faculty of IT and Design
Department	Architecture, Design & Media Technology
Programme	MSc in Urban Design, specialisation Urban Architecture
Semester	MSc04
Project Period	01.02.2022 - 25.05.2022
Group Number	Group 3
Supervisor	Nicolai Steinø
Number of pages	154 pages

Authors Asami Ikeda

Asami Ikeda

Elsa Delalande

Ill.2: People walking along the tram

Aknowledgment

The group would like to thank Nicolai Steinø for his role as a supervisor throughout the project.
A special thanks also to Tom Barrett, from the Blackpool Council, for his trust and his help along with the thesis, to Simon Brook, Associate Chartered Architect at Spawforths for his precious understanding of Blackpool and his willingness to help, and to Michael Martin, lecturer in Urban Design at the University of Sheffield, for his involvement in the project and the useful pieces of information he shared along with the thesis.

The Group

Elsa Delalande

From France
elsa.delalande@outlook.com

2017 Bachelor of Social Urban Management and Urban Planning at the Planning Institute of Lyon (France)
2021 Internship at PlusKontoret Arkitekter, Aarhus (Denmark)

Asami Ikeda

From Japan
iasami42@gmail.com

2014 Bachelor of Arts in Urban design and community development at Yokohama City University (Japan)
2021 Internship at Clendon, York (UK)

Context of the Project

With a decrease of 0.3% of the population projected by 2026, the town of Blackpool is currently dealing with some major attractivity issues. Thus, the city now wishes to strongly change its image. In this context, a large-scale urban renewal project will soon start in the city center. Known as Blackpool Central, the project aims to transform an existing giant car park into an office and retail space, set around a new public space. Described as one of the Uk's most important regeneration projects, Blackpool central represents a major turn for the town to strengthen tourism and encourage the establishment of private companies. This project illustrates a desire for change on the part of the town, and therefore the relevance of thinking about the renewal of its public spaces. As Blackpool Central is a project that is mainly focused on attracting new stakeholders, Sensing a Stroll is focused on the current inhabitants. By thinking in terms of both new and existing stakeholders, the town would be equipped for a brighter future.

Ill.3: Picture of local newspaper about the regeneration projects

Graphic Choice - 70's Style

Although Blackpool is one of the most deprived towns in England today, this has not always been the case. The 1970s were the town's heyday. Blackpool was thriving on tourism and benefiting from an image of an attractive seaside town. The graphic style of the report you are about to read is therefore inspired by the 70s. It pays homage to this important period in the town's history but is also a nod to the elderly people for whom we have designed this project, and their early years in the vibrant Blackpool of the '70s.

Ill.4: Pictures of Blackpool in the 70s

Table of Contents

INTRODUCTION

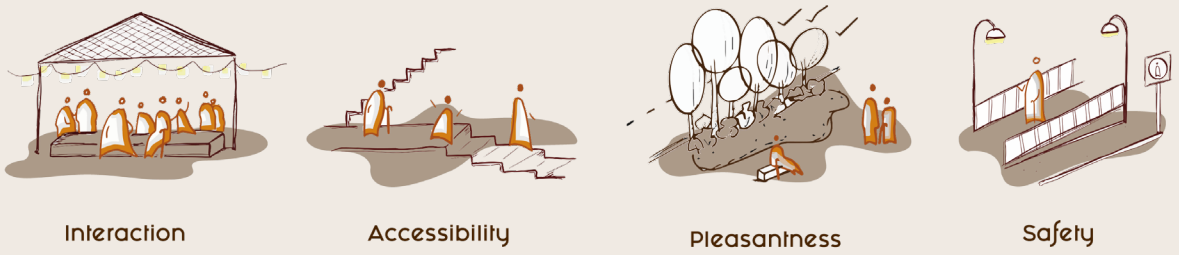
Vision

Looking at the tendency of increasing people aged 65 years and over in developed countries, an understanding of the elderly's physical and mental issues should be understood by urban designers. Although various national and local governments have provided services to support the elderly's health, one can claim that a comfortable and pleasant experience on a daily basis would be the basis for a healthy life. Therefore, the following report will focus on how Urban Design can improve the elderly's experience in the public space, as the space can positively affect people regardless of their differences in background.

Sensing a Stroll aims to provide design solutions that allow meaningful moving and interactive experiences. Although this project is based on Blackpool, one of the most deprived cities in England, the project also reflects some global design parameters for age-friendly mobility and design.

FOUR THEMES OF THE PROJECT

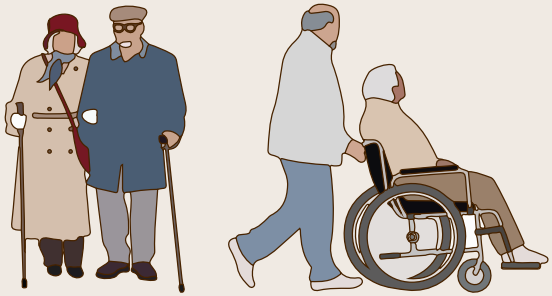
Based on the literature review carried out along the process, the project takes the choice of setting four themes affecting age-friendly mobility and design which will structure the thesis as a whole. These themes are; Interaction, Accessibility, Pleasantness, and Safety and have been selected regarding their recurrence in published texts and academic articles, and their coherence together as a group. Lee (2021) states for instance that three urban environment components, which are accessibility, pleasantness, and safety, are strongly related to urban environmental satisfaction for elderly users. It is also considered that urban environmental satisfaction is related to neighbourhood relationships, which emphasises the importance of small-scale social interaction to maintain the elderly's mental and physical health (Welbi, 2017, Senior Life Style, n.d.; Drury, et al, 2017; Murayama, et al, 2019). These four themes serve as a base throughout the project and will be developed through the following theory chapter. Furthermore, the four selected themes will orientate the choice of analysis and structure the development of the design proposal. This clear guideline throughout the thesis aims to offer a comprehensible immersion to the reader as he or she is invited to discover Blackpool and its future elderly-friendly public space.



Ill.5: Diagrams for four themes of the project

Target Group

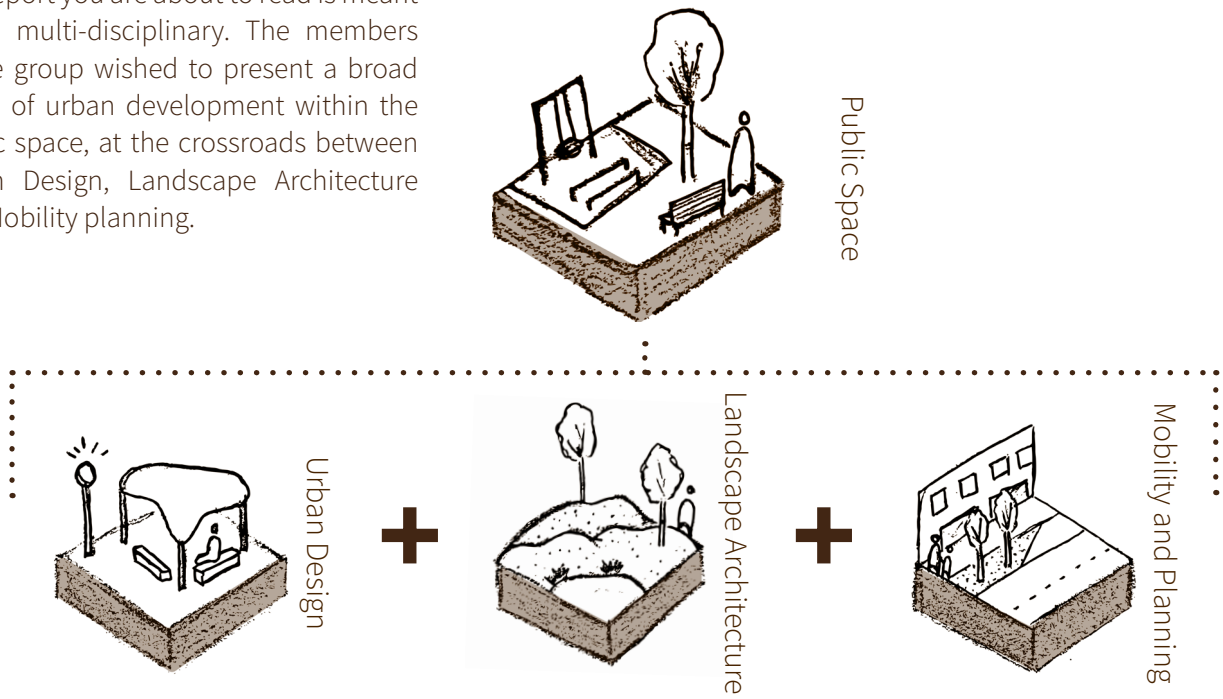
The general target group of the project is people who are 65 years and over, who are recognised as 'old age'' by World Health Organisation (WHO) (Richard 2021). To provide a design solution which would be beneficial to a large number of the elderly, this project takes into account the elderly with difficulty in moving and need other's help or instruments such as walkers or wheelchairs. However, the project takes the view that designing for better accessibility of public spaces for older people means better accessibility for all users.



Ill.6: Target of the project

Chosen Domaines

The report you are about to read is meant to be multi-disciplinary. The members of the group wished to present a broad vision of urban development within the public space, at the crossroads between Urban Design, Landscape Architecture and Mobility planning.



Ill.7: Axonometric view of the chosen approaches

Problem Formulation

How to enhance elderly mental and physical health using elderly-friendly mobility and design within the public space?

Interaction
How to tackle loneliness by providing the opportunity for physical (verbal) and visual interaction?

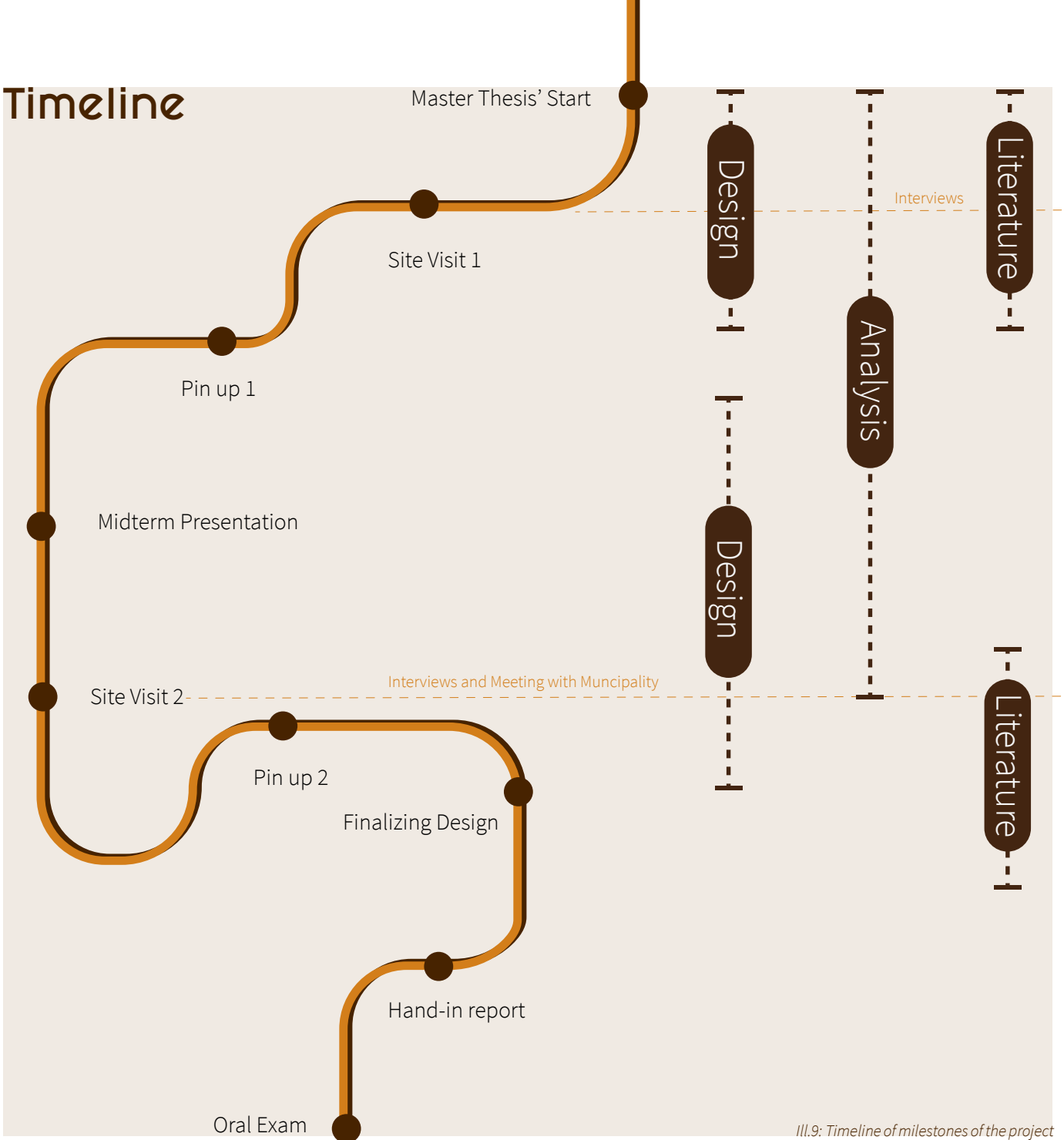
Accessibility
How to balance out automobility (cars and scooters) and soft mobility while providing safe travel for the elderly?

Pleasantness
How can public space promote well-being through a focus on nature?

Safety
How to tackle physical and feelings of vulnerability day and night?

Ill.8: Diagrams for four themes of the project

METHODE



Ill.9: Timeline of milestones of the project

Project Organisation

Phase 1. Site Selection

Before the master thesis, the members of the group brainstormed on the choice of site. Since the common choice was to work on the elderly as the main target group, a research in urban spaces which would gather these users was conducted. As the group members both worked or studied in England, the country was considered for the choice of the site. Of particular interest was the town of Blackpool, in the top five towns with the highest average age in England. It is also a deprived urban area, implying the need for quality public space even more than any other town. Once Blackpool was chosen, the research focused on a site within the town, grouping flows of older people crossing a public space but not using it. In this regard, based on SWOT analysis (Cf. Appendix p.146) Solaris Recreation Ground appeared to be a relevant site. Its café is particularly popular among the local community, mostly the elderly, but the outdoor space is very little used. In addition to the Solaris Recreation ground, the site has been extended to the Promenade, due to its importance in terms of mobility and connection, and Harrowside, the street connecting the Solaris to the East. This is a steep street, offering a vantage point on the site, but difficult to access for the elderly.

Phase 2. Literature Review

As a whole, the texts selected for the literature review highlight how improving the structure and the activities within the public space contribute to the elderly's mental and physical health. Although there is a critical perspective regarding the relationship between the form of the built environment and social interaction, the latest research supports that urban environmental satisfaction contributes to neighbourhood relations and interactions. Some of the texts also indicate that not only the interaction with people but also the interaction with the environment, for instance by the means of a sensory garden, is beneficial for mental health and inclusivity, especially for elderly users. Additionally, design can strongly impact human senses and emotions regarding a place.

The literature also stresses the benefits of good accessibility. Inclusive accessibility towards and inside a public space can indeed turn it into the beating heart of the community. However, an accessible urban space has to be so for every type of mobility, meaning both automobile and slow mobility, but also the different ranges of human mobility. Not all users have the same mobile capacities, and this point has to be taken into account to create an accessible public space for young, elderly and disabled users. For these users, the focus should be on connectivity around and towards a selected urban space.

The literature selected for the thesis project also focuses on social interactions to explore the impact of the urban environment on the elderly' loneliness and isolation. Narrowed down to the local context, some texts explore the bond between Blackpool's public spaces and activities providing social interactions, such as dance.

This focus on local specificities in the literature stresses also the necessity to consider the connection between public space and social justice, as Blackpool gathered major social issues and deprivation.

Phase 3. Site Visit

Along with the project, two site visits have been organised (Cf. Appendix p.142-143). The first one took place at the very beginning of the project and was conducted to understand the main elements structuring the site. The second visit, at the beginning of April, allowed us to finalise the observation research on user activity and flows and to establish different design scenarios with a direct eye on the site. On the second site visit, a meeting and tour of the town have also been organised with the Blackpool Council (Cf. Appendix p.144) who have been collaborating on the thesis since the early phase of the project. During both visits, group members took photos and interviewed local stakeholders (Cf. Appendix p.145) and users of the Solaris Café.

Phase 4. Multi-scalar Analysis

The analysis has been carried through three scales: the town scale, the neighbourhood scale and the site scale. For each of the scales, the selected themes have been chosen so they encompass the four dimensions of Sensing a Stroll which are accessibility, interaction, pleasantness and safety.

Phase 5. Design Development

The design proposal was developed with the help of different tools. Hand-sketching was privileged in the first phase of creation, because of its speed of execution and the place it leaves for the discussion between the group members (Cf. Appendix p.147). The ideas developed by hand-sketching were then physically transferred through the creation of two models. These physical models allowed a better understanding of space and these scales. Finally, the group worked with graphic tools, such as CAD and BIM software. These tools allowed us to technically detail all elements of the design. A first draft of the design development was presented in March at the mid-term review (Cf. Appendix p.148), and the comments received from the supervisors and peers contributed to the final design.

Theory

Elderly-friendly urban space

By focusing on the elderly population, the project is fitting in the Western countries' dynamic of global ageing societies. To propose a strategy dedicated to this growing category of users, designers must now take into account the theoretical needs of the elderly and their ways of apprehending the urban environment. The following theoretical chapter was methodologically taken to understand the dynamics encompassing elderly and urban space and thus propose the main themes structuring the thesis Project.

Defining Elderly

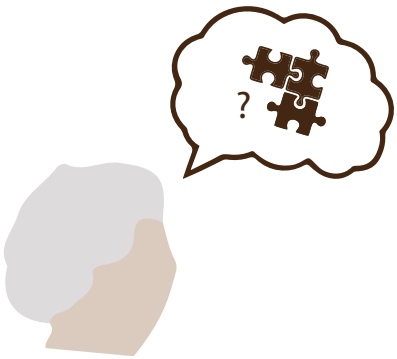
When apprehending the elderly population, it is difficult to imagine a set of similar individuals. The term elderly is not intended to represent a homogenous category of users, and adults aged 65 years and over indeed include a wide spectrum of experiences, interests, capacities, fragilities, and values (Heatwole Shank & Cutchin, 2016). However, research seems to indicate some similar needs in terms of health for adults aged 65 years and over. We are talking here about needs in terms of plural health, which refer to Physical Health, Mental health, Social Health and Urban environment services (Hasemi et al., 2017). These needs are interconnected with each other and can be fulfilled through the public space. The care of the elderly differs therefore from the care of other adults, and this statement is also true regarding the expectations and constraints they may experience daily.

Independence of choice and movement

One could claim that independence of choice is particularly important for every user of the public realm, but it is nonetheless especially important for older users. The independence of choice can be judged by the transportation network and the available services (Ball, 2012: p.19). A neighbourhood providing few services and a poor offer in terms of public transportation can lead to frustration for its users, due to the feeling of being blocked in its power and independence of decision. In gerontological psychology, a high level of frustration in an individual can have a strong impact on the feeling of well-being (Emlet & Moceri, 2012). This theory also goes hand to hand with the notion of 'Ageing in Place', which states that the elderly who continue to live in their own home are more likely to benefit from better social, financial, and health outcomes, and a higher opportunity to express and put into practice their personal choices, thus leading to fewer depressive symptoms (Heatwole Shank & Cutchin, 2016).

Going further, independence in terms of movement also has a significant impact on the well-being of the elderly. From a user understanding perspective, independence of movement can be associated with the notion of legibility. The term legibility refers to the capacity of space to be clear enough for users and passers-by to understand it rapidly. For many elderly, their cognitive mapping of space is strongly impacting their will to move around it (Akagi & Adachi, 2015). The ability of residents to 'figure out a mental image of space means that the

design of this space has a high rate of legibility'. In other words, 'the fundamental factor of the space legibility can be understood by the drawn image in residents' minds regarding it, and their movements within it' (Bentley et al., 1985; Lynch, 1984; Abbaszadeh et al., 2009). As cognitive and mental capacities diminish with age, the need for a readable space appears therefore essential for the elderly. If the space appears unclear to them and they feel like they would not find their way, the elderly will be led to reducing their physical movements outside the home. In terms of methodology, understanding the legibility of a place must be done through the eyes of its users, and thus requires a consultation process, through interviews, mental mapping or community workshops for instance.



Ill.10: Mental image of a space for elderly

Lynch (1984) detailed the components of legibility and stated that 'the five affected elements of legibility were nodes, edges, paths, landmarks and districts'. Therefore, the enhancement of these five elements in spaces leads to more legibility (Hani, 2014) and an increased feeling of independence of movement for the elderly.

A space to move

Global efforts to promote age-friendly cities, and encourage the movement of the elderly within the urban environment have been added to the agenda among small and big-scale governing institutions. In 2002, the World Health Organisation (WHO) set up a programme encompassing the 'Active ageing framework' which emphasised a 'life-course approach and interventions at early ages to promote lifelong health' (WHO, 2002). Despite these initiatives supporting intergenerational in the public realm, older people and children are groups which are the most likely to experience mobility injustices, highlighting the importance to acknowledge the inclusivity of the public space regarding a mobility approach (Murray, 2015). Indeed, 'many studies emphasise the well-being aspects of older people's mobility' (Murray, 2015). Their ability to move in the public space freely and in a comfortable way can indeed positively impact both their physical and mental health. All forms of physical activity can be beneficial for elderly users, but the emphasis can be put on promoting health-enhancing physical activity, which is defined as 'any form of physical activity that benefits health and functional capacity without undue harm or risk' (Edwards & Tsouros,

2008). Therefore, a space inviting moderate physical activity would at the same time 'promote mental, physical and social well-being and help to prevent illness, disability and obesity' (Edwards & Tsouros, 2008). For children, promoting moderate physical activity can be easily done through the implementation of playgrounds or small sports fields. For the elderly, wide paths and a clear definition of the types of transport are already a strong turn to encourage physical activity. For example, 'while creating a cycling path in a particular neighbourhood may seem to benefit all the residents, the elderly may not use it if it is designed for fast cycling and has no designated path for a pedestrian walk' (Edwards & Tsouros, 2008). A wide pedestrian sidewalk along the car lanes also reinforces the comfort of the elderly and thus encourages their physical movement. An elderly-friendly public space must therefore be broad and clearly separate between types of transport, but must also promote a sense of belonging for this community, to attract the elderly.

The importance of 'place'

The fields of urban and geographical gerontology have explored the relationship that the elderly have with their home, and by extension, to their surrounding urban environment. For elderly users, 'the urban place is not seen as passive containers of social life but rather as integral parts of their social lives' (Andrews, Cutchin, McCracken, Phillips, & Wiles, 2007). A local environment is a meaningful place because it conveys a sense of belonging, which is enhanced by the community (Heatwole Shank & Cutchin, 2016). The community structures a place as it 'can shape thoughts, actions and interactions of people, their histories, and their desired futures' (Smith & Cartlidge, 2011). A place carrying a solid community is thus often conceptualised as a receptacle of meaning. For the elderly, the 'sense of place' grows a stronger meaning, as it encompasses an emotional attachment and often identity, which is enhanced by time (Heatwole Shank & Cutchin, 2016). This perception of the local urban place is internalised by elderly individuals and becomes an extension of themself via accumulated experiences with other people in a particular location (Rowles 1983b in Heatwole Shank & Cutchin, 2016). The theoretical place of the community in the urban landscape of the elderly' daily life is thus a structuring element for their feeling of inclusion.

Community

Research on urban areas with a majority of older inhabitants has shown that a solid community base has benefits in interaction between elderly inhabitants (Emlet & Moceri, 2012 in Heatwole Shank & Cutchin, 2016). When the elderly experience retirement, the departure of children from the household or mental and physical decline, those events have a profound impact on the feeling of isolation of older people and make them more vulnerable. An elderly-friendly community, therefore, plays the role of 'assisting older adults to maintain social connectedness while deepening existing relationships' (Emlet & Moceri, 2012). The local community thus enhances the social capital of elderly

individuals through their relationships, which resulted later in their contribution to the community. The concept of contribution 'recognises the wisdom and experience of older citizens and sees them as more than clients, but rather as active contributors to community well-being' (Emlet & Moceri, 2012). By being part of an inclusive process, the elderly will be a source of income as well, creating a virtuous circle within the urban space.

Ill.11: Reciprocity in positive impact between elderly and their community

From the opposite perspective, an exclusion from the community can have strong negative effects on the elderly's well-being. The exclusion of elderly inhabitants can be conceptualised through three key themes: participation and integration (beyond the labour market), spatial segregation, and institutional disengagement (Emlet & Moceri, 2012).

Therefore, there is a need to promote an attractive and accessible community space within a small-scale urban area. If such a community space exists, the urban design should have the function of inviting elderly users to meet and use the space. The following four theories constitute the main themes highlighted through the thesis project, to strengthen the well-being of the elderly within the urban environment.

Interaction

Recently, the reduction of isolation amongst the elderly, including through their local community, is taking a growing part in urban design projects (Ibler, 2021; Clerk, 2021; Roberts, 2021). However, this is a fragile process, and it appears that even if the elderly are physically or technically able to communicate with others, a sudden feeling of loneliness would negatively impact their feeling of well-being and health. For instance, Dutch research revealed that people suffering from loneliness have a 64% greater risk of dementia (Campbell, 2012).

Additionally, the University of California found that 43% of seniors felt lonely while only 18% lived alone (Kim, 2012). Nonetheless, academic papers consider the link between loneliness, public space and the elderly are rare. One can therefore question the means to reduce feelings of loneliness of the elderly within this scope. If the inclusion in a local community is an element that favours a strong feeling of well-being, it appears that the intergenerational link is also to be privileged. Studies indeed found that intergenerational communication contributes to the elderly's mental and physical health (Senior Life Style, n.d.; Drury, et al, 2017; Murayama, et al, 2019). Numerous studies in elderly nursing homes showcase that the contact and interaction of elderly people with children enhance their sense of well-being and also motivate their physical and mental capacities. Interaction can take multiple forms and does not only refer to verbal communication, as people can also interact through visual contact. Paay and Kjeldskov (2008) found that even if people don't interact directly if they stay amongst the others, they can feel socialising by observing others and being observed by others, naming it 'socialising by proximity'. In the scope of public space, however, interaction must be facilitated by enhanced accessibility.

Accessibility

The term accessibility has been emphasised as having the largest impact on urban environmental satisfaction, which affects livability and neighbourhood interaction (Lee 2021). Ball (2012) claims the importance of accessibility, stating that the more accessibility, the more the social and physical function will be enhanced.

According to Lee (2021), accessibility is defined as 'physical access in a community'. Therefore, it includes accessibility to various facilities in a community but can be extended to access to the community. In addition, Ball (2012) states the importance of connectivity, as a 'primary indicator of street network integrity'. Ball (2012) indeed considers that a well-connected neighbourhood is crucial to create a 'pedestrian-oriented neighbourhood' and that interactions are strongly related to connectivity. This statement is also highlighted by the WHO as part of the 'Active Ageing framework'. The organisation encourages urban policymakers to focus on accessibility, as it is considered a key element for the appropriation of space by elderly people.

Ball (2012) also states that the most important aspect of accessibility is to create a place where people want to be and ensure that they can be there rather than designing an 'avenue to gauge'. A high number of passers-by can be seen as a barrier to accessibility for the elderly.

The quality of the urban infrastructure, which results from the choice of public investment, has also an important impact on the way people use public spaces, especially at night time.

Safety

Research on livability defined safety by the number of accidents and crimes (Lee 2021). Another theory indicates that different aspects are defining the feeling of safety, such as physical, actual safety and perspective safety (Branas, South et al. 2018).

Combined, these aspects provide a fully safe urban environment to all users. More in detail, lighting is seen as the main element defining the level of safety at night for passers-by, as mentioned under the 'Secured by Design' section in 'National Model Design Code Part 2' for England (2021). Various studies indeed illustrate that girls, women and elderly users are less likely to cross and experience an urban facility that is not well lit, and associated with an unsafe setting (Edward & Tsouros, 2008). Studies have been carried out on the use of urban space by these at-risk populations. The use of the city by the three groups differs above all in their mobility and their motives for travel. Focusing on night-time, it was observed that most elderly go out in groups or couples, never alone. On the whole, it would seem that these users continue to internalise mental maps to bypass urban zones associated with anxiety. Elderly, and especially women, would then be prepared to make a detour of several hundred metres to avoid an area that is poorly lit and therefore considered unsafe (A'Urba, 2011).

Additionally, other theories indicated that the existence of other people is also strongly related to safety. Jan Gehl (2021) states for instance that the potential for a safe city is strengthened generally when more people move about and stay in city space. This statement corresponds to the theory of 'eyes on the street' and '24/7 activity associated with mixed uses' by Jane Jacobs, mentioning that a visual bond to a space mitigates deviant and criminal use within it and enhances, therefore 'the feeling of safety' (Alexander, Wydeman 2020).

Thus, to contribute to safety, both changing the physical environment and inviting others' eyesight can make significant changes. However, a space that is considered only safe is not sufficient for the appropriation of older users, and this orientation must be reinforced by a sense of pleasantness.

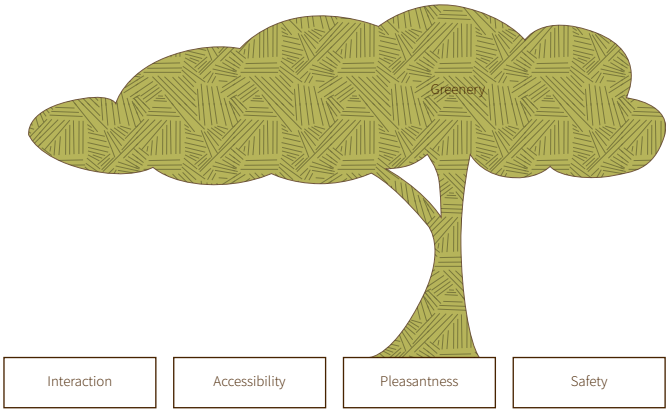
Pleasantness

Pleasantness can be defined as the degree of satisfaction that people feel for the natural environment in the region, which impacts the local's quality of life (Ball 2012). More globally, the term often refers to greenery and parks (Ball 2012).

Greenery can be linked to pleasantness as it benefits both mental and physical health. One research from the Netherlands shows that greenery within a 1.0km radius of a home affects mental and physical health, especially in the elderly (aged 65 and over) and people with low income (Maas, van Dillen et al. 2009). On the other hand, the lack of greenery increases feelings of loneliness (Maas, van Dillen et al. 2009). Additionally, research on street trees in London revealed that the density of street trees within one kilometre affects the rate of antidepressant prescribing (Taylor, Wheeler et al. 2015). But the effects of green spaces in the urban space do not end there, as contact with nature, even on the scale of a tree, can increases cognition (Bratman, Daily et al. 2015) and self-control (Beute, de Kort 2014) for users who are confronted to the landscape daily.

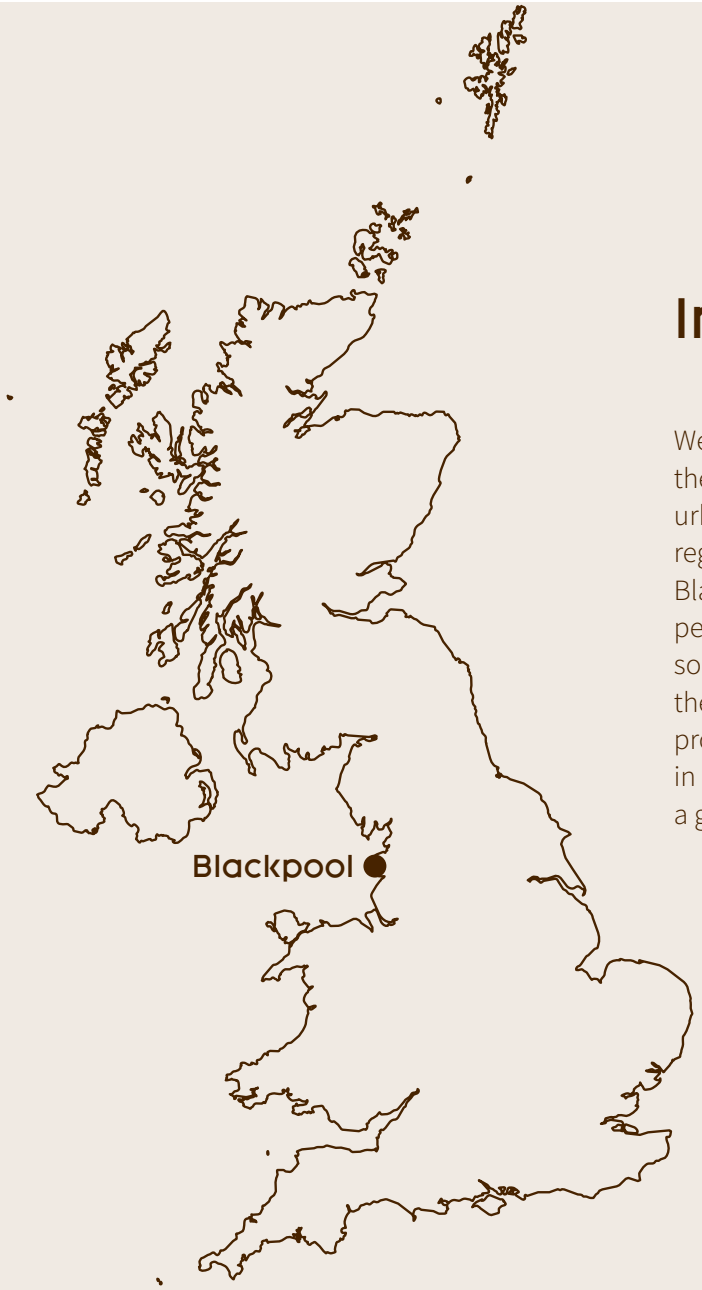
In addition to these aspects, greenery seems to increase feelings of safety. Greenery plays a role in neighbourhood space for social interaction (Korpela, Borodulin et al. 2014), and thus increases 'eyes on the street' (Branas, South et al. 2018). Therefore, it reduces aggression and violence (Kuo, Sullivan 2001), and increases the feeling of safety for users and their willingness to move around and experiment with the place (Maas, Spreeuwenberg et al. 2009).

Therefore, it can be said that greenery is beneficial not only for mental and physical health and pleasantness, but also for interaction, accessibility, and safety. From a theoretical point of view, this element seems to encompass all the key points of an elderly-friendly public space, which will therefore be examined in this report.



Ill.12: Diagram of the greenery encompassing the main themes

ANALYSIS



Ill.13: Strategic map for the location of the Blackpool in the UK

Introduction

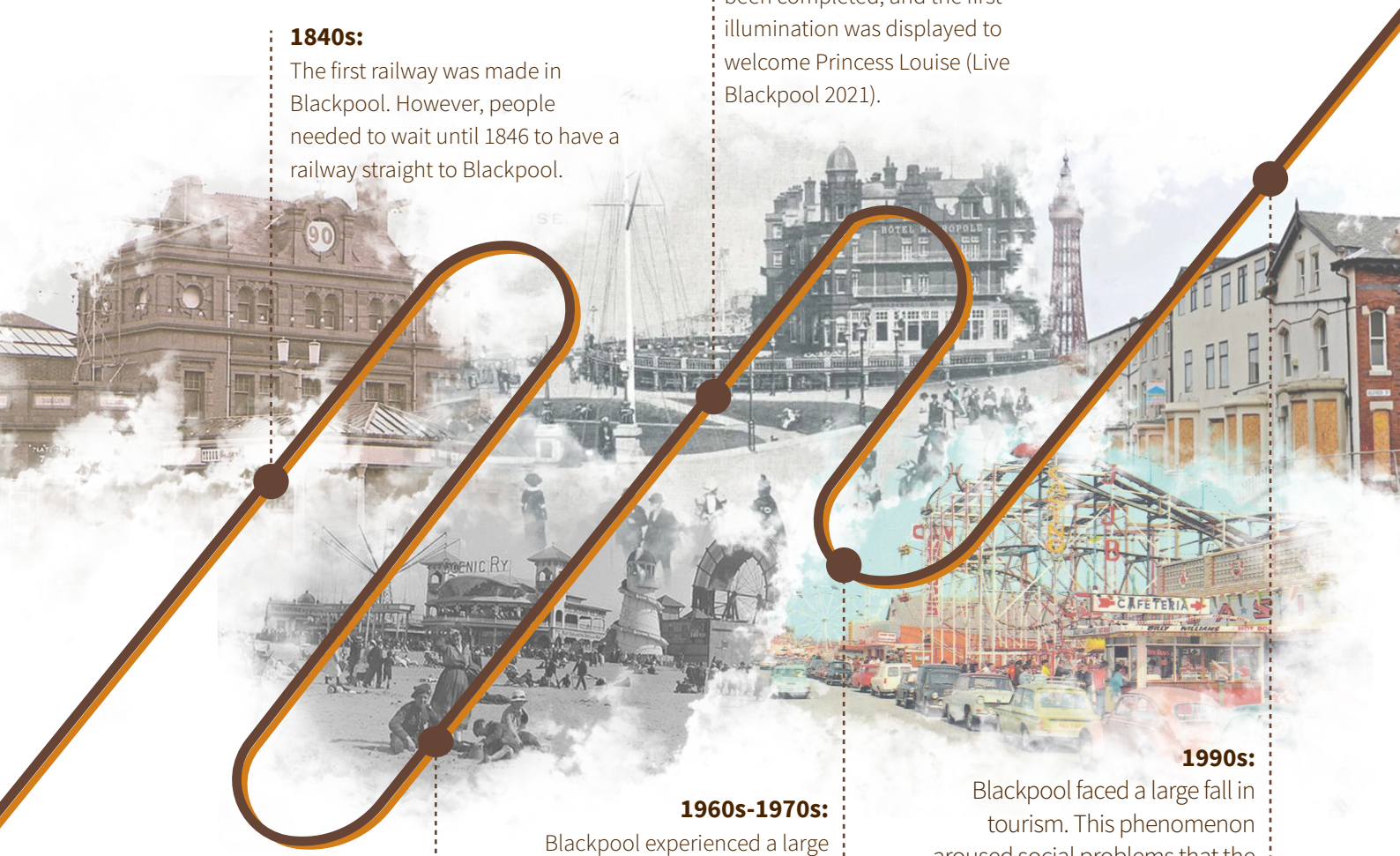
Welcome to Blackpool, the 50th biggest city in the UK. About 145,000 inhabitants are living in the urban area of this town located in the North West region of the country, in Lancashire county.

Blackpool stretches along the coast with a pedestrian and bike promenade that runs north-south along the sea. While the view is breathtaking, the town is facing many economic and social problems. The following chapter will immerse you in the reality of this particular English town. Have a good trip.

Historical Milestones

1840s:
The first railway was made in Blackpool. However, people needed to wait until 1846 to have a railway straight to Blackpool.

1900s-1910s:
The central promenade has been completed, and the first illumination was displayed to welcome Princess Louise (Live Blackpool 2021).



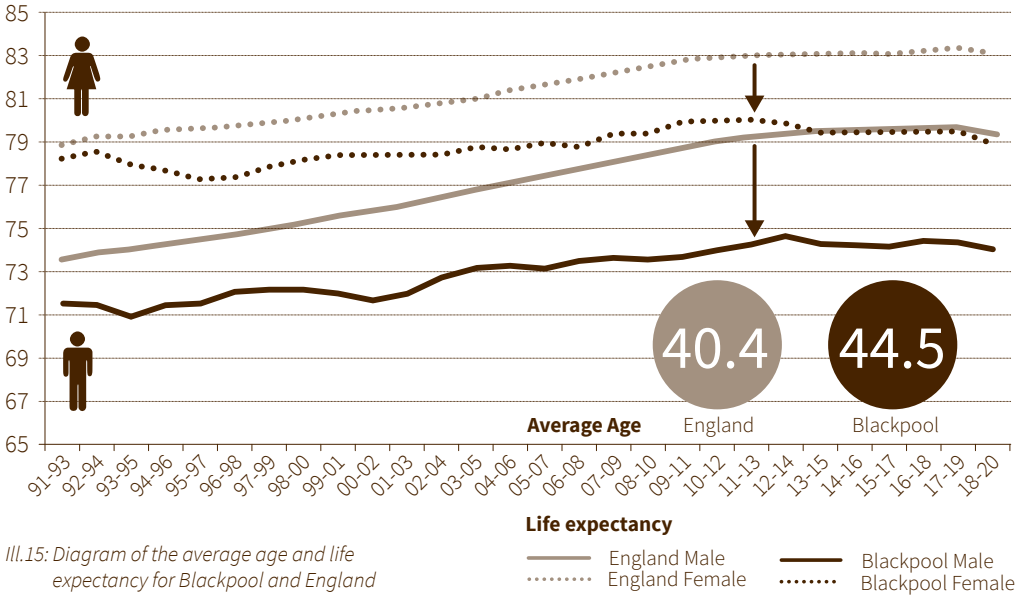
1860s-1890s:
The sightseeing facilities, such as piers, Blackpool Tower, and pleasure beach, were made. Public transportation developed in this area. Blackpool Central Train Station and tramway were also made.

1960s-1970s:
Blackpool experienced a large decline in tourism, causing deprivation. The town had to invested to attract families, and became attractive again (The Grand Theatre Blackpool 2018).

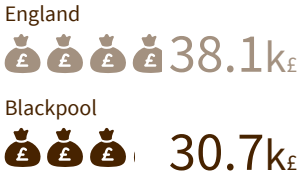
1990s:
Blackpool faced a large fall in tourism. This phenomenon aroused social problems that the town is still facing at the moment, such as high unemployment, low income, and drinking culture (Buckley, 2015).

Ill.14: Timeline of milestones of Blackpool history

Demography



Ill.15: Diagram of the average age and life expectancy for Blackpool and England



Ill.16: Diagram of the average salary in 2021 for Blackpool and England

Ill.17: Diagram of the crime per 1,000 people for Blackpool and England

The diagrams highlight the fact that Blackpool is the most deprived local authority in England on the IMD rank in 2019 (Lancashire County Council, 2019a).

In addition, the town became the most aged city in 2018 (Carter & Swinney, 2018). Although the average age in Blackpool is higher than the national average in England, life expectancy is lower than the average in England. The main cause of the early death in Blackpool is heart disease and half of the early death in 2016 is related to unhealthy lifestyles, such as smoking and poor diet (The Guardian, 2018).

The average income in Blackpool is the lowest in Lancashire County Council (Lancashire County Council, 2019b), and the main source of crime in the town is antisocial behaviour and violent crime from March 2021 to February 2022 (Plumplot, 2022).

Transports

Accessibility

Blackpool has three types of public transportation: which are train, tram, and bus. In terms of a train, the town houses two major terminals, which are part of the Northern railway network. They connect Blackpool to Liverpool, Manchester, Chester, Nottingham, and Newcastle. In addition, the tram line runs alongside the Flyde Coast and ends adjacent to the northern and southern borders of Blackpool.
Regarding tram, Ball (2012) considers 800m as the ideal distance between each tram stop, from the perspective of improving accessibility and livability for the elderly.

As the map illustrates, the frequency of train and tram stops within the neighbourhood is twice the distance recommended for elderly users. Empiricaly In Blackpool, observations, interviews with locals and data from the municipality, have shown that residents are not utilising public transportation daily and are relying mostly on car use due to the long distance between the stops. However, the neighbourhood has a solid network of transport, which could benefit from smaller distances between the stops to encourage the elderly to use it more.

Ill.18: Pictures of public transportation in the town

Ill.19: Map of the distance between train and tram stops in the town

Regeneration Project

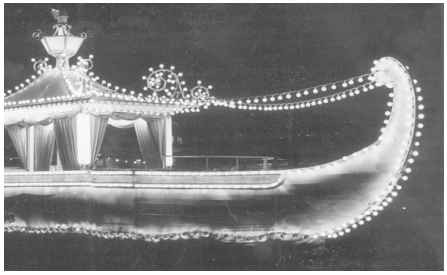
Blackpool has driven a huge regeneration project, which is the largest investment in over a century in the town with a £300 million scheme. This project aims to create more than 1,000 jobs and invite 600,000 additional visitors to Blackpool each year (ITV, 2021).
This regeneration project, named Blackpool Central, is located near the former world's busiest Central Station, which closed in 1964 (Blackpool Council, n.d). The core of the project is to create a multi-storey car park and indoor entertainment centres and to transform the three Grade II Listed buildings into a food hall, pub, and hotel.
As a part of the regeneration project, improvement in pedestrian routes and public transportation networks has also been considered (Blackpool Council, n.d).

Ill.20: Renders of the Blackpool Central regeneration project

Ill.21: Map of the distance of the regeneration site from the thesis project site

Tourism

Since the 19th century, Blackpool has positioned itself as one of England's great tourist destinations. Popular as a seaside town, Blackpool is also at the forefront of the Illuminations show, from 1879. At present, the town still bases a large part of its economy on the tourism industry but is suffering from decline. Since the 1990s, the town has lost its appeal to wealthy English families, and economic difficulties have led to social difficulties. While the city has retained its tourist image, it is now favoured by the working classes and as a gambling and theme park tourism. However, the Blackpool Illuminations remain a vibrant time of year for the town. Before Covid, the Blackpool Illuminations were attracting more than three million visitors to the town. Tourists from all over the UK

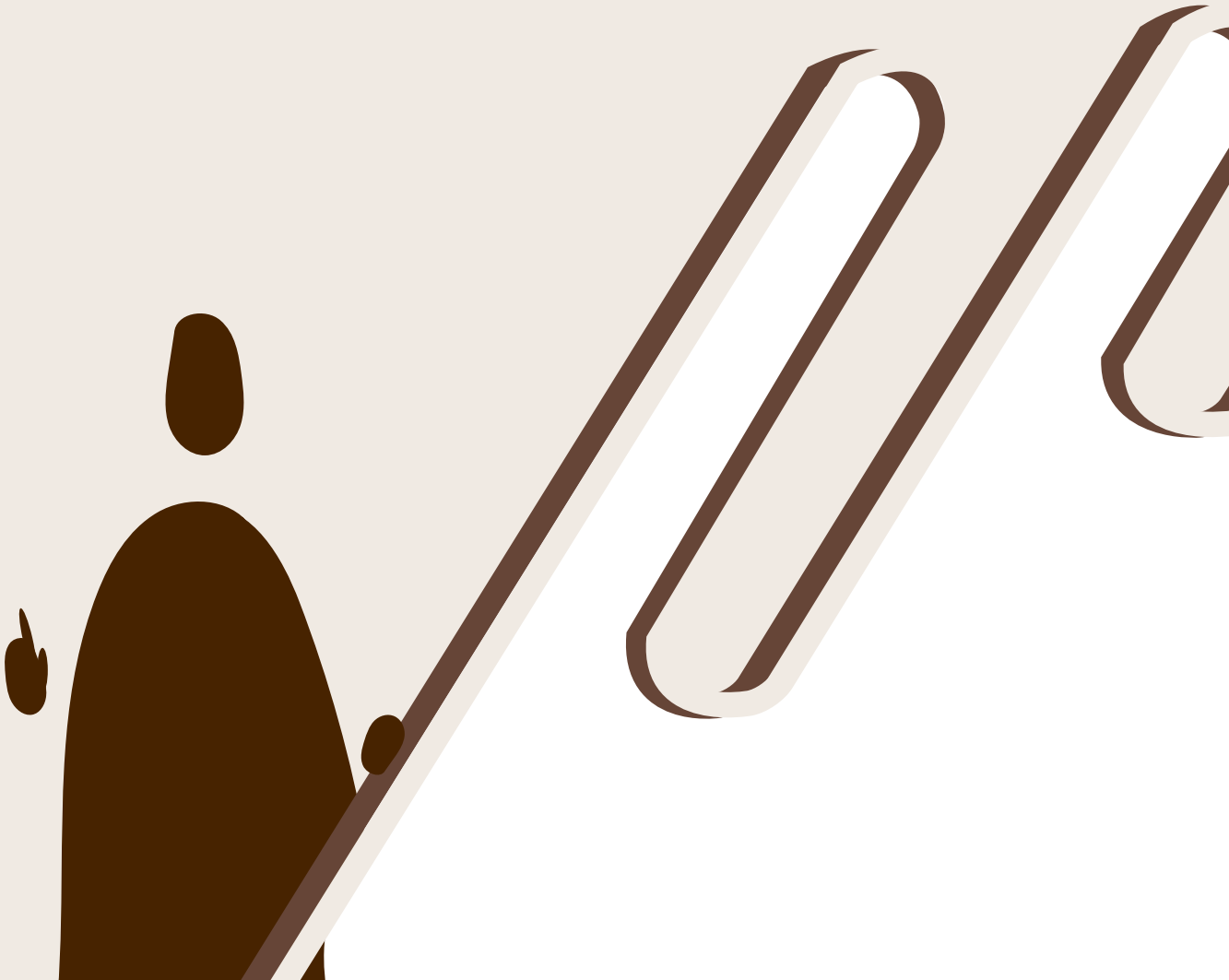


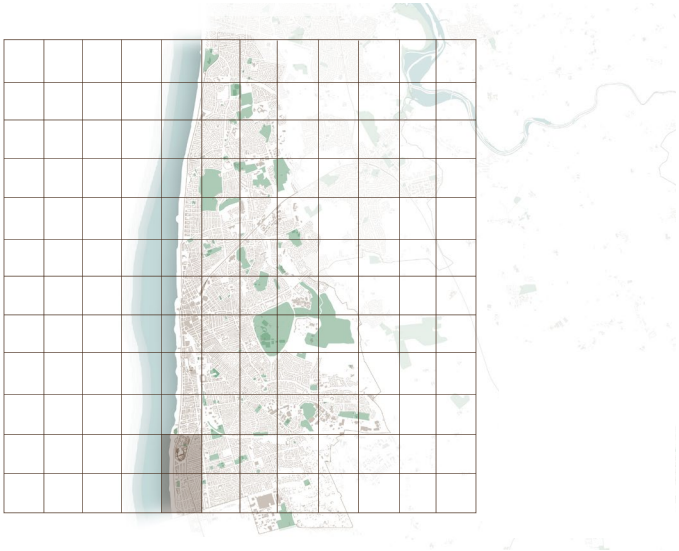
Ill.22: Pictures of tourism in Blackpool

are travelling to see the lights running between the end of August to the beginning of November. It is a town-scale spectacle featuring light-based art installations, lasers, stunning live performances, family activities and 3D projections with local, national and international artists (Visitblackpool, 2022)

What to Remember

Blackpool has significant social problems, resulting in low life expectancy and high crime rates. However, the town is a tourist attraction and its new regeneration project in the centre will strengthen its development. The transport network links the whole town effectively, which gives the forthcoming regeneration plan the potential to impact positively on the whole of Blackpool.





Ill.23: Visual sum-up of the town scale

Now... Time to zoom-in

Land Use

Interaction Safety

The land use map shows that Solaris Centre is the only facility for the local community in the neighbourhood, surrounded by hotels on the north and south and residential properties on the east. The current land use is thus in opposition to Jane Jacob's theory indicating the importance of mix-use since it arouses 24/7 activity and increases the feeling of safety (Alexander, Wydeman 2020). The lack of commercial, educational, and office buildings provides a diverse effect on the safety in the neighbourhood, particularly in winter and at night. The land use is mostly focusing on residential housing, and a nursery home and congregation for retired people are located on the east side of the urban block.



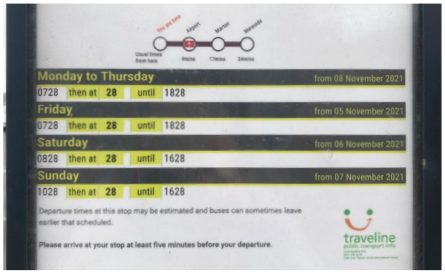
Ill.24: Pictures of housing, hotels and nursing home

Ill.25: Map for the land use in the neighbourhood

Transport

Accessibility

The map shows frequent bus stops around the site, which corresponds to the ideal distance of 0.2km in-between bus stops, indicated by Ball (2012).
However, the bus currently runs less often than once an hour. Therefore, most of the users of the site don't use buses to get to the site and tend to use private cars.
As a part of the regeneration project, the bus service is however planned to be improved with more frequency (Parkinson & Shelagh, 2021).



Ill.26: Pictures of bus stops and timetable in the neighbourhood

Ill.27: Map of the distance between bus stops in the neighbourhood

Connectivity

Accessibility

Ball (2012) states that connectivity is crucial to consider senior-friendly accessibility. A poorly connected neighbourhood makes it difficult to create a 'pedestrian-oriented neighbourhood' and transition.
Although four-ways interaction creates a better connection, most of the junctions in the neighbourhood are three-ways interactions. Additionally, it appears that all junctions facing the site are three-ways interactions and there is constant congestion at the junction between the urban block and the slope, which becomes a concern for pedestrians.

Ill.28: Pictures of four and three axes intersections in the neighbourhood

Ill.29: Map of four axes and three axes intersections in the neighbourhood

Public Greenery

Pleasantness

Although the Solaris Recreation Ground has a large lawn area with bushes and flowers, there are no street trees and flowers in the surroundings except on the lawn. There are lawns around the Solaris Recreation Ground. However, it is difficult to recognise the lawn from a distanced place. Therefore, it seems that there are no green connections around the site. A study conducted in the Netherlands found that the more green spaces people have within a 1.0km radius around their home, the more positive impact these people have on their mental and physical health. The positive effect coming from greenery is even more striking on people aged 65 and over (Maas, van Dillen et al. 2009), as they are particularly sensitive and receptive to their local environment. Therefore, the lack of public greenery around the site can affect the mental and physical condition of locals.

Ill.30: Pictures of the low density greenery in the neighbourhood

Ill.31: Map of the location of the local greenery in the neighbourhood

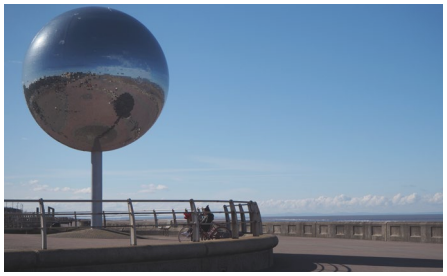
Urban Shape

Pleasantness

Curved lines and forms occupy a special place in the Western traditions of philosophy, psychology, and aesthetics (Valentine, 1913 in Gómez-Puerto et al., 2016). Walking around the neighbourhood, the presence of these urban forms appears particularly striking. In this area of Blackpool, and particularly on the Promenade, the hardscape showcases a predominance of curved shapes. The benches at the Promenade, made of steel, are formed as curved lines, depicting a half-circle. The street lights around reflect this curved pattern and can be abstractly associated with the benches in the form of a circle. Whether it's the ground markings or the urban design, the hardscape ensemble provides a more pleasant aspect to the neighbourhood. Indeed, 'curved shapes have often been regarded as more harmonious, relaxing, or pleasant—and more in consonance with nature—than straight lines' (Gómez-Puerto et al., 2016), which indicates more pleasantness added to the neighbourhood through the implementation of curved shapes.

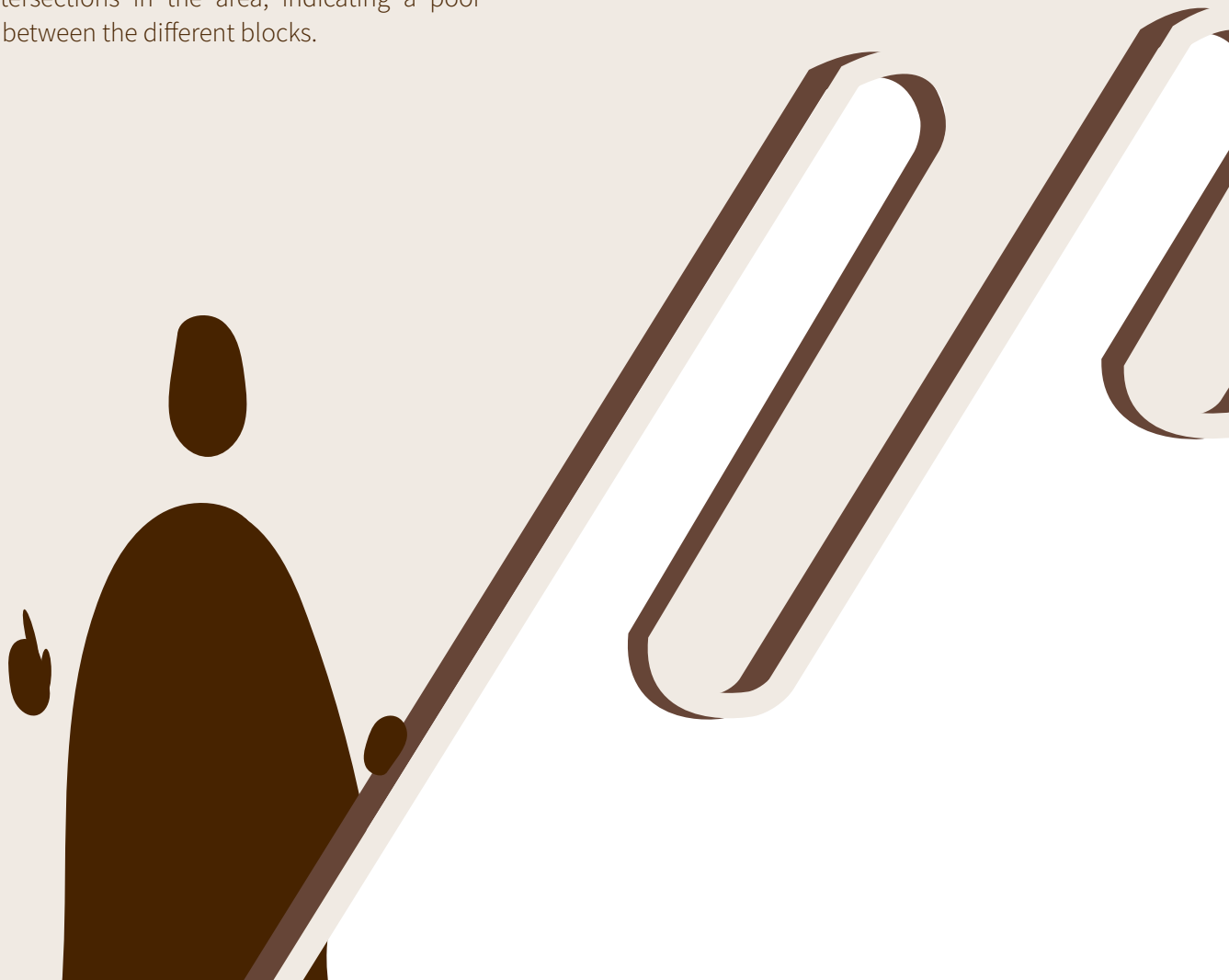
Ill.32: Pictures of curved and geometric shapes in the neighbourhood

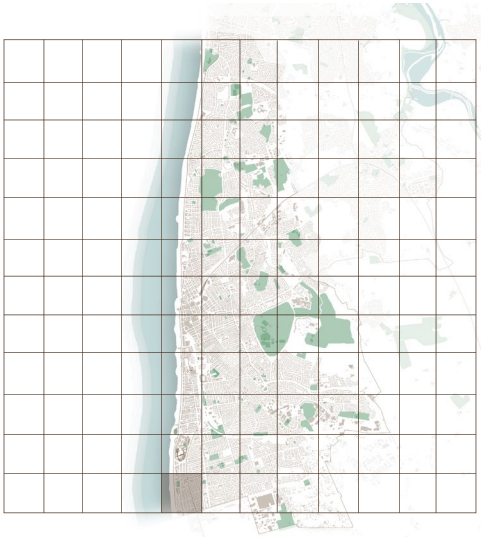
Ill.33: Abstract diagram of curved and geometric shapes in the neighbourhood



What to Remember

Overall, the neighbourhood is mainly occupied by housing. Two of those are dedicated to retired people, and nursing rooms for the elderly are regularly located throughout the area. The centrally located café is the only place dedicated to the local community. Green spaces are few and far between, in this area dominated by curved shapes on the hardscape. There are only two four-axis intersections in the area, indicating a poor connection between the different blocks.





Ill.34: Visual for sum-up of the neighbourhood scale

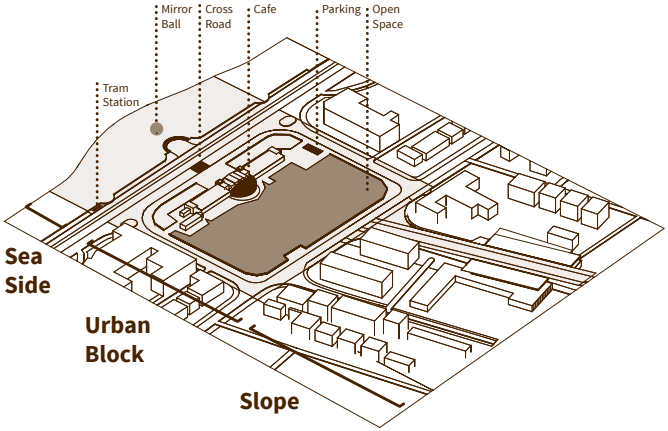
Now... Time to zoom-in

Site Overview

Ill.35: Bird-eye picture of the site and its main landmarks

Overall, the site can be sub-divided into three zones: the Promenade, the urban block, and the slope to downtown. The Solaris Centre is placed at the centre of the site. Along with it, the Solaris Recreation Ground fills a large part of the urban block. These spaces are used for community gatherings and as dog-friendly area. Travel towards and from the site are mostly done through the slope, leading to a residential area and a retail zone.

The proximity of the Promenade with the seaside does not represent a major danger in terms of flooding (Cf. Appendix p.141). In this area, the Mirror Ball is recognised as a main landmark and meeting point by the locals.



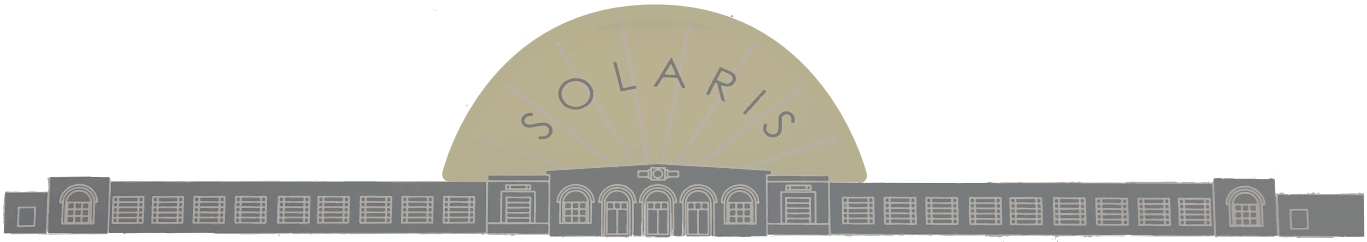
Ill.36: Diagram of the three zones of the site

Ill.37: Pictures of three zones; the seaside, urban block and slope

Solaris Café

Solaris Centre represents the vibrant heart of the site, driving initiatives and attracting user flows. It houses a Café, which opens from 9:00 am to 4:00 pm, an association for autistic people, an exhibition space and a conference centre. The empty rooms are also used by the University of Blackpool for certain occasions.
Overall, the building has a rectangular shape, with a brick facade complimented on the East side by a glass pavilion. It is from this pavilion that the building takes its name 'Solaris'. The angles of its facade seem to create the radius of the sun, starting from the centre of the building and extending outwards. On the other side, to the west, the facade of the building is a listed Art Deco monument.

Ill.38: Picture of the Eastern facade of Solaris Centre

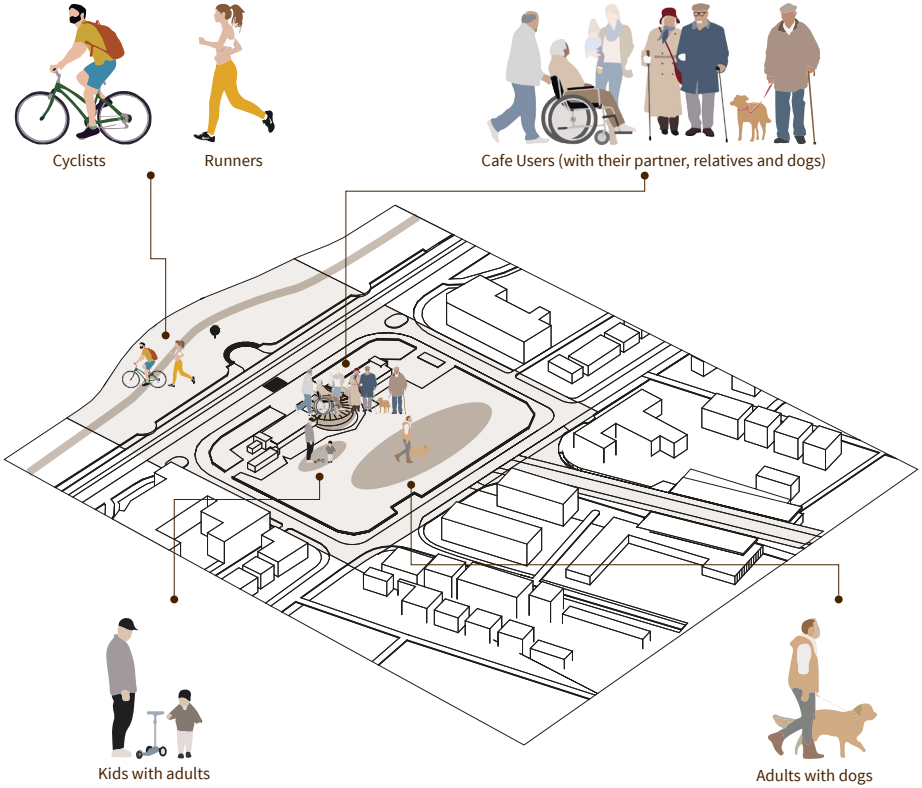


Ill.39: Picture of logo for Solaris Centre

Ill.40: Picture of the Western facade of Solaris Centre

Users

Interaction



Ill.41: Axonometric view of the user groups and their main location

There are two types of users of the site, which can be characterised in terms of the ones remaining within the site and the ones going through the site.
The users staying are mostly the customers of the café, dog owners and kids with adults. The Solaris café is often crowded with people, generally over 50 years old, and some of them come with their children and grandchildren. As an understanding, one of the café employees mentioned (Cf. Appendix p.145) that the customers of the café are mostly regulars, local inhabitants being therefore the base of the café target group. As not only the cafe but also the Solaris Recreation Ground is dog-friendly, dog owners also enjoy both the outside and inside spaces of the site.
Most of the users come to the site by vehicle. There are free parking spaces next to the Solaris Centre, a rare thing in Blackpool, which contributes to inviting people.
The users who go through the site are mainly runners and cyclists, and they are mainly found along the Promenade next to the sea.

Stake Holders

Interaction

In addition to users of the site, Blackpool council and Friends of Solaris Park are the main stakeholders for the site.

First and foremost, both the land of the Solaris Recreation Ground and the existing building including a cafe are owned by the Blackpool council. There is also a community volunteer group, Friends of Solaris Park, with a focus on Dementia Friendly Garden established in 2015. They gather every week and maintain plantings, organise community gardening, as well as local children pond dipping.

As they fundraise in aid of SSAFA (the Armed Forces charity, the Soldiers, Sailors, Airmen and Families Association) and Alzheimer's association, they hold seasonal events throughout the year for locals.

Blackpool Council

BUILDING A BETTER COMMUNITY FOR ALL

Ill.42: Logo of Blackpool council

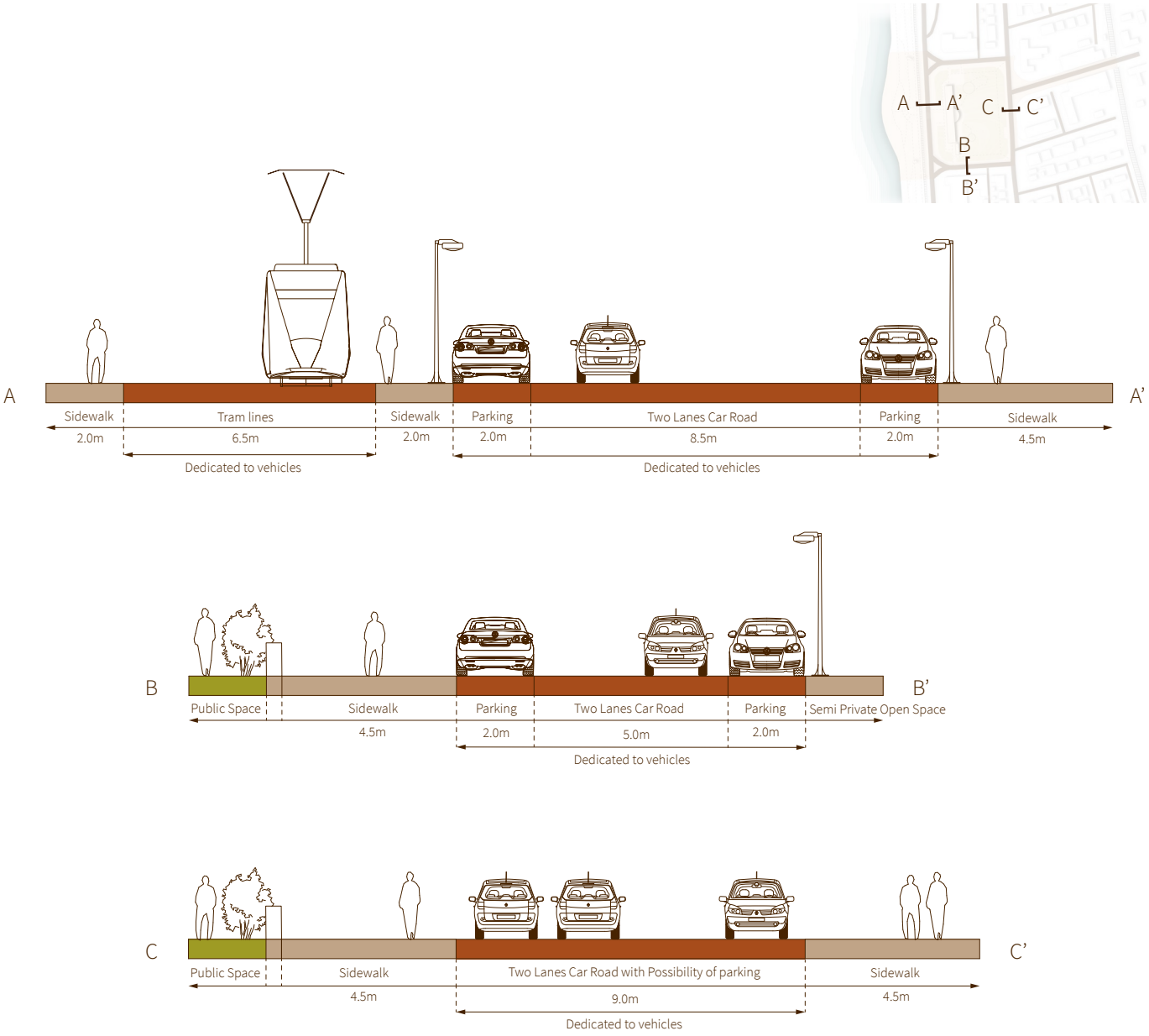
Ill.43: A garden maintained by Friends of Solaris Park

Traffic

Accessibility

The surrounding roads of the Promenade and the Solaris Recreation Ground are mostly car-dominated. As illustrated on the opposite section, New Promenade has the function of being the main traffic lane with a road width of 8.5 m. The street runs along the Promenade throughout the city, creating mild sound pollution (Cf. Appendix p.140) in the site. Around the site, the pedestrian sidewalks are rather large (4.5m), which allows good accessibility for the elderly. However, there are no cycle paths along the roads, making the overall accessibility for soft mobility incomplete. The only pedestrian crossing path between the Promenade and the Solaris is located in front of the Mirror Ball, and the observation analyses showed many flows of users outside this pedestrian crossing, highlighting the need for a better pedestrian connection between the two areas.

Ill.44: Pictures of the three main roads



Ill.45: Traffic sections at the three main roads

Access

Accessibility

The access for soft mobility towards the site can be classified into three categories; access from the north and the south, access towards The Solaris Recreation Ground, and access from the slope. The Promenade plays the main role of providing access from the north and the south connecting the site with other parts of Blackpool. However, because of the street called New Promenade (or highway A584), the access from the Promenade to the Solaris Recreation Ground is limited to one point via the crosswalk.

Regarding the access to the Solaris Recreation Ground, the brick wall that surrounds it creates a border in the access. Currently, there are six entrances at the brick wall within a perimeter of 500m.

The site is also accessible from downtown via Harrow Side. Because of the elevation towards the northeast, the slope provides clear visibility to the Solaris Centre and Solaris Recreation Ground. On the other hand, due to the 11 m elevation of Harrow Side, some elderly have to stop in the middle to take a break while going over the slope.

Ill.46: Pictures of the access to the site

Ill.47: Main access to the site site based on transport types

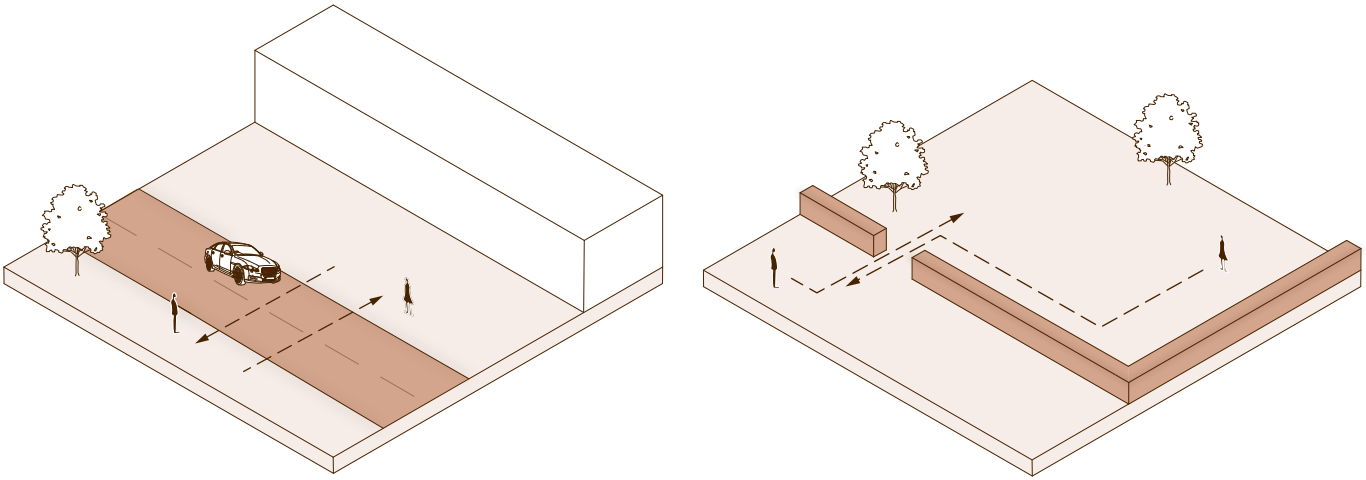
Flows & Borders

Accessibility Pleasantness

An observation of the pedestrian flows has been carried out to apprehend an overview of the movements within the site. These flows were analysed for two hours at three times of the day on a specific day and therefore do not provide a solid basis for empirical data extraction. This analysis is established for observation and the understanding of a general trend at a specific time of the year. Globally, flow observation clarifies the tendency for straight flow within the site and the relationship between the flow and the weather, which have been observed at different times of the day.

Regarding the straight flow, people seem to prefer straight travel between the north and the south, as well as the east and the west. As mentioned in the Access analysis, there is a continuous north-south flow on the Promenade throughout the day. The critical flow within the site is the flow between the east and the west. Although the gate located to the east is small and made of rusty iron, people tend to use it to go to the west side, therefore minimising the detour. Additionally, both the site visit in February and April showcased that some people ignored the crosswalk and decided to take a shortcut between the tram station and the east side.

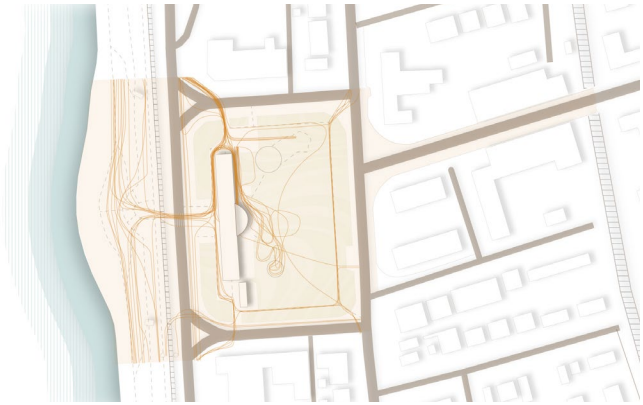
In addition to this, the observation revealed that flows of people are affected by the weather condition. When the weather is windy and cold, people tend to follow the path and seldom take detours. However, when it gets warmer and sunnier, more people tend to utilise the recreation ground, play and interact there. The flows, therefore, turn from 'passing-through' to 'remaining' flows. Under the windy condition, it was also clear that wind protection is key for people to decide where to stay.



Ill.48: Axonometric views of the hardscape elements blocking the flows

9:30-10:00 (Light rain)

12:30-13:30 (Sun and rain)



15:30-16:30 (Light rain)

Legend

Pedestrian flow

Observation
on 07. Apr. 2022 (Thu)

Ill.49: Pedestrian flows observed at three times of a day

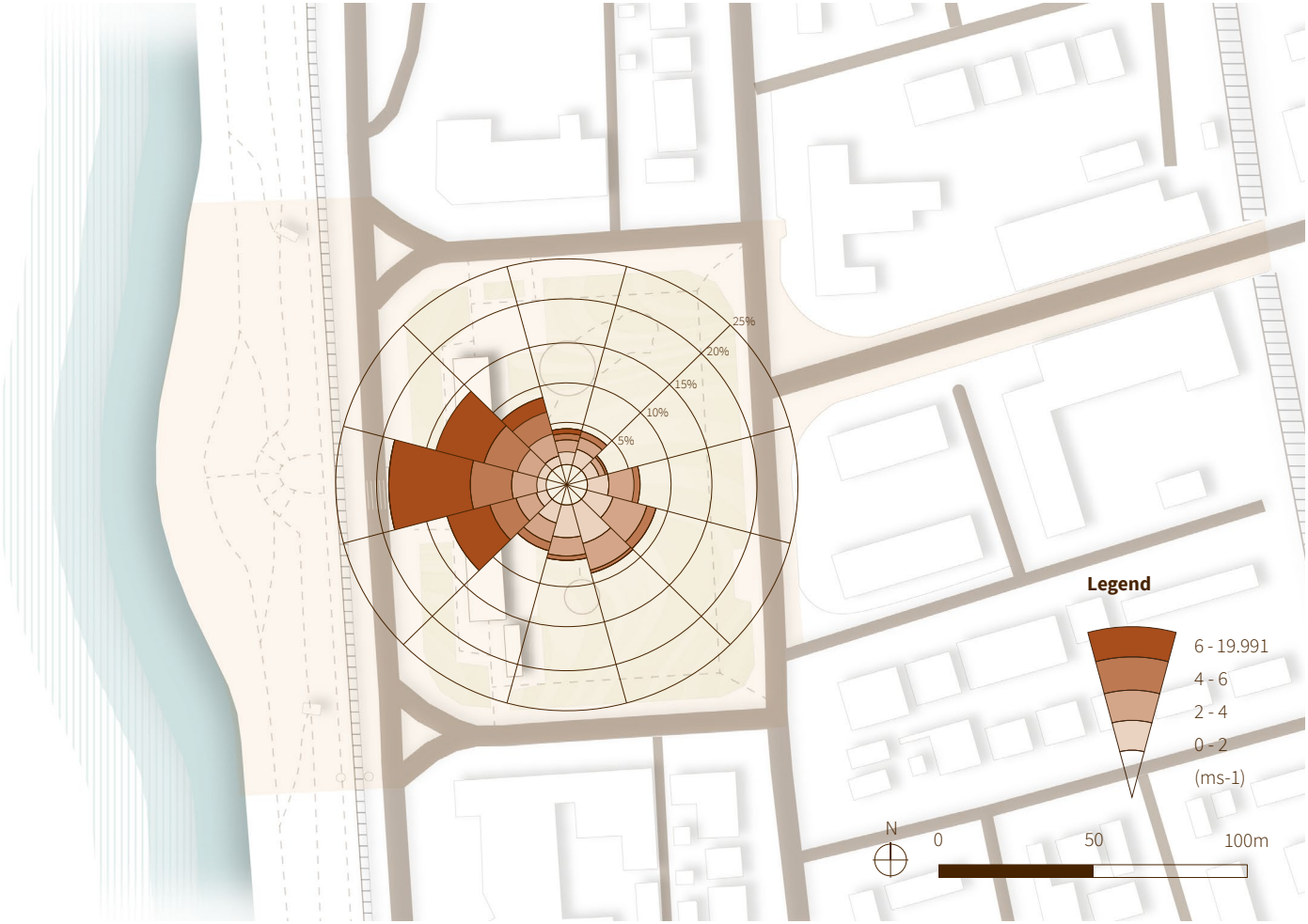
Wind

Pleasantness

The site is particularly affected by gusty winds coming from the sea. This wind from the west side is recognised as ‘Near Gale’, whilst wind from the northwest and southwest are ‘Strong Breeze’. Although the wind speed from the northwest and southwest are almost the same, a building for public toilets protects the open space from this wind from the southwest. The existing Solaris building also has a role in wind-breaking. However, the building’s height of 5.0m at the centre of the public space, is not enough to cover the full site, letting the sides of the building particularly exposed to the wind.

Based on the site visits, it was observed that it is sometimes difficult to walk alongside the coastline and locals tend to walk on a back street instead of walking on the Promenade.

Ill.50: Pictures of the impact of wind on softscape and people



Ill.51: Wind rose for Blackpool

Affordance

Interaction Accessibility Safety

The affordance within the site can be explained in terms of physical and social affordance.
Based on the argument on 'Situated social interaction' (Paay & Kjeldskov, 2008), physical affordance is explained as an indication of what people can do based on physical components, while social affordance can be defined as an indication of how people can interact with the surroundings based on other's existence and activities.
Regarding physical affordance, the different zones of the site allow clear visibility to the surroundings, but the boundary around and within the site blocks accessibility and the potential interaction between people.
On the other hand, in terms of social affordance, there are some tendencies in people's activity, such as meeting and gathering points at the café and the Mirror Ball, as well as playing with dogs at the Solaris Recreation Ground. It appears that those activities cognitively interact with the passers-by, as they seem to often reproduce the surrounding activities.
However, some minor deviant uses are also observed, such as crossing car roads ignoring a traffic light or the crossing path designated.

\+ Positive affordance — Negative affordance

A

\+ Provides overview to the ground
— Hard for elderly to go up

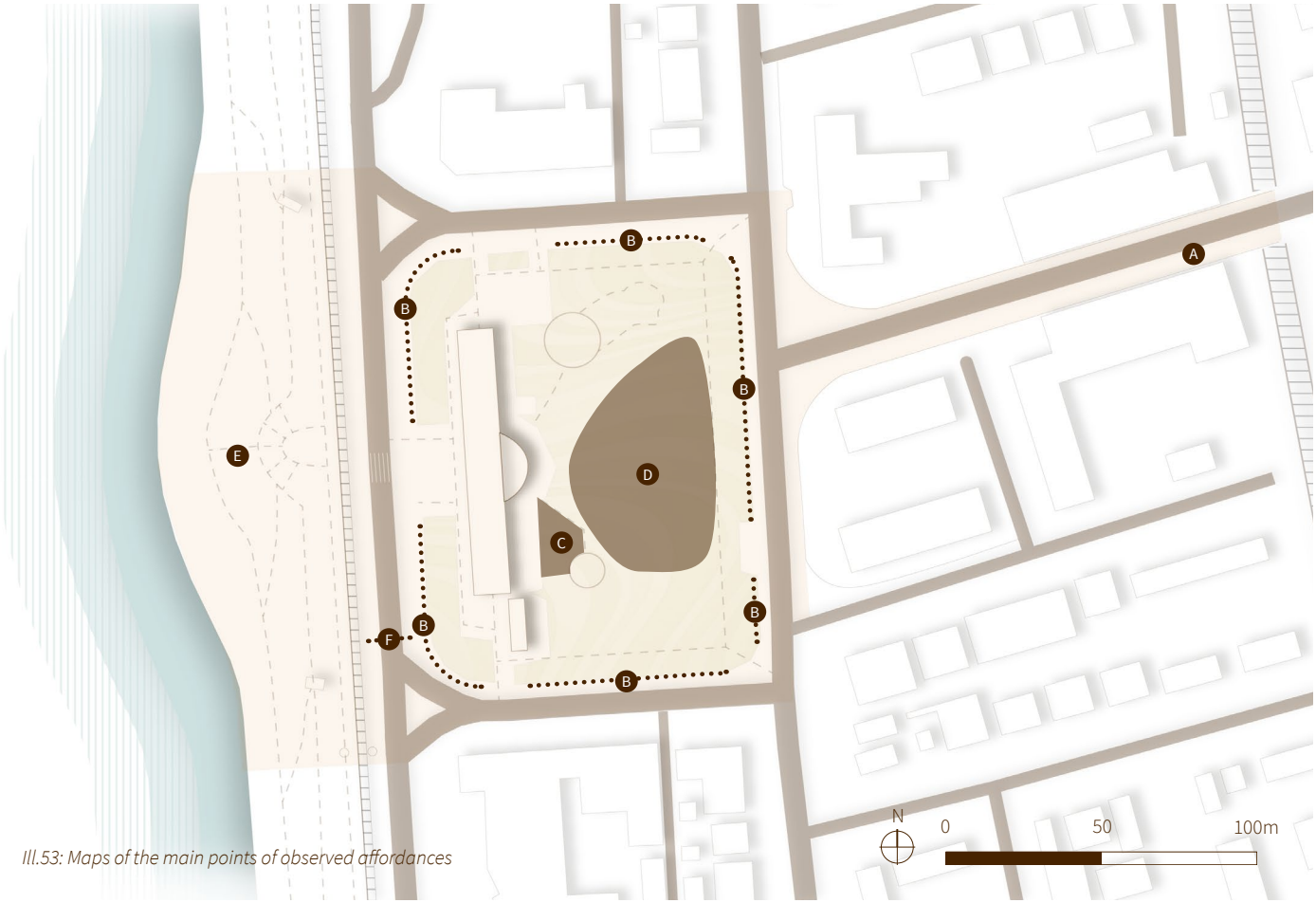
B

\+ Increases the feeling of safety by visibility
— Limits the access and visibility to the ground

C

\+ Keep the area safe for children
— Fence prevents intergenerational communication

Ill.52: Pictures of observed affordances



Ill.53: Maps of the main points of observed affordances

\+ People at the open space indicates the opportunity to play with dogs

\+ People indicates the Mirror Ball as a landmark (used as a meeting point and photo spot)

− People (especially elderly) make shortcuts between the tram station and the urban block

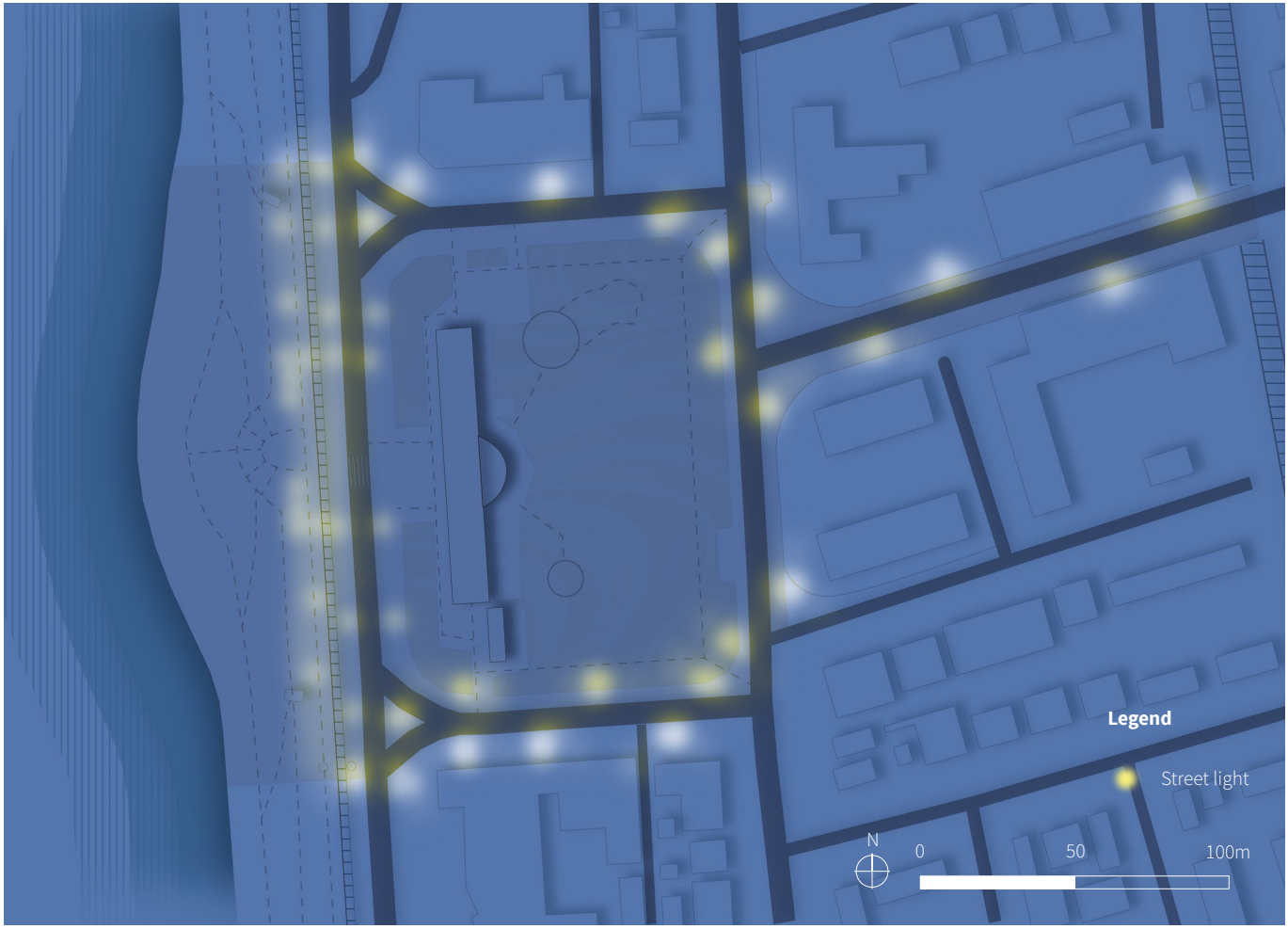
Light

Safety

The site currently has 49 street lights. There is however an unequal distribution of these lamps, with a cluster located along New promenade and the main road along with it, and no lamps within the public space of the Recreation Ground. On New Promenade, the various street lights are also reinforced by the installation of light strings above the road. Regarding their shapes, the street lights express a design intention of curved shapes (Cf. p.48.) on the Promenade. On the other hand, street lights on the East side showcase a very basic light installation. In terms of light design, there is therefore a clear discontinuity between the Promenade and the Solaris Recreation Ground and its surroundings.



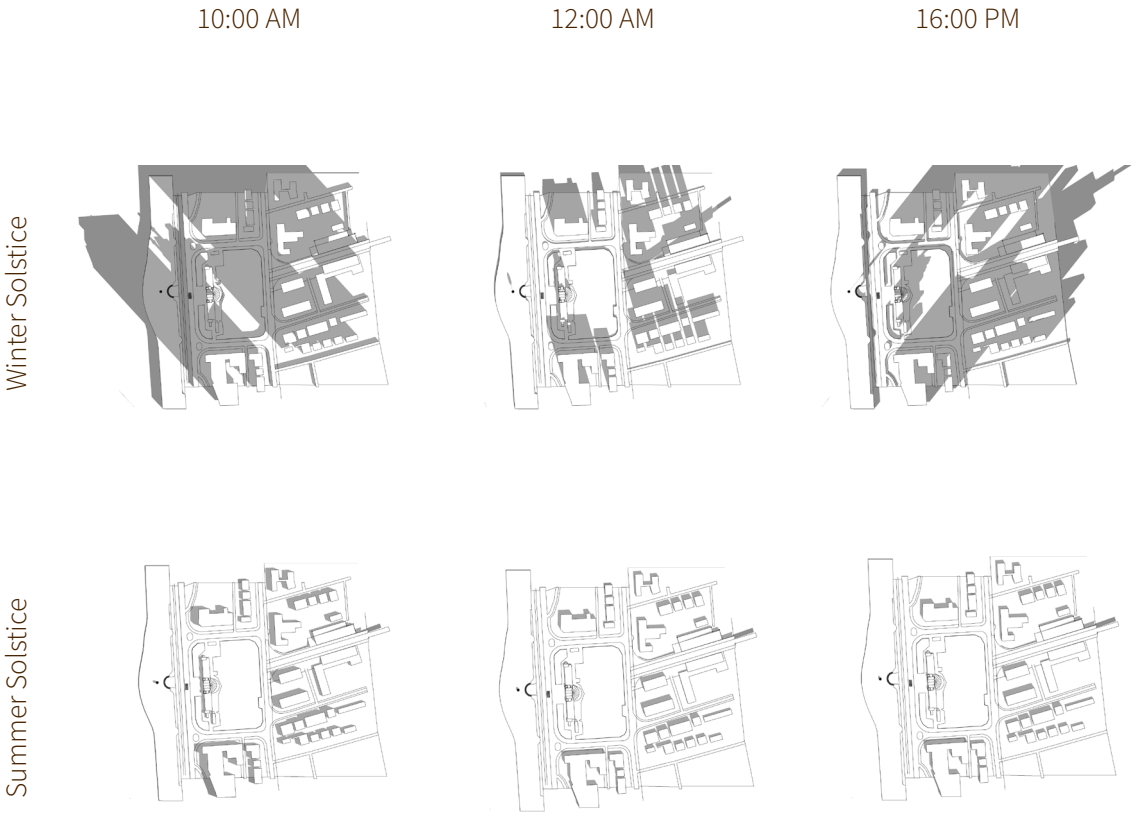
Ill.54: Pictures of the street light around the site



Ill.55: Map of the street light locations at night

Shadows

Pleasantness

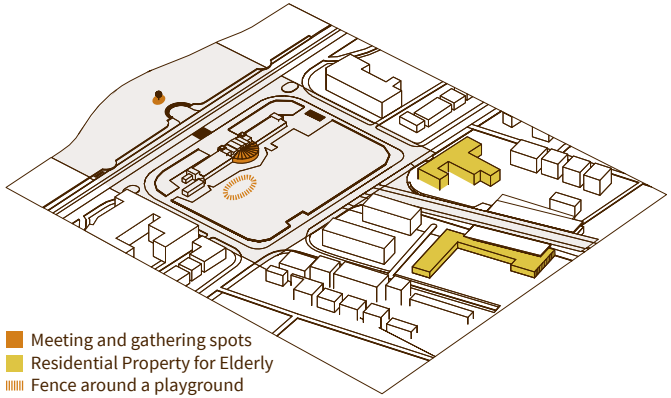


Ill.56: Top views of the shadows at summer and winter solstice

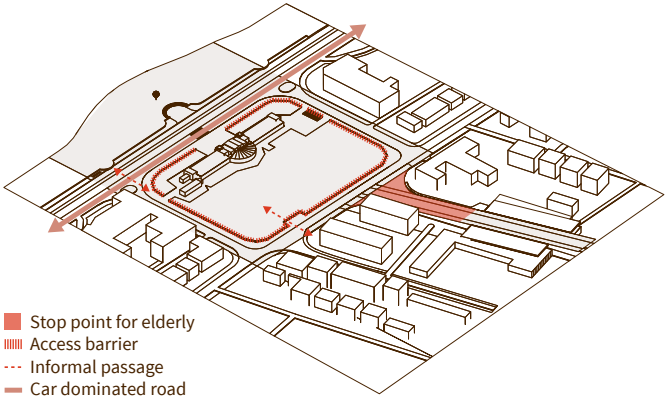
Shadow analysis was conducted on the summer and winter solstices. Diagrams illustrate that the southern part of the site gets relatively less sunlight than the northern part. Although landscape architecture generally considers that the southeast part is better for planting, because of the shadow from the existing building, it is not the case for the site. However, except for the south part of the Solaris Recreation Ground, the placement of shadows doesn't interfere with the site.

Sum-up Analysis Site Scale

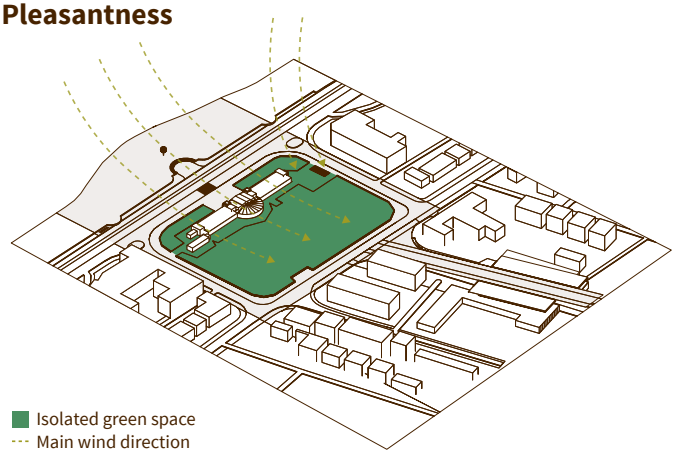
Interaction



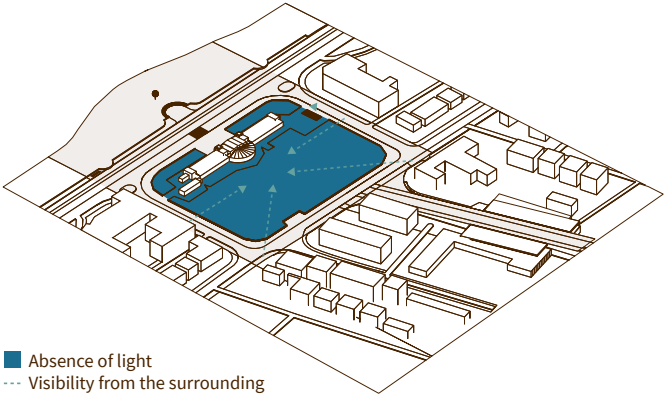
Accessibility



Pleasantness



Safety



Ill.57: Analysis summary for four themes

DESIGN

This place is the theatre of a ballet,
The green and voluminous arms of nature
As they rise from the ground, carry this spectacle
Where faces, generations and expectations are mixed,
it is incontestable

Yet all I see are people
Everywhere they attract me, they are my steeple

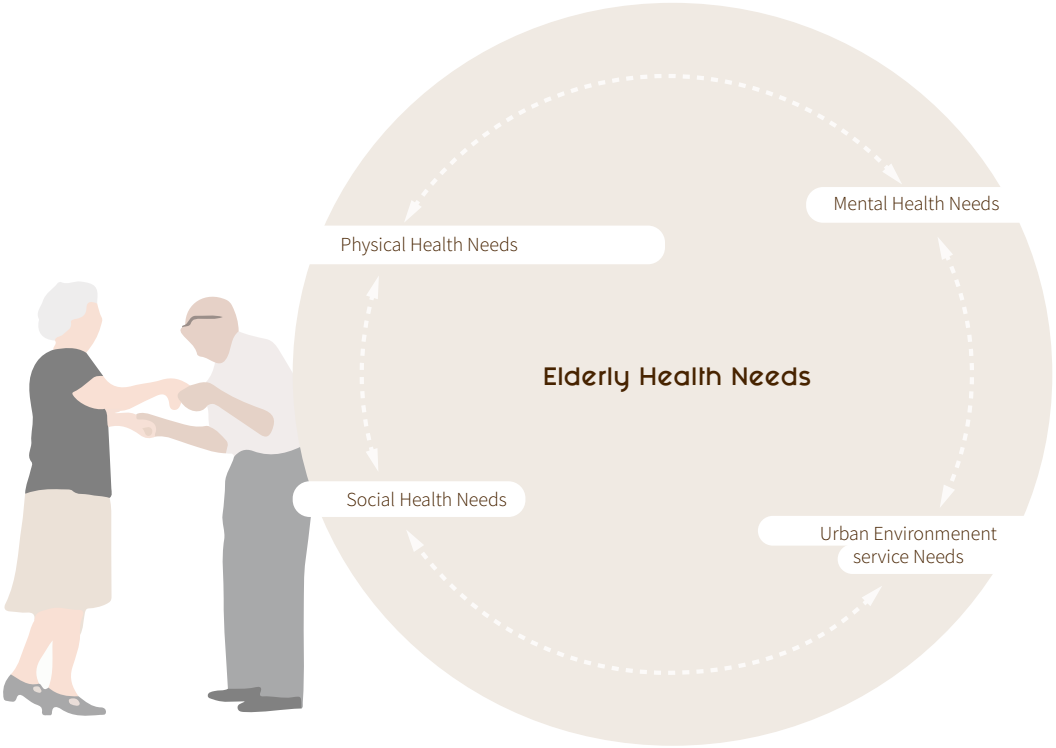
I look at them, sitting under the tree
They are beckoning me

Then the ballet begins
Now I understand what might have-been

'Man is [truely] man's greatest joy'

(Inspired by 'Man is Man's Greatest Joy' from Icelandic poet Havamal)

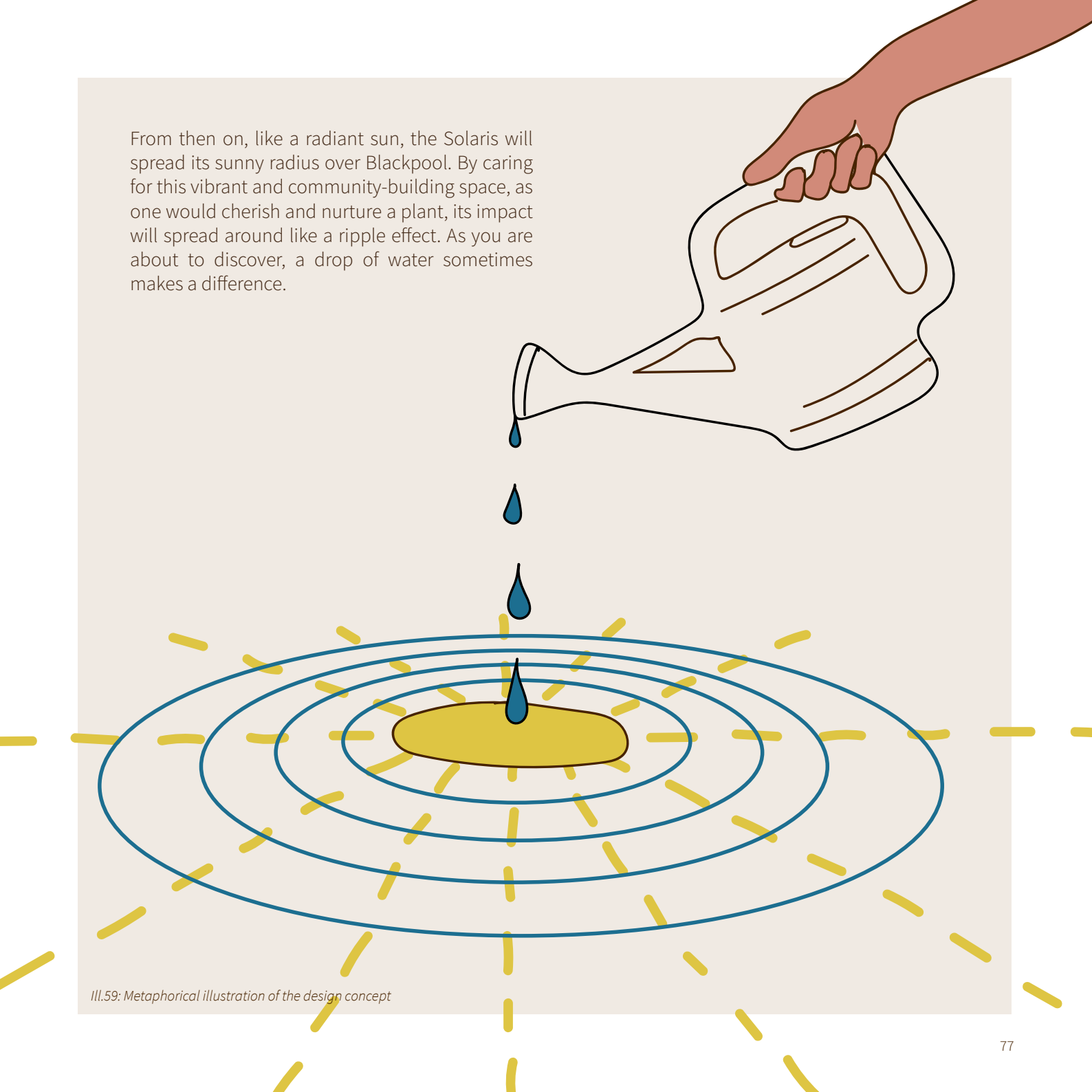
Introduction



Ill.58: Diagram for elderly needs in terms of health

How can the elderly access and move most freely in public spaces? What are the details of the softscape and Hardscape that can encourage their appropriation of a space? These were the questions that are resonated during the design process. To fully meet the needs of older people, public space must bring together responses to their needs in terms of physical health, mental health, social health and urban environment services (Hasemi et al., 2017), as presented earlier in the report. However, the elderly are not a single, nor similar category of user. Each elderly has different abilities, expectations and visions (Heatwole Shank & Cutchin, 2016). Sensing a Stroll takes the view that within this diversity, a tendency towards reduced physical capacity dominates. Studies also show that social interaction and work on the senses are major turns towards mental well-being for this category of users (Lee, 2021). These aspects will therefore constitute the core structure along with the following design chapter.

From then on, like a radiant sun, the Solaris will spread its sunny radius over Blackpool. By caring for this vibrant and community-building space, as one would cherish and nurture a plant, its impact will spread around like a ripple effect. As you are about to discover, a drop of water sometimes makes a difference.



Ill.59: Metaphorical illustration of the design concept

Design Objectives

The design objectives highlight the wish to create a better link between the elderly and their surroundings, including both other people and the environment. Based on findings from theory and analysis, the design objectives are structured around the four selected themes.
Overall, the design considerations highlight the wish to strengthen the link between the users and their local environment. Pleasantness has been put at the centre of preoccupation, so it will constitute a base for the design.

Overall
- Transform a space to place with a meaningful experiences

Interaction
- Encouraging intergenerational communication
- Arousing the feeling of belonging to a community

Accessibility
- Providing comfortable movement within, to, and from the site to the surroundings
- Allowing co-existence between hard and soft mobilities

Pleasantness
- Creating a comfortable environment to stay in and cross
- Establishing an environment that encourages mental health and well-being

Safety
- Providing a feeling of safety
- Allowing safe trips day and night

Design Actions

Update urban furniture

Enhance the public lightning

Break down barriers

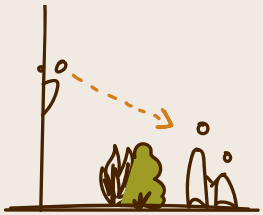
Build up places for communities to meet and gather

Integrate landscape to facilitate stroll for elderly

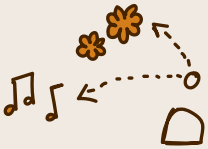
Provide places to stop in a short distance

Facilitate the stroll through green corridors

Highlight the presence of sidewalks and bike paths

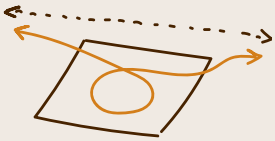


Enhance the feeling of safety



Implement design elements and planting to arouse senses

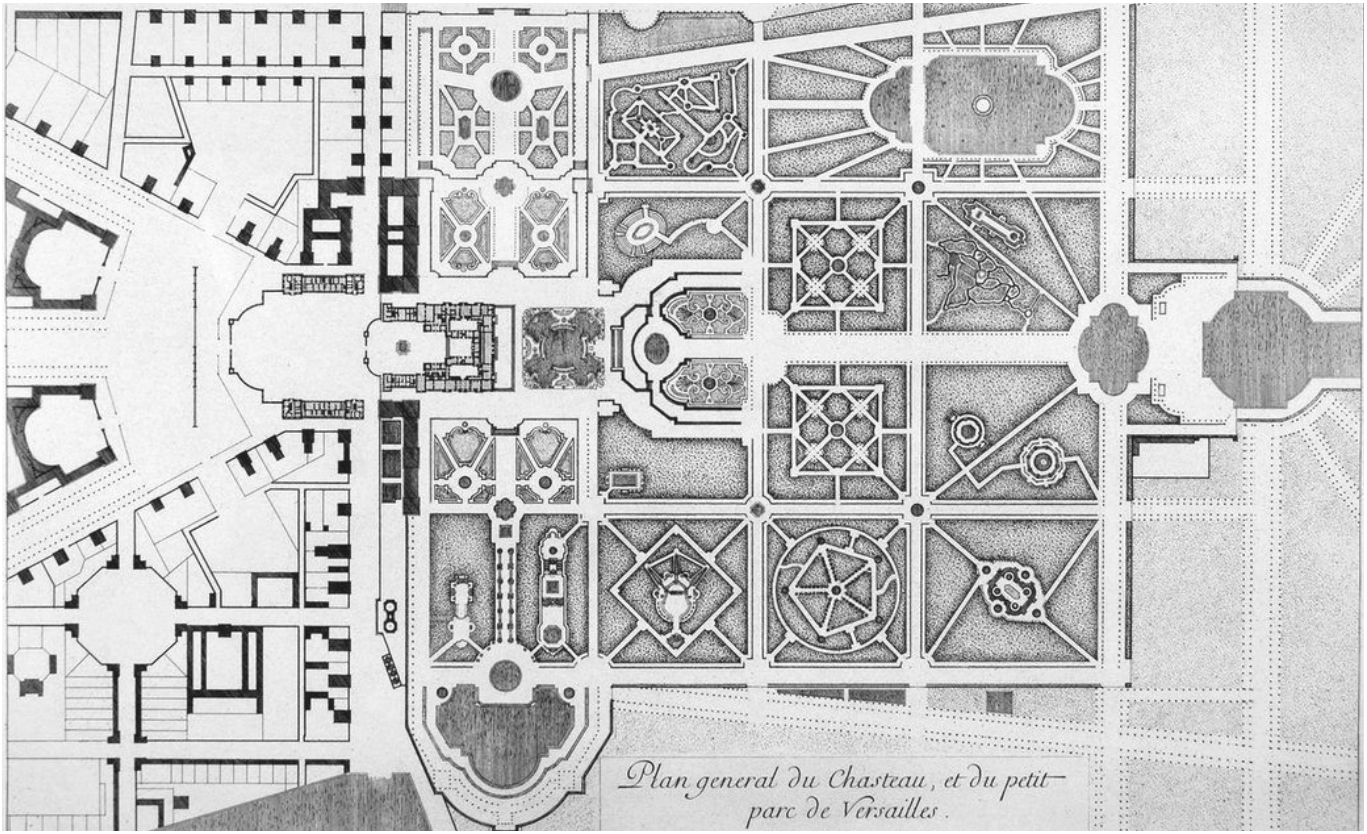
Improve visual interaction among people



Enhance the flow of ‘Go to’ and ‘Go through’

Ill.60: Hand drew actions for design

Historical Case Study



Ill.61: Plan of Versailles gardens from the 17th century

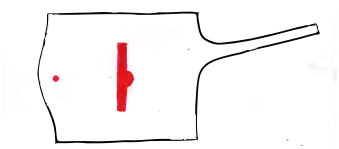
The project is loosely based on the 17th-century French trend of Jardins à la Française. This trend of landscape design is based on large gardens with rigorous layouts that order nature according to the principles of geometry and perspective. The core element of Jardins à la Française is a symmetrical pattern, which is imagined as a tool to correct nature to impose rigour. In the concept, gardens are designed like buildings, as an extension of the residence. The gardens are characterised by a succession of 'green rooms' through which the visitor passes according to a pre-established itinerary (Jardinage Le Monde, n.d). The symmetrical pattern of planting is therefore leading the flows and uses in between the 'green rooms' according to a very clear and limited direction.

From this very traditional way of looking at landscaping and the interaction people have with it, we can nevertheless extract certain aspects, in the perspective of a contemporary design. Several studies have demonstrated that people 'tend to prefer the more symmetrical version of a given stimulus, using both familiar objects and abstract patterns'(Rhodes et al., 1998 in Bertamini et al., 2019). It would seem then that, although rigid, the landscape concept of the French gardens can be partially reproduced in a modern design. As symmetry reassures users, it can be applied in addition to more loose elements. A natural landscape is for instance shaped by multiple physical processes. It is unlikely that 'hills, boulders, or trees will be located in a symmetrical pattern' (Bertamini et al., 2019). In addition to the symmetry, the implementation of these elements could thus create a structured place while giving freedom to nature and the affordance of its users. The following design is therefore intended to be a modern and adapted version of the landscape vision carried by Les Jardins à la Française.

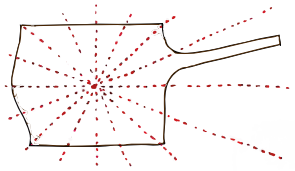
Ill.62: Diagram for symmetrical concept

Ill.63: Actual landscape of Versaille gardens

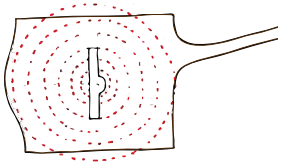
Design Process - Programation



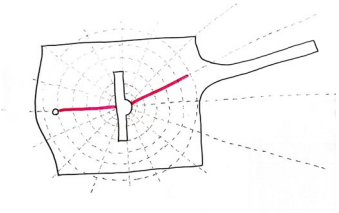
1. Placing the existing hardscape (Mirror Ball and Solaris Centre)



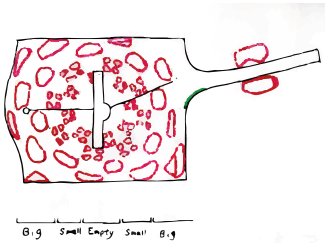
2. Tracing the radius, following the ones from the 'Solaris' Café



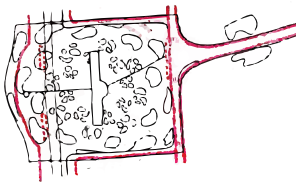
3. Tracing circles, starting from the vibrant heart of the site, and spreading away as a ripple effect



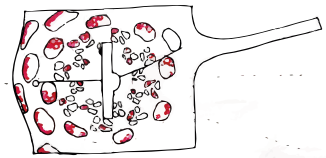
4. Creating straight connection accross the site



5. Placing the green pocket shapes following the strategy of Single big pockets and the outsides and small clusters around the Café



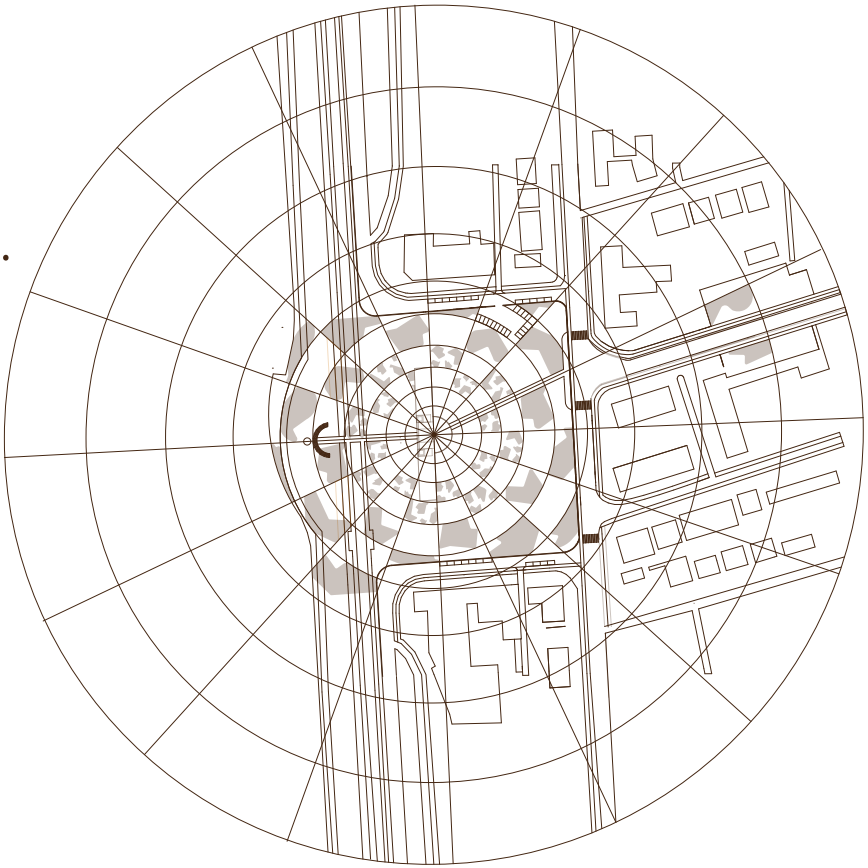
6. Implementing bicycle paths to strengthen a multimodal accessibility to the site and encourage the reduction of car use for the people in capacity to bike



7. Implementing greenery within the green pockets, to protect from the wide and provide a pleasant experience of the site

Ill.64: Hand-sketches of the design process

Final.



Ill.65: CAD view of the final step for masterplan

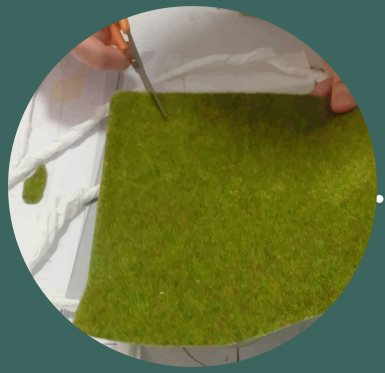
As design refers to both processes and products (Lawson, 2006), visualising the design process behind the product constitutes an important understanding of the site design as a whole. The eight steps of the design strategy of Sensing a Stroll are hereby represented through hand-sketching, showcasing the making process. Overlapped each other, the eight steps constitute the conceptual structure of the applied design process.

Ill.66: Picture of model-making

Design Process - The Making

The following illustrations have been taken during the making of the second test-out physical model. This model was not intended to be physically aesthetic, but a means for the group members to try, erase, and test again some of the key components of the design strategy. Just like a hand drawing, this 'drafty' test-out model was the means of exchanging ideas, both visually and rapidly, between two individuals.

1. Extending the 'Solaris' radius



2. Cuting various green pockets' shapes

3. Playing with the placement of shapes

Ill.67: Illustrated process for design

4. Shaping various types of trees

5. Playing with the placement of trees on the green shapes

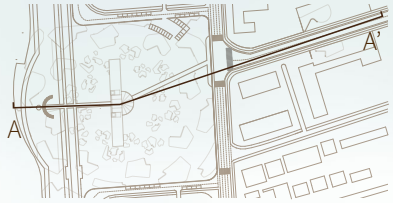
Masterplan

Ill.68: Top-view Masterplan

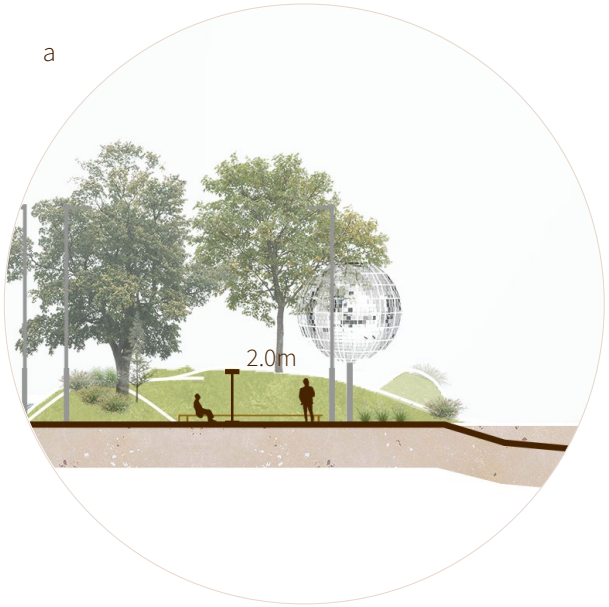
Hereby, the Masterplan gives an overview of the green pockets, without the conceptual lines presented earlier in the report (Cf. p.80). The green pockets are implemented following an altering pattern of large and individual on the extremities of the site, completed by small and clustered on the inside. In addition, the green pockets have been placed in staggered rows, in order not to be aligned with each other. In this way, the organic shape of the in-between pockets responds to climate and a diversity of places created (Gehl, 2019). While the appearance may seem disorganised, the green pockets and their surroundings are in reality a subtle way to represent the diverse needs of society, and invite them outdoors to meet, interact and experience the public space (Gehl, 2019). In terms of Hardscape, the Solaris Centre has been kept intact. It is firstly because of its facade, classified as an Art Deco building, and secondly because of its shape, which allows protection from the wind on the eastern part of the site. The Mirror Ball located on the Promenade has also been retained, as it represents an important landmark and meeting point identified by local users. Thanks to the chequered layout of the green pockets, this meeting place is now better protected from the wind coming from the sea. Metaphorically, the green pockets are seen here as the arms of nature, encompassing and embracing the uses taking place there.

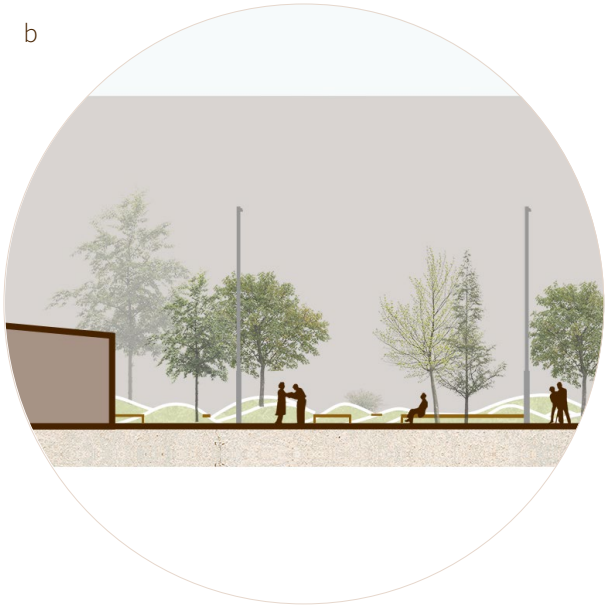
In terms of traffic and mobility, the main implementation is the reconnection of the Promenade to the Solaris Recreation Ground. New Promenade, formerly the main car street, has been cut and Clifton Drive has been increased in width to become the main road around the site. In addition, access ramps have been installed on both sides of the stairs leading to the Mirror Ball and the ‘Harrow Place’ tramway stop was moved further north to improve accessibility to the site. These elements aim to strengthen the connection of the Promenade and the Solaris Recreation Ground to a single entity, encourage slow mobility stroll on the site, and allow full accessibility for elderly users.

Section

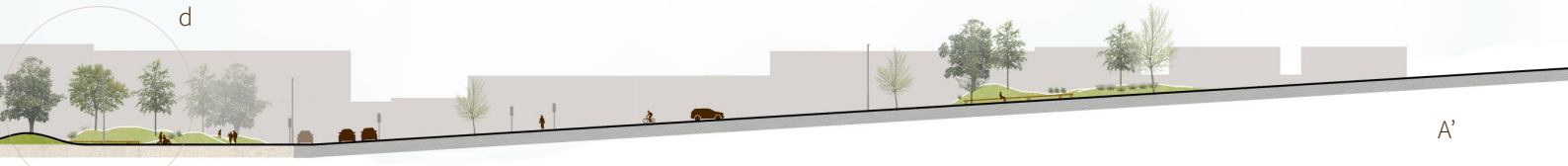


Ill.69: Section of the design proposal from the West to the East





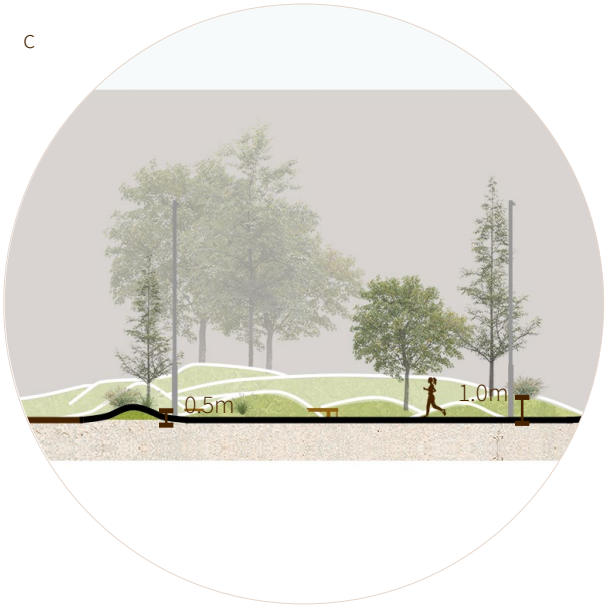
Ill.70: Close-up views of the section



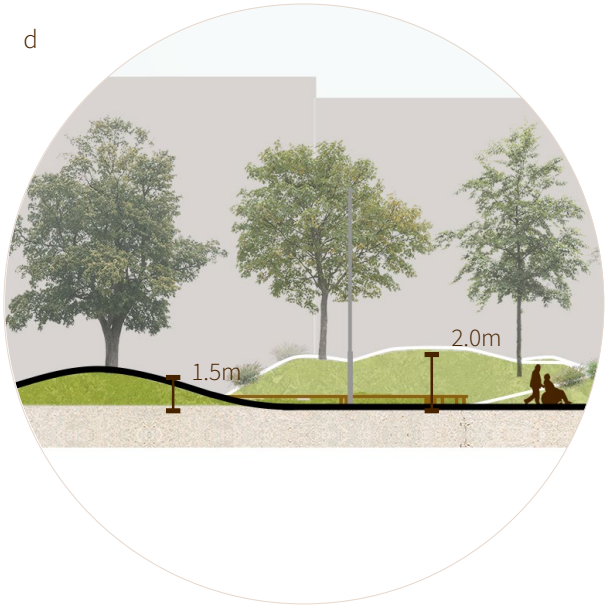
0 25 50m

Large

c



d



Axonometric View

Ill.71: Axonometric view of Masterplan

The Axonometric Master Plan illustrates the elevations within the green pockets and provides an overview of the volumes in the site.
While certain parts of the green pockets are elevated, the in-between spaces remain flat and large, encouraging various affordances in and around the pockets. Thanks to these large spaces, people with reduced-mobility can stroll all around the site and be included on an equal basis with the other users.

Ill. 72: Render of uses at the Promenade

Meeting Point at the Promenade

The Mirror Ball remains the meeting point landmark at the Promenade but is now better protected from the wind thanks to the planting and the elevations of the green pockets. On a sunny day, people from all over the town take the Tram and come to the site. They meet at the benches and when the weather gets a bit chiller, they move to the Solaris Café located in the front for a cup of tea and extend their social moment.

Case Studies

As a whole, the references show the image of elevated green pockets and curved urban furniture in the public space. In those places, people can give freedom to a large range of affordances, such as strolling, playing and relaxing, with the opportunity to be visually connected with people. The selected case studies fit into the theory of Sim and Gehl (2019), which indicates that in morphology, curved shapes help prevent people from wind and allow them to spend more time outdoors with diverse opportunities.

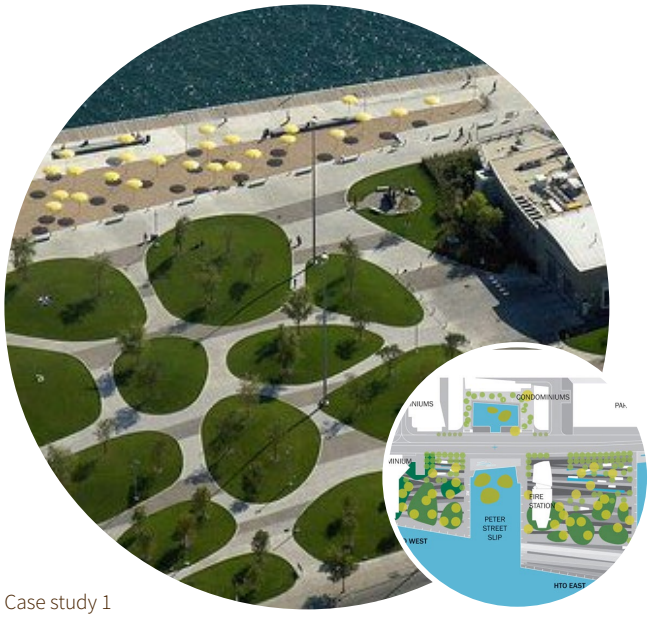
The first reference illustrates the feasibility of green pockets with large concrete spaces between them. The project, made by Claude Cormier Landscape Studio, showcases that despite large inner space, a strong perception of greenery can still be recognised.
The second reference highlights the sense of pleasantness and comfort that the softscape surrounding urban furniture can provide. The curved urban benches were also chosen by MASU Planning to strengthen the contact between users in the context of a sensory garden.
The third reference showcases a newly-made public park in the south of Aarhus, with similar elevations as the thesis project. Although the height of certain elevations is higher than 2m, it appears that the leaning land covered by planting hinders the passers-by from having the feeling of a wall placed in front of them.
The fourth reference illustrates the success of elevated green landscapes among users. Designed by Schonherr Arkitker for temporary use in Aarhus, these elevations have been the site of various affordances from a wide range of users, including parents of young children and the elderly. This case study suggests that the green elevations of the landscape can be an attractive and inter-generational space.

Ill.73: Case1 - HTO, by Claude Cormier landscape Architecture, Toronto (Canada)

Ill.74: Case2 - Magneten Sensory Garden, by MASU Planning, Copenhagen (Denmark)

Ill.75: Case3 - MarselisborgCentrets park, by Kristine Jensens Arkitker, Aarhus (Denmark)

Ill.76: Case4 - The City Park, by Schonherr Arkitker, Aarhus (Denmark)



Case study 1

Case study 2

Case study 3

Case study 4

Materials

Light-pink high-performance concrete (HPC)

Soil and grass

Beige high-performance concrete (HPC)

Weatherproof Wood

Green-painted high-performance concrete (HPC) mixed with asphalt

LED light lines

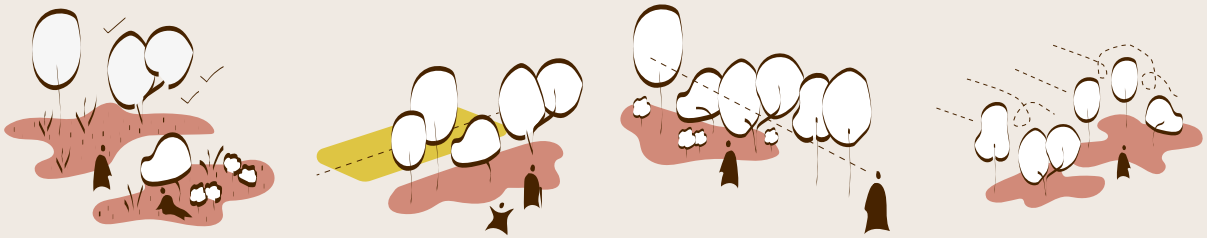
Ill.77: Pictures of chosen materials

Five types of materials are proposed for the renewal of the Solaris Recreation Ground and its Promenade. On the Promenade, the pink-ish smooth concrete on the ground is kept untouched. The material is of good quality and recognisable throughout the city, as it is the same along the entire length of the Promenade. On the ground of the Solaris Recreation Ground, a similar concrete is added, in a beige colour. This material is intended to be smooth and flat to allow easy stroll for the elderly, and its soft beige colour aims to enhance that of the green pockets. On top of the beige concrete on the site, The main path, indicating the Straight Stroll (Cf. p.114), is highlighted with the same pink concrete as the one in the Promenade, creating a better blend of the Promenade and the rest of the site in terms of materials. In terms of green pocket, the choice of material is a natural mix of soil and grass. However, some green pockets are discontinued by hardscape elements, for instance on the slope between the Promenade and the Solaris Recreation Ground, or at some parts of the tramway tracks. To keep the implementation strategy of the green pockets intact (Cf. p.80), the parts of the green pockets that cannot be grass are replaced by green paint on the concrete ground. Regarding the sittings, benches attached to green pockets are made of weatherproof wood to be climate and temperature resilient. This material provides a contrast with the surrounding concrete materials.

The light lines, indicating the radius segmentation, are made of plastic and stainless steel, indicating subtly the way towards the Solaris Centre.

Ill.78: Close-up top view on chosen materials

SOFTSCAPE



Sensory Garden

Separation form the road

Visual Attraction

Wind Protection

Ill.79: Diagrams for softscape directions

The first section of the design explanation is presented in terms of Softscape. The term of ‘soft’ refers to ‘the living part of your landscape, the vegetation, which features may be permanent, such as shrubs and evergreens, or temporary like perennials’ (Curtislandscaping, 2019). In Sensing a Stroll, the Softscape elements were designed with a multi-functional vision, not just for aesthetic purposes. The combination of planting and elevation provides wind protection, visual attraction to the site, enhances the five senses, and protects users from car traffic. Combined, these softscape guidelines aim to support the four themes extracted from the theoretical research.

The Green Pockets

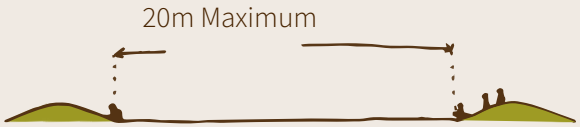
Overview of the green pockets

The green pockets have been imagined through three main dimensions. The first dimension concerns wind protection, allowed by the elevation and wind resilient planting. The second dimension focuses on the interaction between green pockets and users by providing trees and flowers that stimulate their senses and increase the feeling of safety (Loder, 2020). The third dimension relies on social interaction. With their physical proximity to each other, the green pockets and their benches provide the opportunity for interaction between people. By sitting down, users are brought into visual contact with each other. Even without verbal communication, bare visual contact helps to feel socialising (Paay & Kjeldskov, 2007), tackling thus the feeling of loneliness that some elderly users may suffer from (Welbi, 2017).

Ill.80: Hand-sketch of section and top view for green pockets

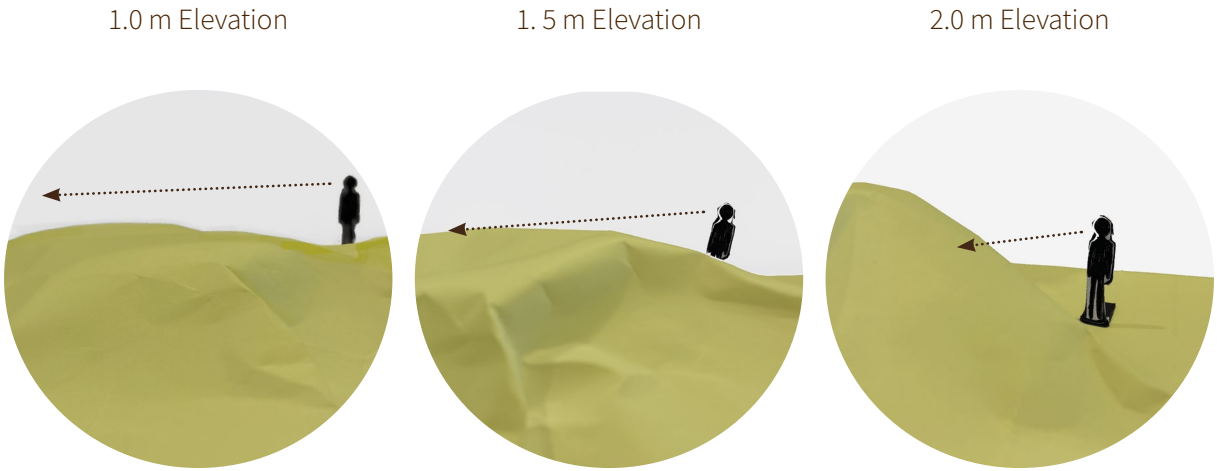
Distance between Green Pockets

Across the site, with the slope as the only exception, the distance between green pockets is less than 20.0m to create social interaction. Gehl states that if the space between people is less than 25 metres, they can recognise the facial expressions of the others, which invites conversation. Paay (2007) theorised 'socialising by proximity', considering that even if people are not interacting directly if they stay amongst each other, they can feel socialising by observing others and being observed by others. Therefore, the location of green pockets can be a means to encourage social interaction between users.



Ill.81: Hand-sketch of distance between green pockets

Affordance in the Elevations



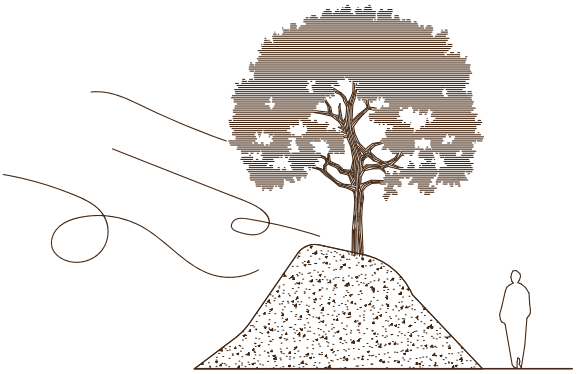
Ill.82: Pictures of model for visibility examination

Ill.83: Hand-sketch of various affordances in green pockets

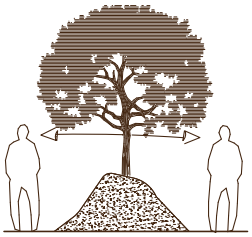
As mentioned earlier, there is a variety in the elevation of green pockets from zero to two-metre, providing an efficient protection from the wind. The elevations aim to reinforce visual attraction, as it motivates the residents to visit and spend more time in the public space and increase informal meetings and residents' social ties (Hani, 2014). The difference in the height and the volumes of green pockets also provide plenty of options of affordance to interact with the landscape. Children might climb on the top of the highest green pocket, while seniors can exercise by walking around the green pockets planting.

Combined Strategy for Elevations and Planting

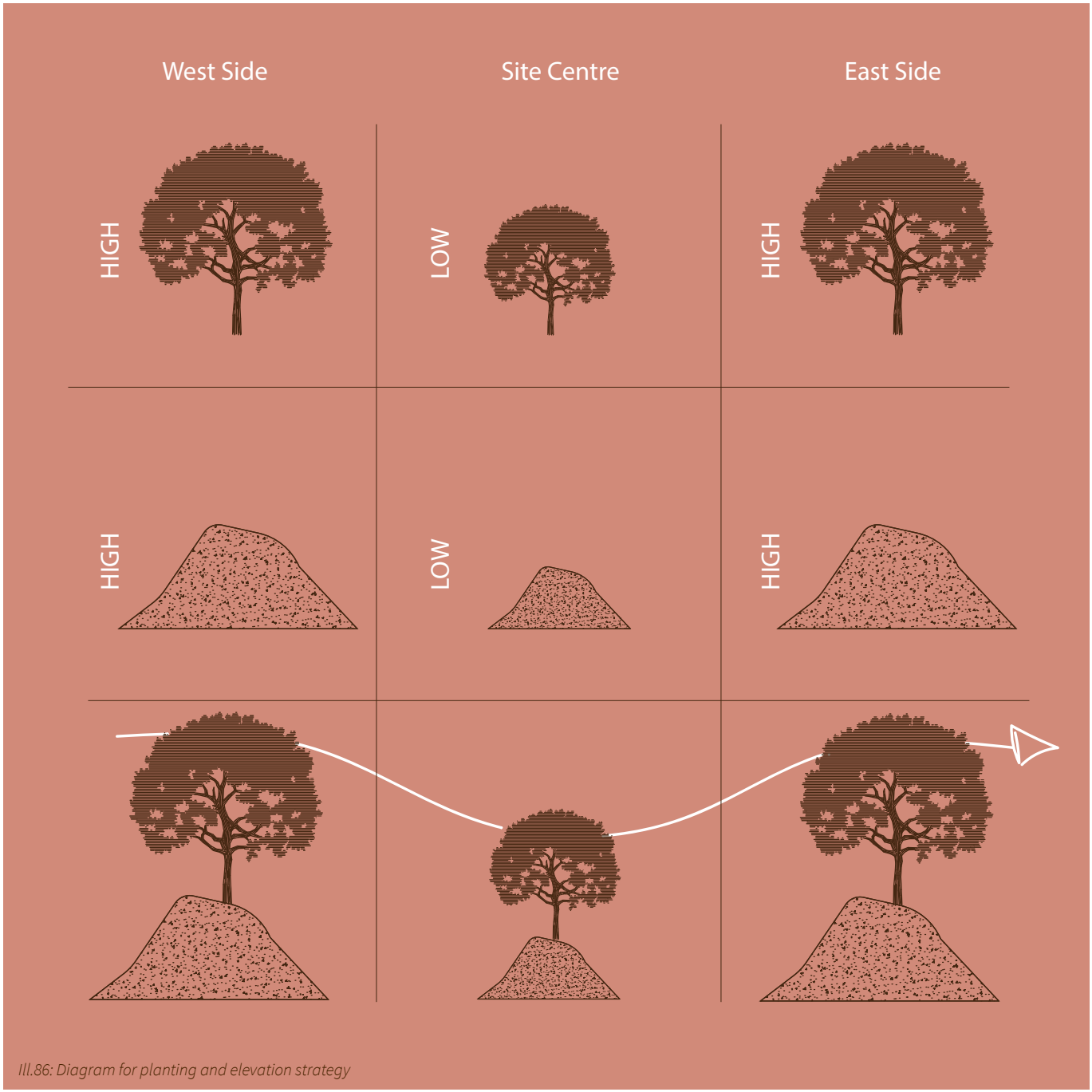
The height of the elevations as well as that of the trees follows a precise strategy. On the outskirts of the site, both Western and Eastern sides, the elevations and the chosen planting are higher than the inner part of the site. This strategy results in a protected meeting spot and walking path on the side of the green pockets and the outskirts. Therefore, it transforms the surrounding spaces from hard edges to soft edges. On the other hand, the small elevations and low planting of the inner part of the site allow visual connection between individuals. Although the elevations and the planting are lower in this centre area, the space is nonetheless structured and framed, the aim not being to leave a large space that could cause a feeling of discomfort among users.



Ill.84: Benefit of high elevation and planting for wind protection

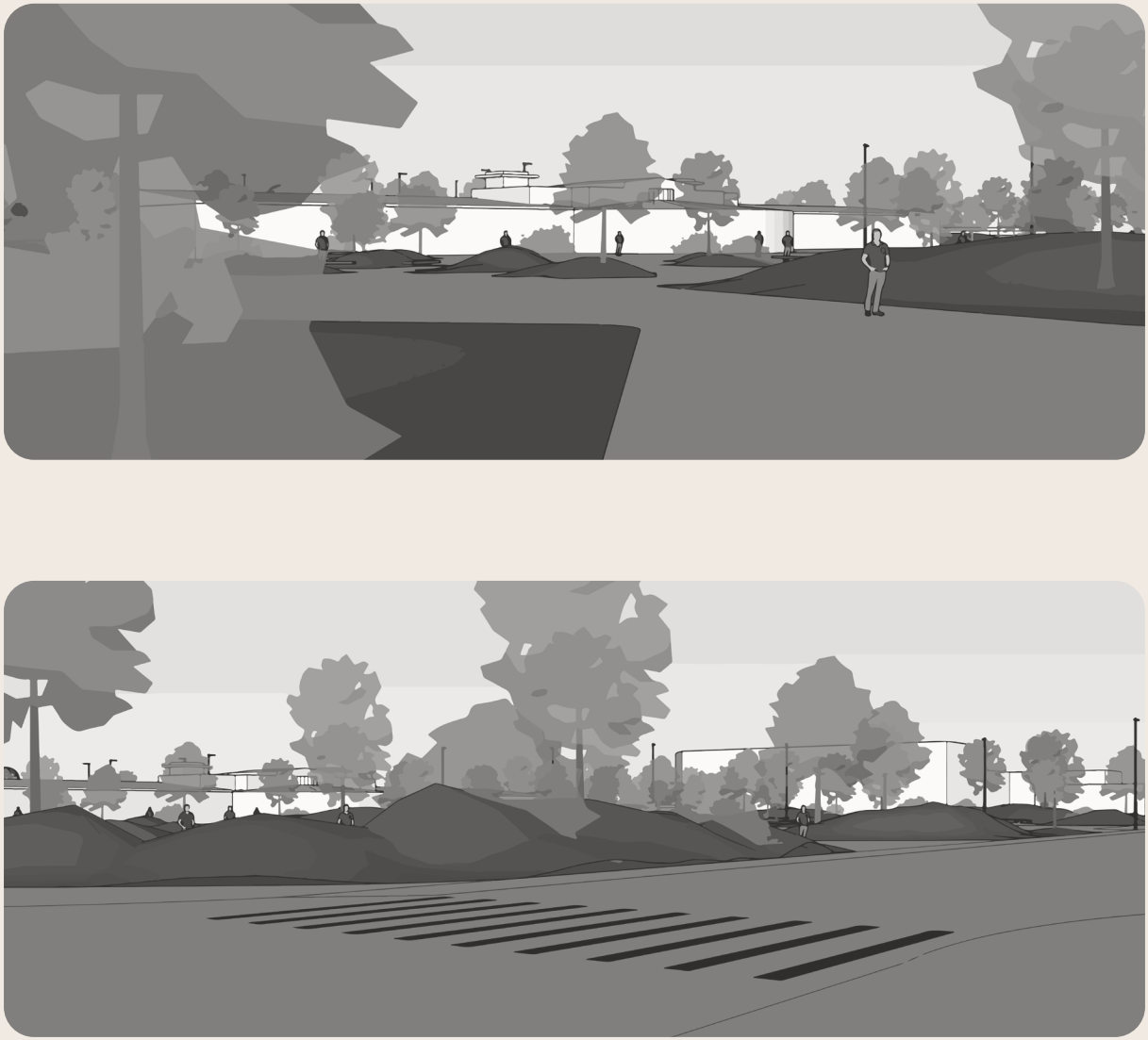


Ill.85: Benefit of low elevation and planting for visual connection



Ill.86: Diagram for planting and elevation strategy

Visibility



Ill.87: Perception on elevation from pedestrian view

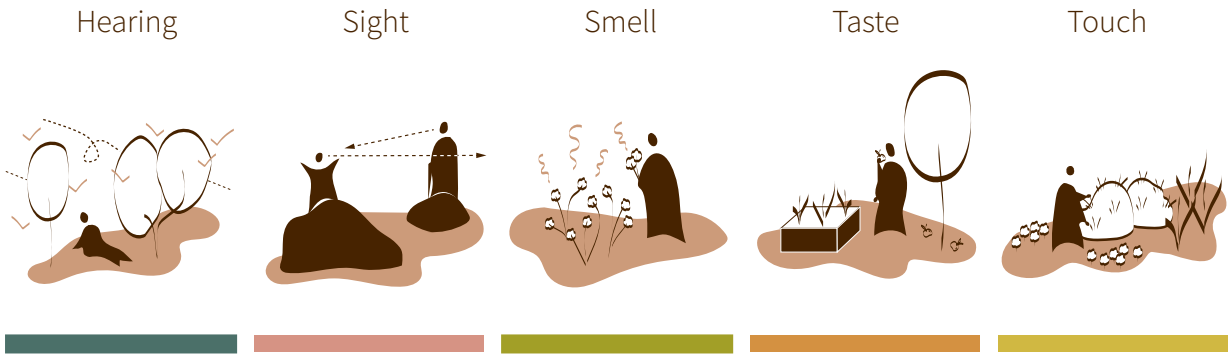
Ill.88: Implementation of green pockets around landmark

Although elevated green pockets are implemented regularly and symmetrically across the site, their height varies from one pocket to another but also within a single pocket. This variation in height allows constant evolution in the landscape, not to block the eyesight towards the existing building and adjacent green pockets. People can keep visual contact with a landmark and stroll around the site without losing their way. Far from being lost in a maze, the user is reassured by its human-sized heights and the different visual experiences it offers. For a design to be called rich and intense to experience, the landscape should indeed offer variation and volumes at eye level (Gehl, 2010).

A Sensory Experience

The whole site is a large-scale sensory garden, referring to the sensory landscapes that are 'designed to accommodate the visually impaired, low mobility groups, aged or weak-minded' (Phillips and Butler, 2011 in Hussein, 2016).
Following a pattern based on climate and implementation of the green pockets, each of the pockets has been assigned a sense to highlight. The outskirts of the site will thus play on the sense of sight, with higher elevations encouraging the idea of seeing and being seen. Where the wind blows from the northwest, the pockets are dedicated to the sense of hearing. The selected planting can thus produce a particular sound when caressed by the wind breezes. The squash plants present can also be used as musical instruments by the children. This is therefore a subtle sensory garden, enhancing the senses without being all explicit.

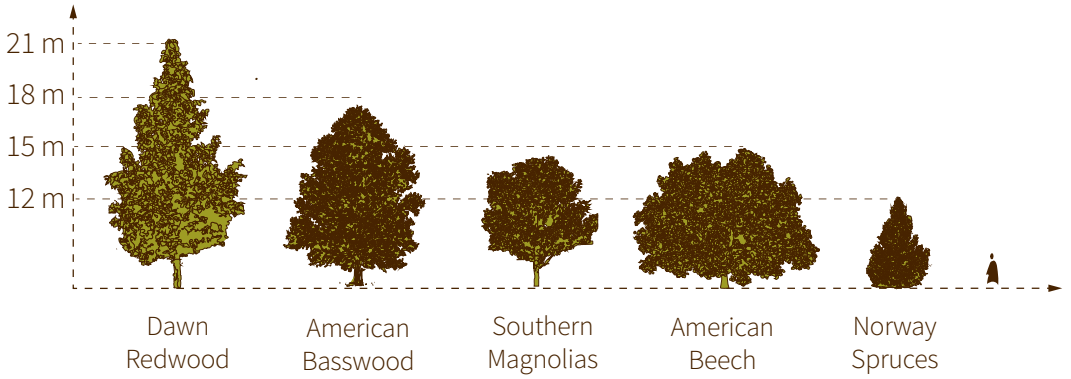
Ill.89: Axonometric view for sensory garden proposal



Ill.90: Diagrams for the five senses

Planting Proposal

Corresponding to the plan for the sensory garden, specific trees, bushes and flowers are selected for each sense. The top view illustration showcases a methodology of planting based on each of the five senses. The scent of the aromatic perennials will be felt from afar and users will also be able to pick fruit and flowers from the taste gardens. At the touch, the softness of the bunny tail will contrast with the sharpness of the Norway spruce.
The bloom period was also taken into consideration so that people can enjoy vegetation throughout the year. All the plants and trees chosen are resistant to wind and humid climates.



Ill.91: Section of selected trees and their height

	Summer	Autumn	Winter	Spring
American Beech				
Basswood				
Dawn Redwood				
Norway Spruce				
Basil				
Mint				
Geranium				
Alpine Strawberries				

	Summer	Autumn	Winter	Spring
Signet Marigold				
Chamomille				
Bamboo				
Lamb's Ears				
Dill				
Squash				
Bunny Tail				

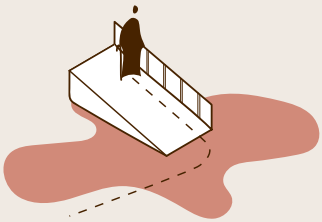
Blooming Constant leaves

Ill.92: Table for blooming across seasons

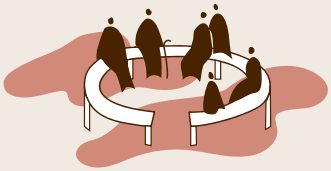
Ill.93: Top view for planting proposal for each sense

HARDSCAPE

Safe travel at Night



Safe and easy Access



Community Gathering

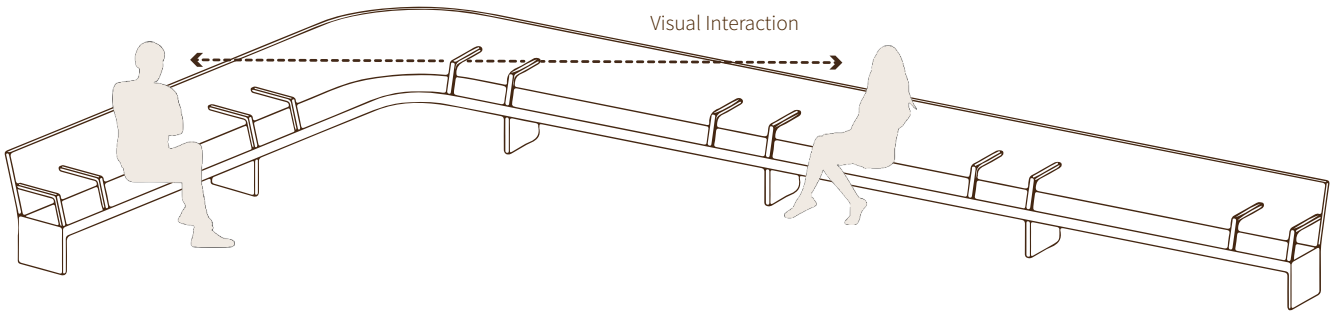
Ill.94: Diarams for hardscape directions

The second part of the design explanation is organised around the elements of Hardscape. Unlike Softscape, the term of Hardscape refers to all of the non-living elements within the urban landscape. In the context of Sensing a Stroll, the elements of Hardscape are designed to be elderly-friendly. This focus encompassed a better light implementation, an improved accessibility for soft mobility, and a multiplication of sitting space for people to meet and communicate. By orienting the Hardscape in this way, all users are offered a more inclusive and accessible space, regardless of physical ability.

The Benches

In establishing an inclusive design for elderly users, technical details must be taken into account. The designed benches are minimalist to enhance the surrounding landscape while remaining age-friendly above all. The benches' width of 450mm and the 550mm back offer the support and comfort needed for elderly users. Furthermore, the proposed design aims to create or strengthen the social link and interaction that is essential for the mental health of older people, as these users are more likely to suffer from loneliness (Welbi, 2017). The bench's shape personifies thus the theory that every detail in the physical composition of the built environment has the potential to deliver a connection to others (Gehl, 2019). Indeed, as simple as the curved shape of the benches are, it guarantees a constant visual connection to others when seated. A visual connection is considered here to encourage social interaction between users, as seeing and watching people is the precondition for social contact (Gehl, 2010). If social interaction doesn't occur, the phenomenon of 'socialising by proximity' still reinforces the bond between individuals. Even though people don't interact directly, if they sit among each other, it creates a feeling of socialisation by observing others and being observed by others (Paay & Kjeldskov, 2008)

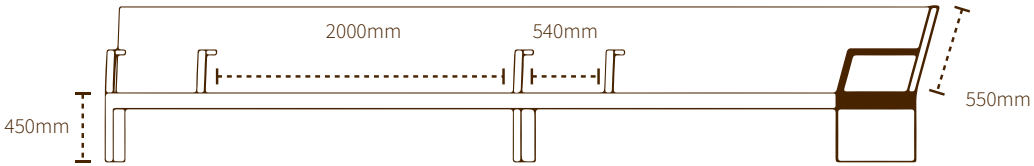
Axonometric View



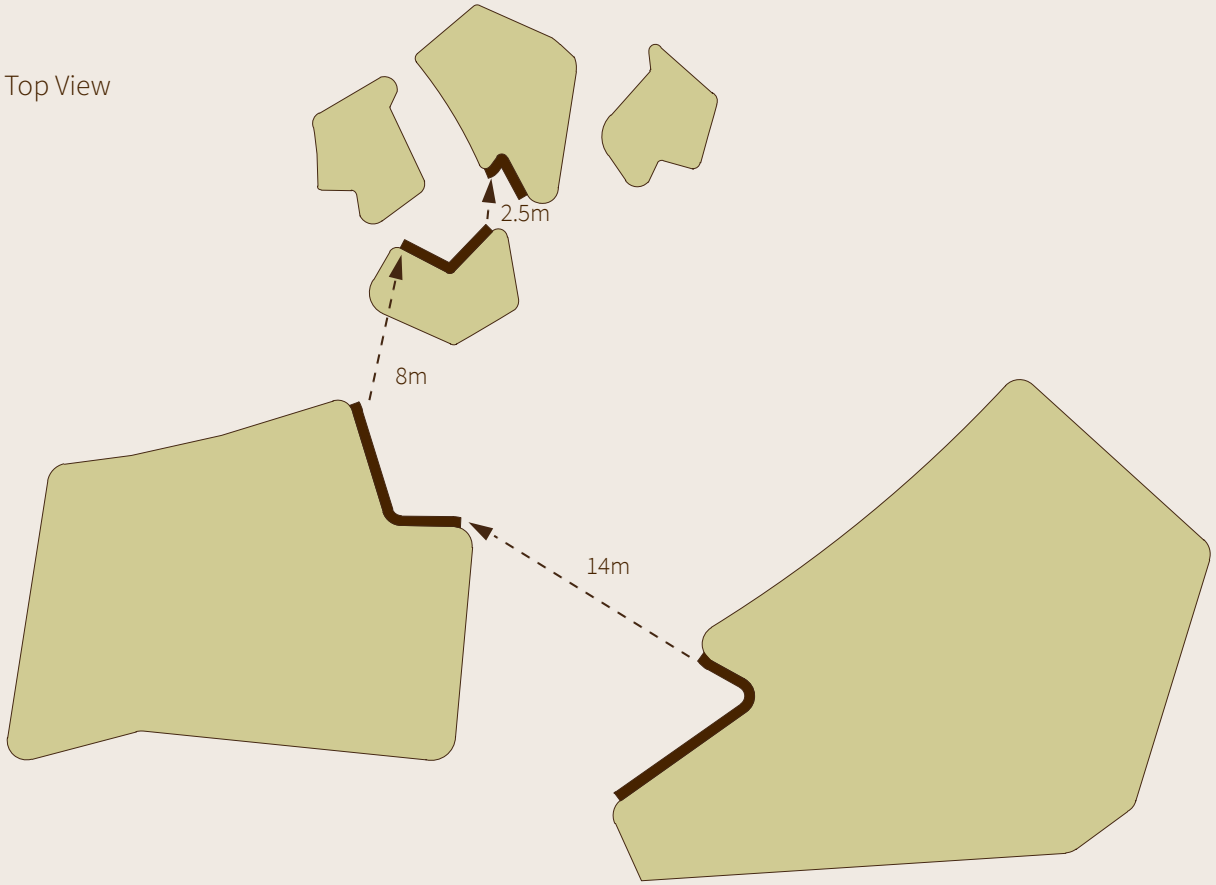
Material

Weatherproof Wood

Section View



Ill.95: Technical views of the benches

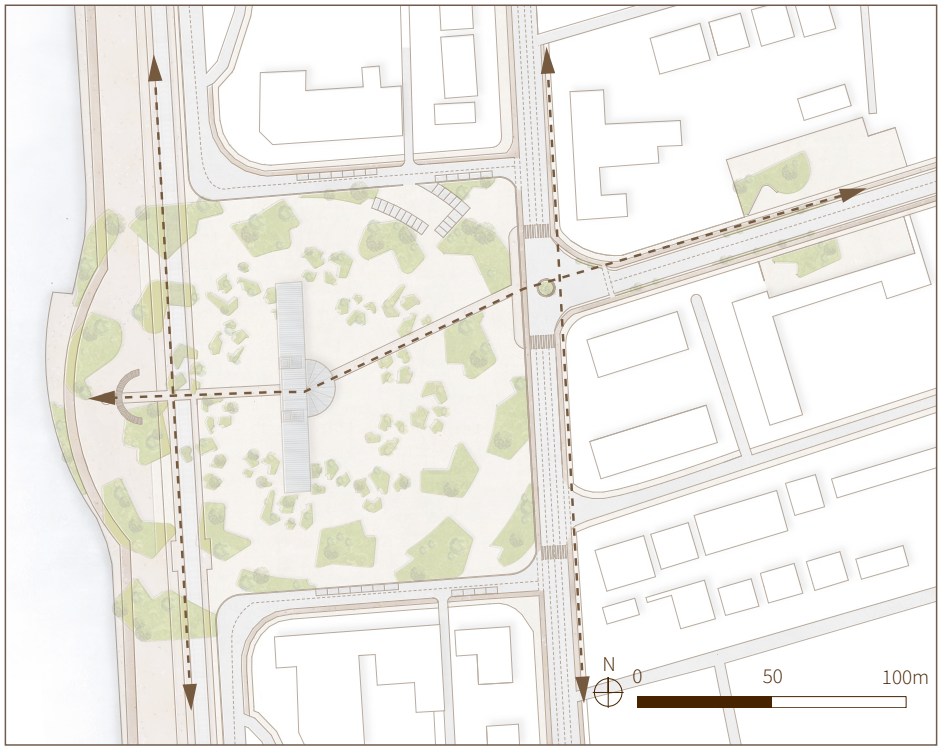


Ill.96: Diagram of distance between benches

Due to decreased mobility with age, certain elderly, especially the oldest, may need breaks often throughout their stroll. The strategy for the placement of the benches, which are located on most of the green pockets, provides frequent stops between each bench. In addition, the strategy provides for the bench to face either another bench, the South, or one of the landmarks of the site, such as the sea, the Mirror Ball, or the Solaris Café for example.

A Mobility Experience

1. Straight Flows



Ill.97: Diagram for straight flows

How the landscape elements have been chosen and implemented allows two main types of mobility experiences for pedestrian users.

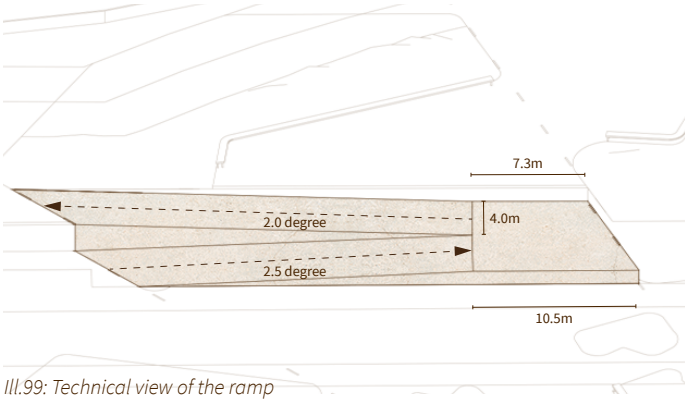
In the perspective of an elderly-friendly design, the Straight flows allow a shorter and clearer crossing of the site from North to South and from East to West as what Gehl (2010) labels 'a quick goal-oriented walk from A to B'. The Straight flows provide two four-axes intersections, which have the benefit of giving more connection to a place (Ball, 2012).

Secondly, and overlapping the Straight Flows, the implementation of green pockets allows the possibility of wandering within the site. The strolling experience provides further possibilities to interact with the site and other users, by discovering the various places in between green pockets. A comfortable distance has been left between each green pocket, and the flat and smooth surface of the ground allows all types of users

2. Stroll Flows

Ill.98: Diagram for stroll flows

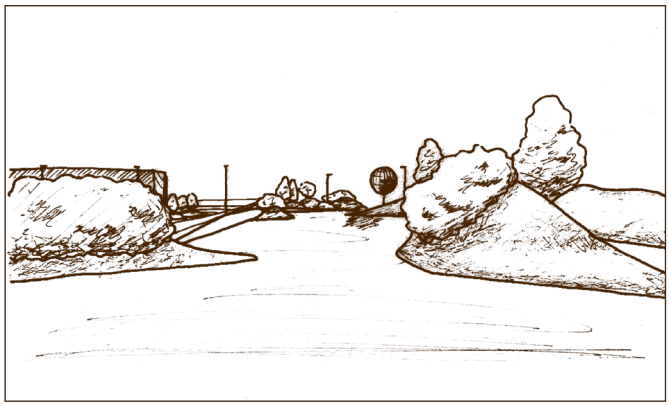
to experience the stroll. In the spirit of inclusiveness in terms of mobility, two access ramps have been implemented on the Promenade. With a slope of less than 2.0%, and a flat platform of more than 7.0m, the connection between the Promenade and the café is reinforced for the elderly with limited mobility, disabled people and parents with baby strollers.



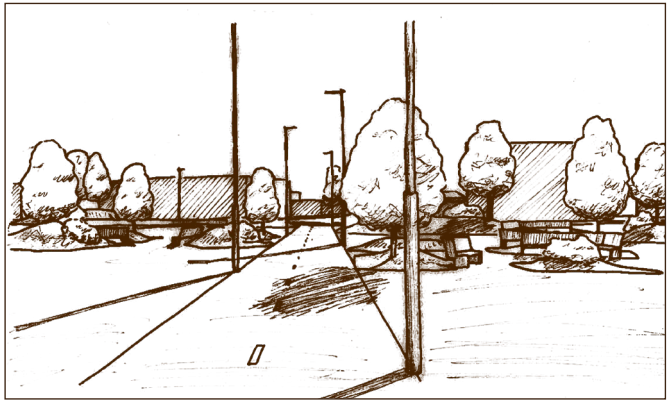
Ill.99: Technical view of the ramp

Serial Vision

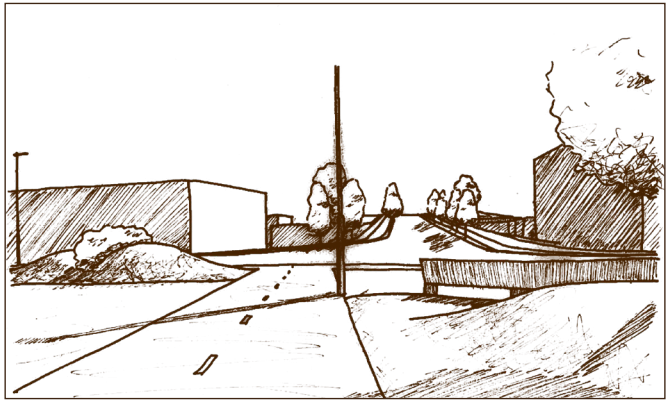
Serial visions demonstrate users' experiences while they move within the site.
From the perspective of Strollogy (Burckhardt, L. et al, 2015), it can be said that the surrounding landscape communicates with people while they walk on the flat surface (from vision 3 to 5). The visuals emphasise that users can 'feel' the elevation when moving between green pockets, providing, therefore 'age-friendly elevations' without having to go up to them. For users on the Promenade (vision 1) and for those who can reach the top of the green pocket (vision 2), those places provide a clear view of the site. On the slope, where many elderly have difficulty walking uphill, greenery emphasises the resting space and its benches with a vantage point on the Solaris and the sea.



1

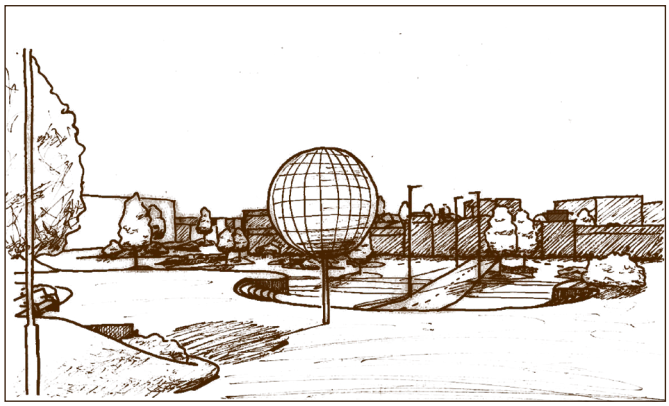


4

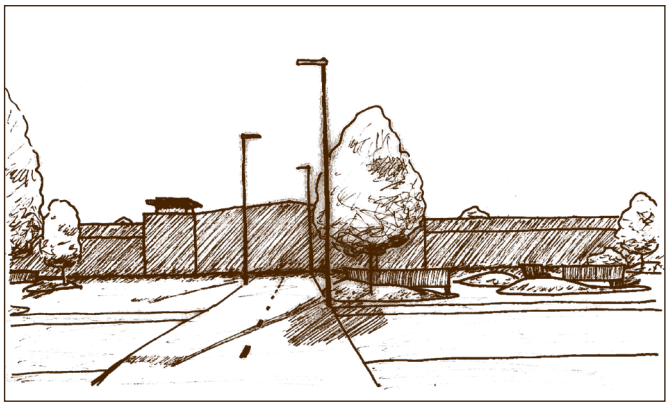


5

Ill.100: Hand-sketches of selected points across the stroll (serial vision)



2



3

6

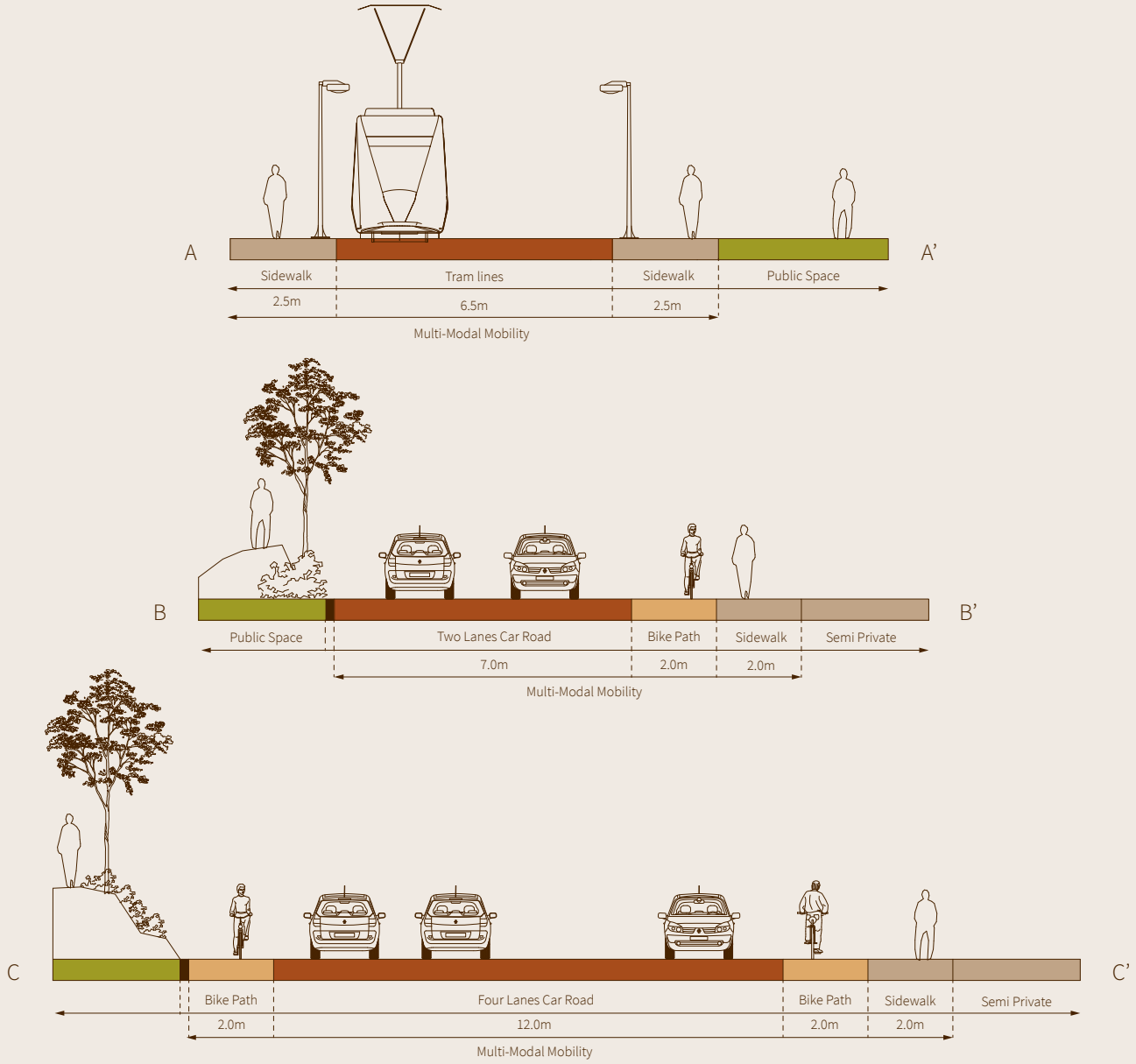
Ill.101: Location of the selected points

Ill.102: Render of the flows at the Promenade

Multiple Flows at the Promenade

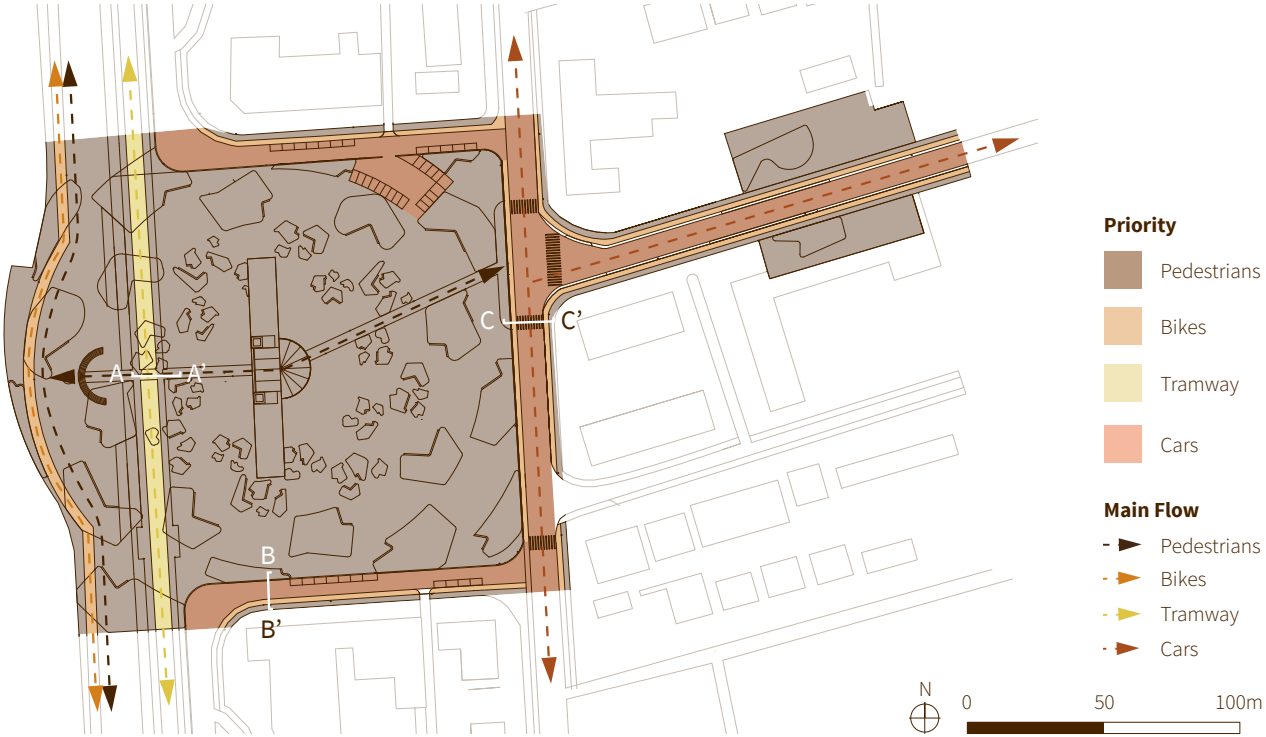
the Promenade is now a ballet of slow mobility. With the implementation of two ramps, located on both sides of the staircases leading to the Mirror Ball, this piece of the Promenade is fully accessible for the elderly with weaker mobility, and people on wheel-chair. It is now a soothing spectacle on the Promenade, where pedestrians and bicycles can visually notice each other's presence without disturbance.

Traffic Proposal



Ill.103: Traffic proposal in sections

The main change in terms of traffic is the reconnection of the Promenade and the Recreation Ground, by the removal of the street formerly located along the Promenade. Instead, the main car traffic has been moved onto Clifton Drive, increasing its width from 5.0m to 12.0m. In terms of parking, 40 spots are now scattered across the Recreation Ground and the two secondary streets, located north and south from it. The car access is made easy, with parking close to the site, but is not made dominant. With the 'Harrow Place' tram stop moved closer to the Solaris, the proposal tends to encourage travel by tram rather than car for people with walking difficulties. In addition, the whole Recreation Ground is kept for pedestrian use, to ensure that older people can move around safely. The access from Harrow side has been made more comfortable for pedestrians and cyclists. A buffer zone indeed separates the road from the cycle path (2.0m), on both sides of the road. Each of the cycle paths is flanked by a 2.0m sidewalk. The new traffic proposal provides more room for soft mobility to access the site and stroll within it. The proposal also bears in mind that access by car should be located as close as possible for some of the elderly, but encourages tram access to become dominant in the near future.



Ill.104: Map of traffic proposal

A Vantage Point on the Solaris

While the crossing of this elevated road was often apprehended by the elderly in the past, it is now an axis appreciated by all. The placement of the two green pockets and their benches allows a break on the road for the elderly, and an exceptional view of the surroundings. Pedestrians and bicycles are also given a dedicated lane on both sides of the road, enhancing access to and from the site.

Ill.105: Render of the view from Harrow Side

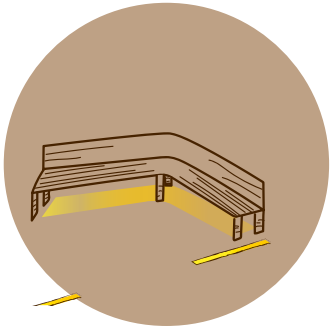
Light Implementation

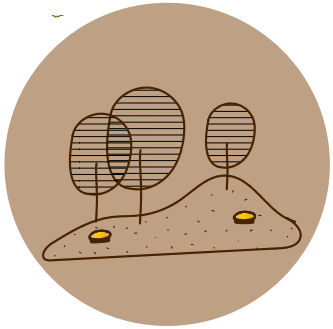
The light implementation in the new site provides a more comfortable and secure stroll at night for all categories of users. Few implementations have been added to make the space more secure and pleasant. Solaris Recreation Ground has no street lights. Therefore, a few of them will be added along the Straight path crossing the site and on the Promenade. These street lights are implemented strategically on the crossing points between radius and ripple effect circles, following a clear and defined pattern. Their implementation will allow subtle wayfinding across the site and make the crossing safer and inviting from the road on the East towards the Promenade.

As another light proposal, the implementation of benches has been enhanced by the presence of LED light on the ground underneath. It tends to structure the site at night and cognitively indicates the meeting point to interact with other users.

As a complement, the lines from the radius strategy, starting from the Solaris Café and spreading around the site, are highlighted by LED Lines on the ground. Each line is 1.0m long and 0.1m large and is separated from 3.0m to the next one, all along the radius line.

Finally, some round light structures are implemented in every green pocket. It aims to highlight the green pocket as one of the central elements of the site, even at night, and to indicate the presence of elevations in the dark. The number of round light structures varies according to the size of the green pocket.

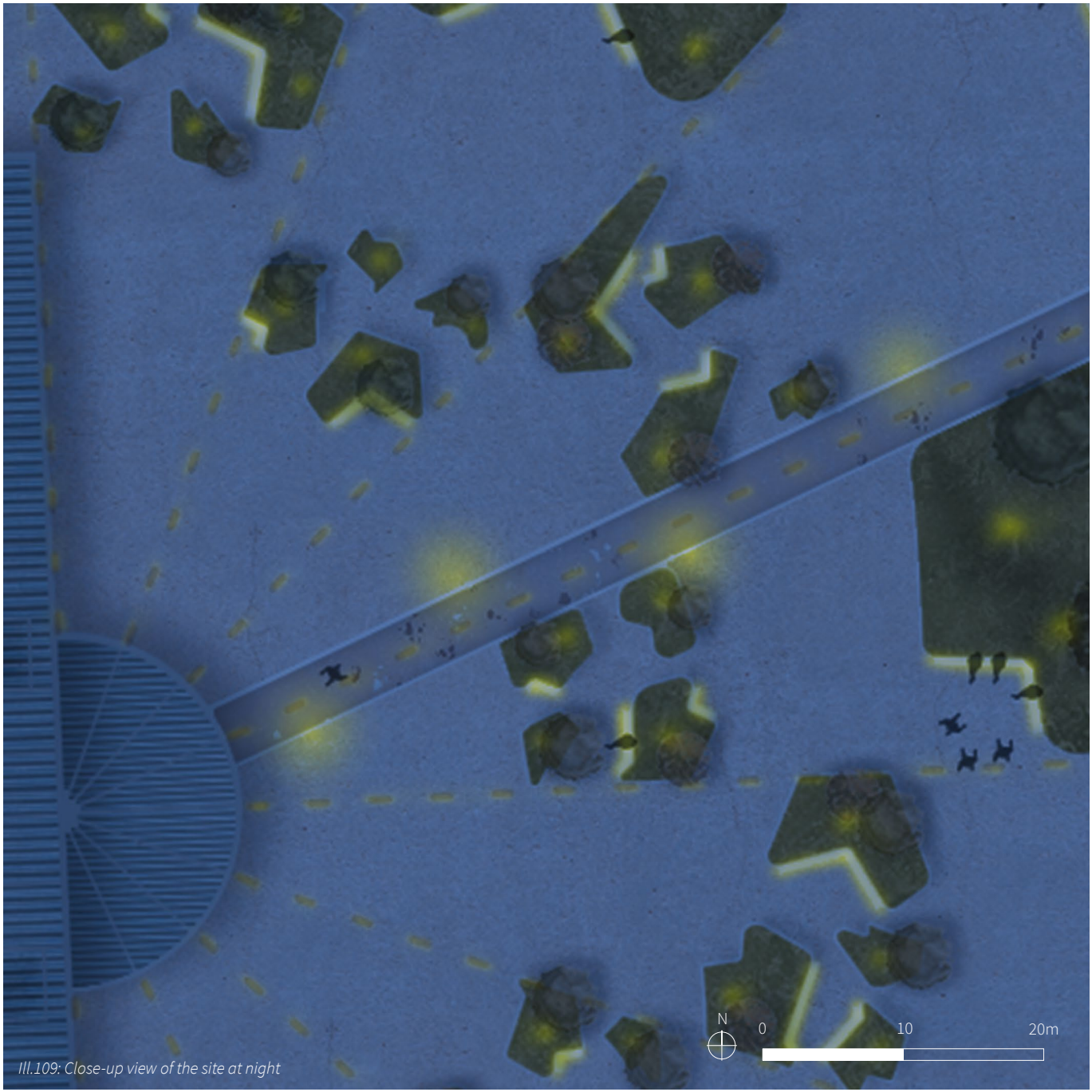




Ill.106: Diagram and reference for street lights

Ill.107: Diagram and reference for bench and ground lights

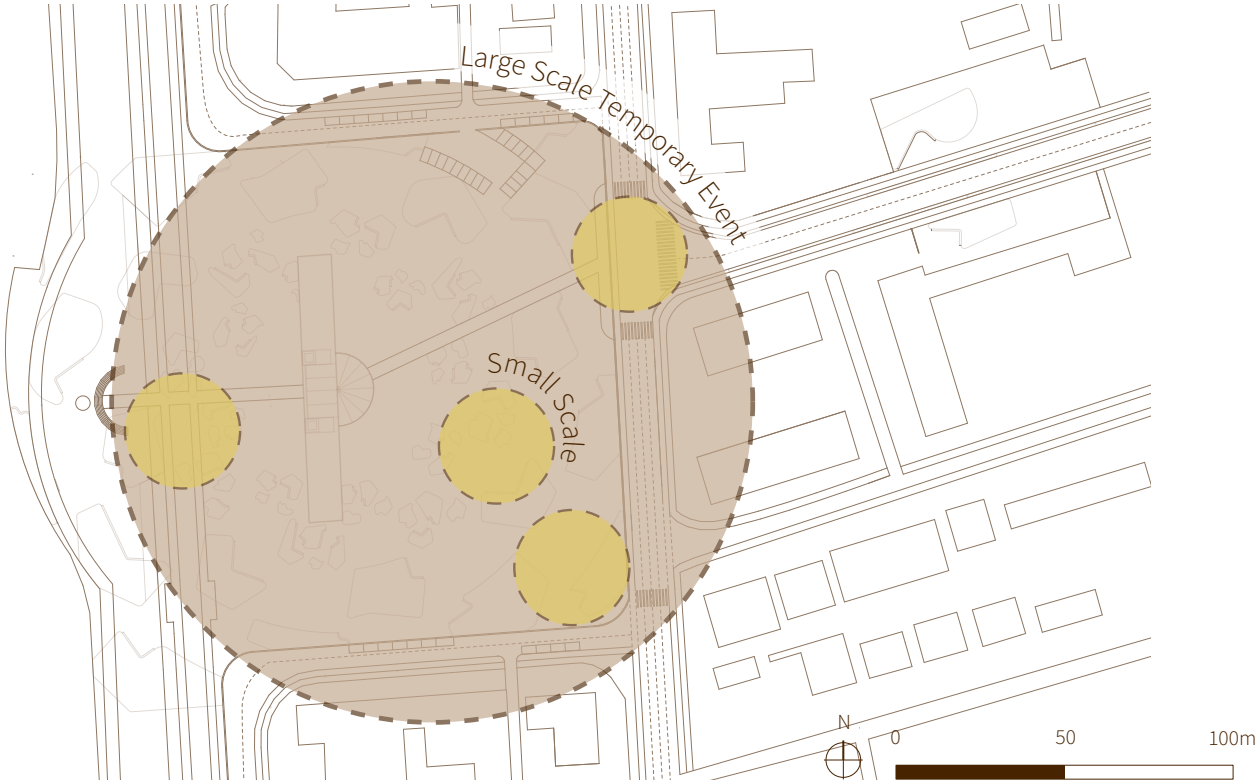
Ill.108: Diagram and reference for lights for green pockets



Ill.109: Close-up view of the site at night

Elderly Friendly Temporary Uses

The presence of people attracts people (Gehl, 2010), which is why understanding the possible activities within the public space is an integral part of Sensing a Stroll. By creating the possibility of different scales of temporary urban events, the new site's design allows the possibility of various human gatherings. The different sizes of the spaces between green pockets and the flat and smooth surface on the ground also enhance these possibilities.



Ill.110: Diagram of two scale temporary events proposal

Large scale event	Summer	Autumn	Winter	Spring
Concert & Dancing	■			■
Christmas Market			■	
Illumination Festival		■		

Small scale event	Summer	Autumn	Winter	Spring
Outdoor Yoga class	■			
Assocaition Fair	■			■
Food Market	■	■		■
Ice-skating			■	

Ill.111: Table for temporary events for each season

Potential Large Scale Event

Music Venue and Dancing

Ill.112: Zoom-in on music venue at the site

Potential Small Scale Event

Association Fair and market

Ill.113: Zoom-in on market at the site

A study based on Blackpool's ballroom for the elderly has shown that social dancing contributes to the longevity of elderly dancers, 'giving them something to enjoy and focus upon - to live for' (Skinner, 2013). The moving and visual connection with the other dancers seems indeed to release endorphins and takes away the aches, pains and disabilities associated with old age (Skinner, 2013). Many ballrooms and dance events take place in the centre of Blackpool, and the renewal of the site could see the implementation of a different stage while leaving room for people to dance around. The elevations of the green pockets and benches also provide a viewpoint for spectators and a rest space for the dancers.The elevations of the green pockets and benches also provide a viewpoint for spectators and a rest space for the dancers.

On a smaller scale, a few types of temporary events can take place in between the green pockets. These events can be a way to showcase the local community and its initiatives. An association fair can be organised, as well as a small creators' market with the setting up of containers. While the adults and elderly are chatting, the children can play with the elevations of the green pockets.

Play and Talk around the Green Pockets

Behind the Solaris Café and well encompassed by the green pockets, the volunteers of the local associations are having a coffee together. It is possible to borrow some tables and chairs from the café and to gather them around the existing benches on the site. While the adults are chatting, children can play in the green pockets elevations and interact with the planting of the sensory garden.

Ill.114: Renders of uses in and around the green pockets

Design Evaluation

The design implementations of the thesis project can be evaluated regarding its four structuring themes, illustrated in the opposite table. As green pockets constitute a core design solution, this implementation can be assessed from five evaluation perspectives, which are elevation, planting, trees, benches and the strategy of shape and location. Focusing on green pockets, the table showcases that this implementation plays a key role in age-friendly mobility and design, emphasising the importance of greenery in urban areas.
It can be also highlighted that the design of Sensing a Stroll allows multiple benefits. For instance, the location of the street and ground light reflects the sun radius from the existing cafe and creates guidance at day and night while bringing pleasantness to the landscape. The planting proposal offers also a large range of outcomes, strongly contributing to all the four themes.
Thus, the design implementation enhances not only safety, but also wayfinding and guidance, which are particularly important for the mental map that the elderly create about a place.

Overall, it appears that green pockets provide empirical solutions for all the four selected themes and that the design for the surrounding streets and paths increases accessibility and safety within and around the site. The desire to create an elderly-friendly public space seems therefore to be achieved, thanks to a design strongly reinforcing interaction, accessibility, pleasantness and safety, while keeping the elderly in mind at all time.

Strong contribution Partial contribution

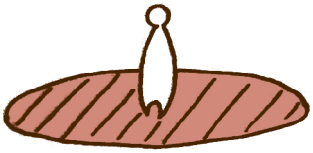
Implementation		Interaction	Accessibility	Pleasantness	Safety
Green pockets	Elevations				
	Flowers and plants (Sensory garden)				
	Trees				
	Benches				
	Shape and Location				
Street and ground light					
Pedestrian-only Zone					
Access Ramps to the Promenade					
Crosswalks					
Pedestrian and bike path					

Ill.115: Table for design evaluation

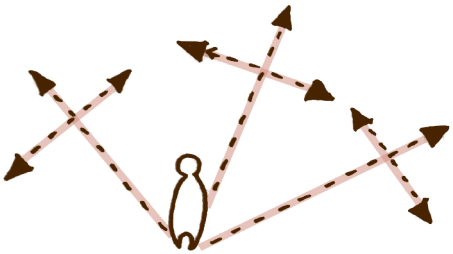
Design Components for Elderly-Friendly Public Space

The following design components constitute a sum-up of the design chapter. Together, they combined knowledge from theoretical research and the practical application of design on site. They allow us to rise from the very empirical and site-based aspect of Sensing a Stroll and to ask ourselves about the global parameters facilitating access and interaction for the elderly in the framework of public space. In other words, these components attempt to illustrate which characteristics of the built environment can facilitate and enhance residents' social interaction (Hani, 2014) as well as mental and physical health. These components have a gerontological focus, at the crossroads between urban design and urban sociology.

Frequent rest space
Reducing the distance between rest spaces (i.e. benches) minimises the difficulty of moving.

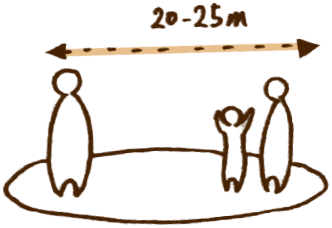


Flat and smooth surface
Minimising the elevation and friction on the ground helps the elderly's walk, especially with a walking assistance structure.



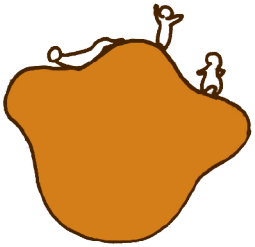
Frequent Intersection
A well-connected space with four ways intersections increases pedestrian-prioritised space.

Ill.116: Diagrams for design components to encourage elderly-friendly mobility and design

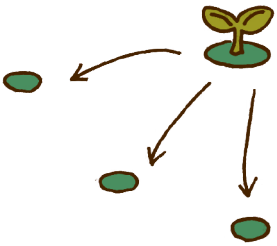


Interaction within a 20-25m radius
Visual interaction within a 20-25m radius provides facial information and the feeling of socialising.

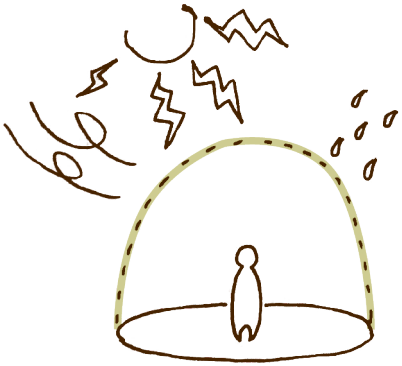
Intergenerational-friendly Space
Inviting intergenerational communication improves the elderly's mental health.



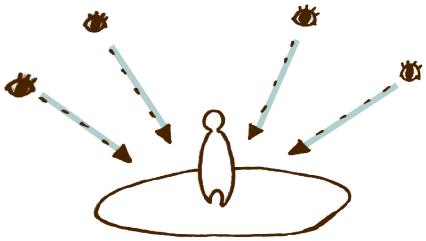
Universaly Applicable Design
An implementation which considers various physical disabilities of users invites inclusive and intergenerational communication.



Applicable (Small) Greenery
Rather than one big green space, small but accessible green space is beneficial for the elderly, by reducing stress and providing guidance for instance.



Comfortable Outdoor Space
A comfortable outdoor space invites people to spend more time outside.



Invite eyesight throughout a day
Eyesight from the others reduces the crime rate and increases the feeling of safety, inviting social interaction.

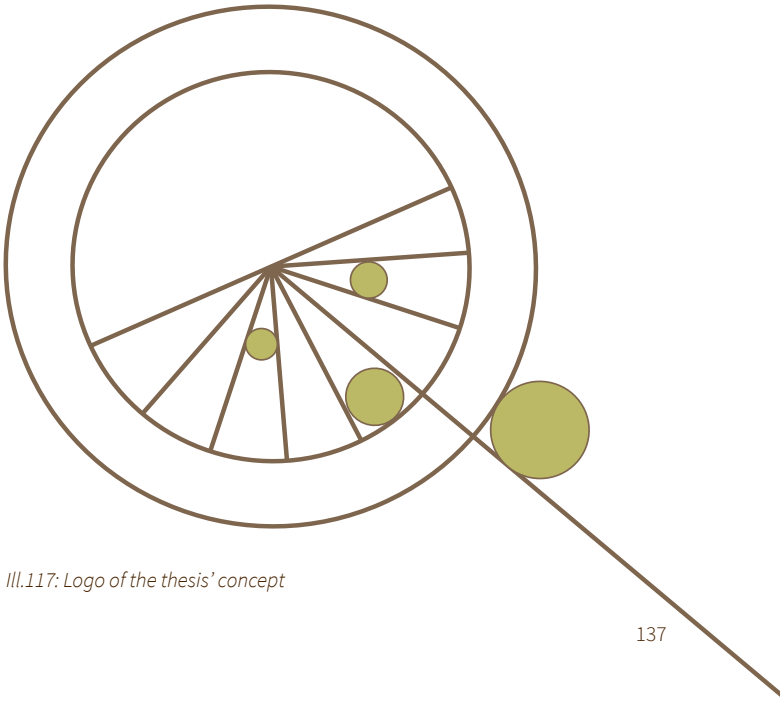
Conclusion

The town of Blackpool is now embarking on a new journey of renewal, and Sensing a Stroll reinforces this image. By engaging with elderly users, who are the majority in the town, Sensing a Stroll aims to put locals back at the heart of urban concerns. The new Solaris Recreation Ground and its Promenade are now enhanced by greenery. This implementation will lead to an increase in mental and physical health for the elderly, as it has been shown that these users are more likely to suffer from isolation and loneliness, which adds to the economic and social difficulties in a town like Blackpool. In addition to the greenery, the intermediate spaces between the green pockets represent a strong asset of the new site. These spaces represent a major turn towards increased accessibility and comfortable mobility to and within the site. They are places where pedestrians feel safe so that residents are encouraged to use them, thereby strengthening the chance for social encounters (Talen, 1999). The desire to encourage encounters and interaction is indeed at the heart of the thesis project. The curved shapes of the soft and hardscape encourage interaction without forcing, from both a human and environmental perspective. Although the elevations of some of the green pockets will not be accessible to some users, they will still be beneficial to them because of the wind protection they offer. Elderly people with limited mobility can therefore take full advantage of the benches designed for meeting and interacting with each other in the public space. Overall, the hardscape elements have been designed to be easily accessible, comfortable and safe for the elderly. Far from creating an open-air retreat centre, the vision of Sensing a Stroll is that, by designing an inclusive space for the elderly, we are designing an inclusive space for all. Wherever access to a person with reduced mobility or in a wheelchair is possible, children, teenagers and adults can also experience the premises in many ways. Sensing a Stroll is therefore a bet on intergenerational affordance. The vision that each individual has of their expectations and desires towards the landscape is plural. Thanks to its many shapes and nooks, the new site offers each user his or her own experience of the place and a way for the forgotten users of Blackpool to reinvest in their urban space.

Reflexion

Taking the context of Blackpool into account, a projection on the future of the Sensing a Stroll can be reflected. In ten years, one can imagine a brighter image for Blackpool. The Blackpool Central regeneration project and the project site will have helped to change the town's unpleasant and deprived image. Little by little, the elderly will find their place in the urban space. They, the forgotten ones of the general big scale urban projects, will now have a space that is easy to access and that strengthens their social ties. Each year, during the Illumination Festival, the project site will become the privileged space dedicated to social gatherings. New light installations can be installed with and on the elevations of the green pockets, turning the site into the future main attraction along with the festival.

The municipality may then decide to replicate this strategy. The concept of Green pockets, because of their usefulness in terms of wind protection, social interaction and pleasantness, among others, could be an asset in other public spaces in the town. This expansion could result in reducing inequality on a town scale, as Loder (2020) emphasises the importance of small-scale urban green. In this bigger perspective, the green pockets scheme could also constitute a green corridor across Blackpool. Such a large-scale proposal would be particularly elderly-friendly as it would encourage people to walk across the town, tackling both mental and physical health problems for elderly users. A green-pockets based urban corridor would give priority back to pedestrians and would develop a more pleasant environment and space for soft mobilities. Overall, the Sensing a Stroll project is intended to be sustainable over time. The project is not based on an architectural trend but on the desire to create a more inclusive space, for the elderly and for all.

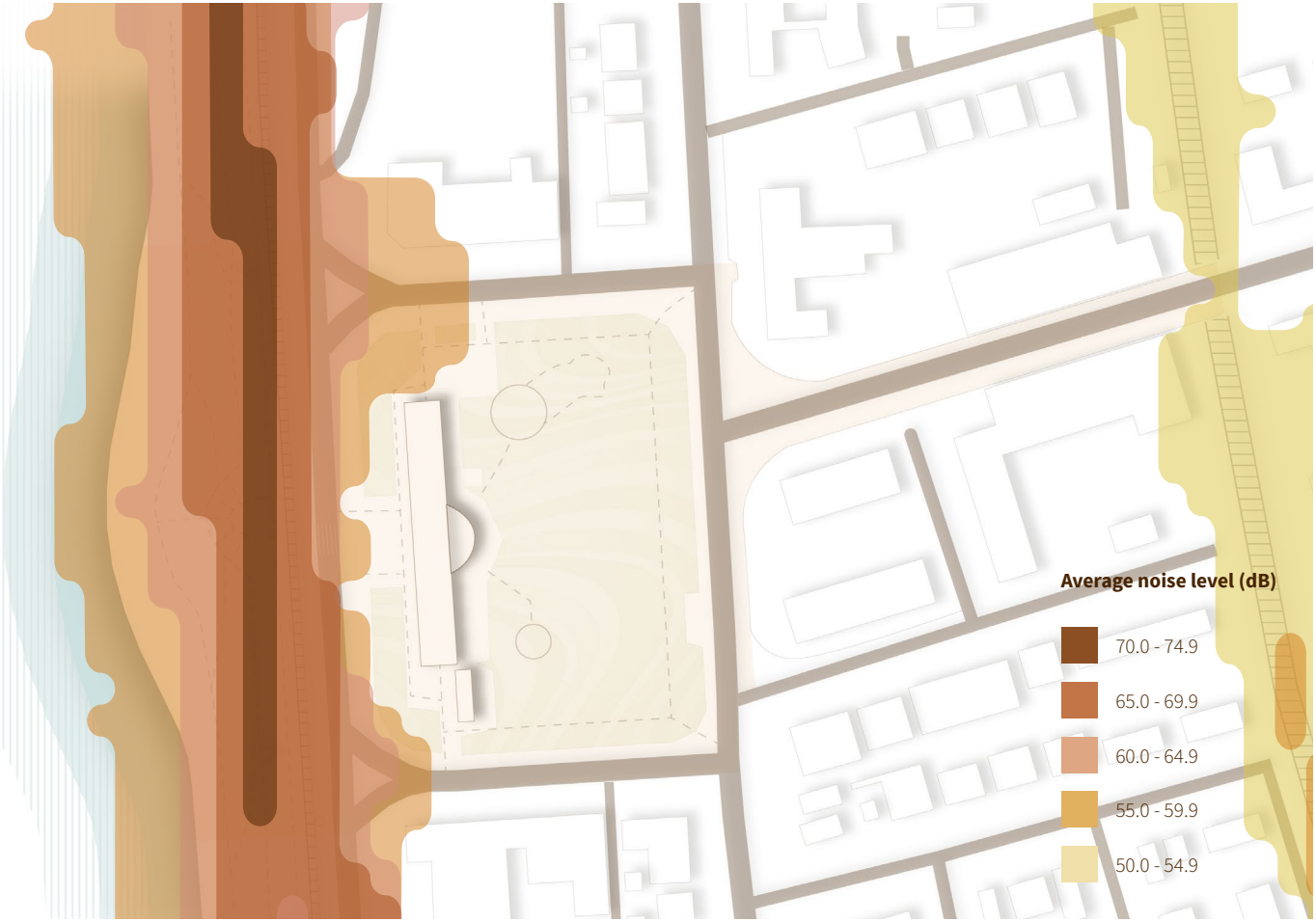


Ill.117: Logo of the thesis' concept

APPENDIX

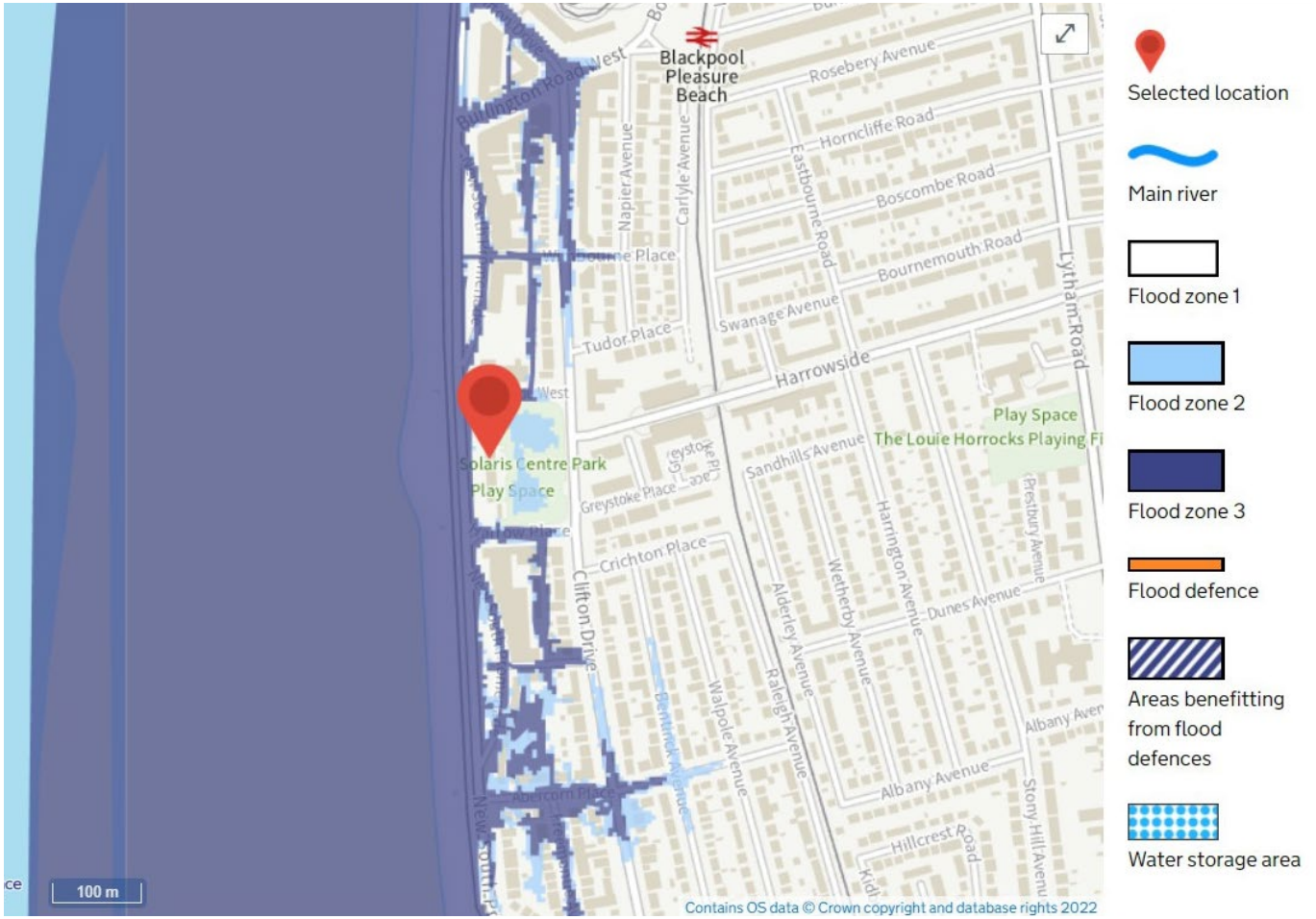
Table of Contents

Sound Pollution



There are two sources of noise pollution around the site. One located to the west is the most important and comes from car traffic on New Promenade. The second source of noise, located to the East of the public space, comes from train tracks but is softer.

Flooding



The analysis conducted in terms of flooding shows a low risk on the selected site. the Promenade has a higher but not critical risk. As for the Solaris Recreation Ground and Harrow Side, the risk is almost non-existent. By conducting this analysis, the group was able to ascertain the feasibility of its design, and also the possibility of sustainability of the across theme project.

First Site Visit

30.Jan.2022-04.Feb.2022

The first site visit was made in February 2022 at the very beginning of the Master Thesis. The aim of this visit was firstly to understand the town of Blackpool as a whole and the elements shaping the selected site, both in terms of hardscape and softscape. It was therefore observed that the street furniture was particularly old and rusty on the site and that the softscape elements were sparse. As for the town, Blackpool surprises with its many urban frills, especially along the Promenade, in contrast to a physically deprived town. During this visit, Interviews were conducted with stakeholders and users of the site.

Second Site Visit

06.Apr.2022-10.Apr.2022

The second site visit was conducted to confirm or re-elaborate the directions taken in the design proposal. It was also an opportunity to continue observation-based analysis, particularly in terms of traffic and human flows. Emphasis was placed on understanding the routines of appropriation of the site, both indoor and outdoor. This visit was an opportunity to conduct more interviews and also to meet the Head of Planning and Urban Design at Blackpool Council, with whom we interacted throughout the project.

Meeting with Partner

In choosing Blackpool for the project, the group wanted to work in collaboration with the local council. Tom Bennett, the Urban Planning and Design Officer, was contacted at the beginning of the project. He was able to follow the progress of the project and provide information about the town, which was invaluable in understanding the local dynamics and issues. During the second site visit, a meeting was arranged with Tom. We discussed the project together, and Tom organised an urban walk through the major urban spaces of Blackpool that are being renovated or have recently been renovated. This urban walk allowed us to better understand the directions taken by the municipality in terms of urban renewal. We also discussed our design proposal and presented our main directions.

Interviews

Date: 30.01.2022
Place: Cafe Chicco (in the Solaris Centre)
Interviewee: local restaurant owner (Tiziano from Italy, 57 years old. Lives in Blackpool for more than 20 years. Grew up in Como, Italy and used to live in London)

Q. How can you describe Blackpool?
Holiday resort, not a cultural city, and young town, social problem (drug, lost jobs, and the 15th most social problematic city in England)
When he came to Blackpool, it still had a golden age but start declining.
Once, the local council build 3 tall residential properties to put people with drug and mental problems (Layton flat). However, as it was like a ghetto and there is no culture, the area causes more problems. Then the council demolished the building 6 years ago.
Additionally, many people commit suicide because of depression in Blackpool.

Q. How would you describe the character of residents in Blackpool?
Very good, but poor culture. People don't read and prefer to drink.
Most of the aged people are from another big city (e.x. Manchester) after retirement for quiet and reasonable place to live.

Q. Out of 10 (where 10 is the max and 0 the min), How much do you like living in Blackpool)?
4
If there is culture, the score would be much better.
20 years ago, businesspeople wanted to build a big casino. Although the local said 'no' at the beginning, they were made.
Q. Do you find anything to be improved in Blackpool?
University.
University causes cultural exchange and brings young people.

Q. Do you know any local communities with which I can communicate with?
Historic teacher specialized in the medieval era (a close friend to him)

Q. Do you think the city is car-dominated? What do you think about it?
Yes. No-traffic zone is required like a city centre in Italy. Many educated people around him also required no-traffic zone. Even in Blackpool, I normally don't use a car.

Q. Do you feel like there is a strong connection/community feeling in Blackpool between the residents?
Good. I think this area (around the Sitolas and over the bridge) has one of the best communities in Blackpool.
North and central parts don't have a good community.

Q. How do you hope Blackpool will turn/transform in the future?
Culture, such as university, theater, and heartful painting.
Football stadium which is planned in the regeneration project is not cultural thing for me. Normally people drink a lot and behaive badly.

Q. If you had to add one element (for you to stay there) in the Solaris ground, what would it be?
Library, gym (place for sports or Yoga)
There are not so many gyms in Blackpool, and people in Blackpool don't play sports a lot.

Q. What would make you stay there?
My business (restaurant) and daughters.

Q. What type of tourists visit in Blackpool?
Family with their children, especially around the pleasure beach
Tourists in winter comes here like a yearly routine for about 3 days visit.

Q. Does the illumination turn in the summer?
Yes, but I think they are outdated. I prefer the illumination like a light festival in Lyon, France

Q. Do you know what type of building will be made next to the Solaris?
It was used to be a rest home for elderly, and it will be a flat for all generations.

Date: 30.01.2022
Place: Cafe Chicco (in the Solaris Centre)
Interviewee: worker at the cafe (maybe in her 60s)

Q. Normally, who is the user of the cafe?
People who live in the surrounding area. But in summer, there are a lot of tourists. There is a band festival in the open area and bike rides event between Manchester and Blackpool which brings 5,000 visitors.

Q. Are people who live in the Nursing Home (Gilwood Lodge Nursing Home) also use the cafe?
Yes. The local blind society also use this cafe for Christmas lunch. They are lots of people who use the cafe regularly (i.e. every week).

Q. Normally, how do they come to the cafe?
I suppose they normally come here by car. This is because they are free parking. Free parking is rare in Blackpool. Additionally, this cafe is dog friendly, which is also rare in Blackpool. Dogs can also enjoy the open space, as you can see. So, people like to come here by car. I can say that the free parking and dog-friendly environment make the cafe popular.

Q. Is the cafe managed by a private company or local government?
It's managed by the Blackpool council. The site itself is managed by the Blackpool council.
This building was used to be aquarium.

Date: 04.02.2022
Place: Airbnb in Blackpool North
Interviewee: resident in Blackpool North - Jason (the owner of Airbnb. Who move to Blackpool from York 20 years ago. Maybe in his 50s)

Q. How can you describe Blackpool?
Tired
The seaside resort was wealth in 1830s. Then, Blackpool started to improve 30 years ago. Although 20 years ago Blackpool was still vibrant and there were 15 bed and breakfast in the street, now there is only one bed and breakfast in the street.
Blackpool rely on tourist a lot. 20-30 years ago, there were big groups of girls and boys, but now most of people go to Spain or Portugues and so on for their vacation.
Although the promenade was made 10 years ago, the number of tourist keeps declining and there are fewer tourist even in the summer.

Q. How would you describe the character of residents in Blackpool?
Deprived
In the central, people are not respectful.
In the south part, people are mixture of the middle and affluent. Particularly close to the airport, people are affluent.

Q. Out of 10 (where 10 is the max and 0 the min), How much do you like living in Blackpool)?
3
Good neighbours have left Blackpool. 3 is generous for him.

Q. Do you find anything to be improved in Blackpool?
(I'm sorry but I forgot this question. I think his answer is related to the answer for the transformation in Blackpool.)

Q. Do you know any local communities with which I can communicate with?
No

Q. Do you think the city is car-dominated? What do you think about it?
It's car-dominated city, but it's normal in the UK. I can say the bus service is good in Blackpool especially for residents.
Tram is more for tourist and busy in the summer.

Q. Do you feel like there is a strong connection/community feeling in Blackpool between the residents?
I don't know really.
There is not good community in the central part of Blackpool. In the north part is 'OK'.

Q. How do you hope Blackpool will turn/transform in the future?
Knockdown and build again. Especially the hotel for the summer season is needed.
Blackpool has kept left all parts in the city. Therefore, now there are a lot of places to be repaired or fixed. The regeneration project has started 10 years ago, and I assume it takes more 20 years to be realised.
I think we need a cultural place in the city, such as fashionable shops, eating spaces, and attractions.

Q. If you had to add one element (for you to stay there) in the Solaris ground, what would it be?
I think it's already OK.

Q. What would make you stay there?
For my daughter. Before she was born, I was going to go to another place. But now the daughter is happy to meet her grandmother and father. I hope while she grows up Blackpool becomes better.

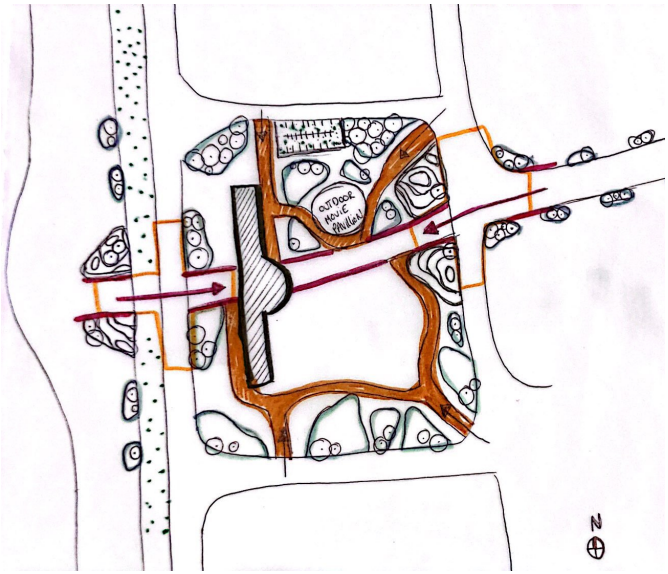
Q. Why there are so many elderly tourists now?
The hotel in Blackpool provides 'Winter offer'. 2 people can stay in Blackpool for 4 nights with dinners, evening entertainment, and bed and breakfast only with 160 GBP. Particularly weekdays are cheaper than weekends. Therefore, many elderlies visit Blackpool in the wintertime.

SWOT Analysis

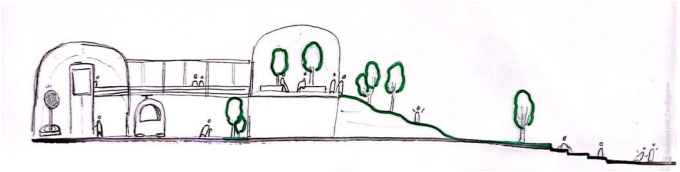
At the beginning of the project, a SWOT analysis was carried out to understand the main aspects of the site.

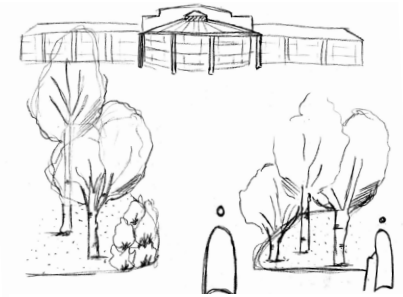
SWOT Analysis for site:

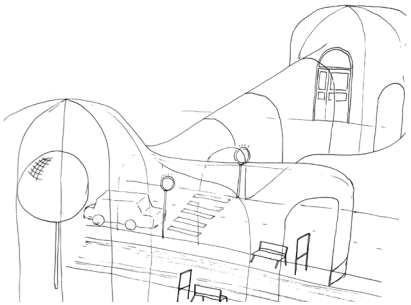
Design Process

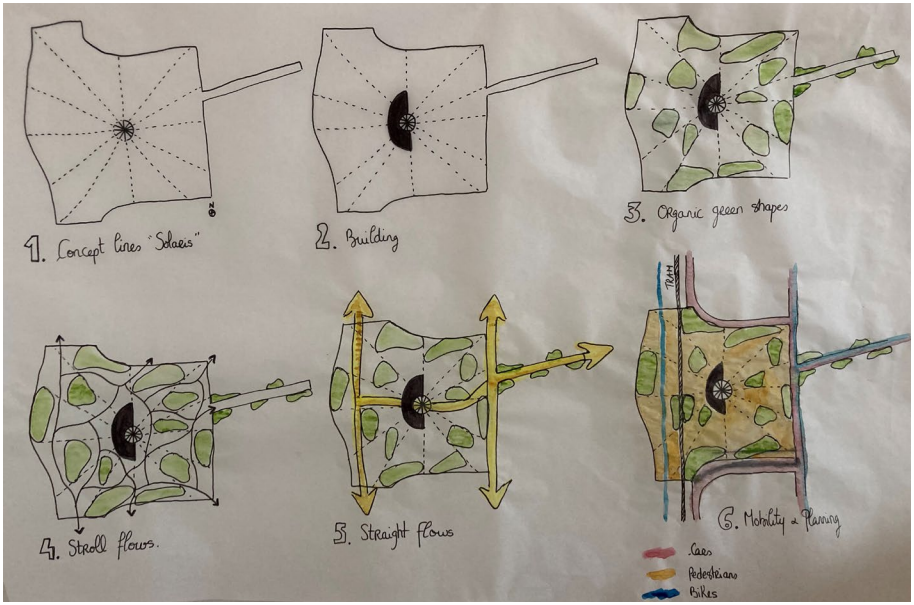


The design process was largely based on hand-sketching. Whether in the form of a top-view plan, a human perspective or an axonometric view, the group members chose this methodology to communicate their ideas with each other. It is indeed a quick and collaborative process, where a person's drawing can be the scene of exchange. The other person can complete the drawing, erase and start again, and the process is thus reinforced critically and constructively.

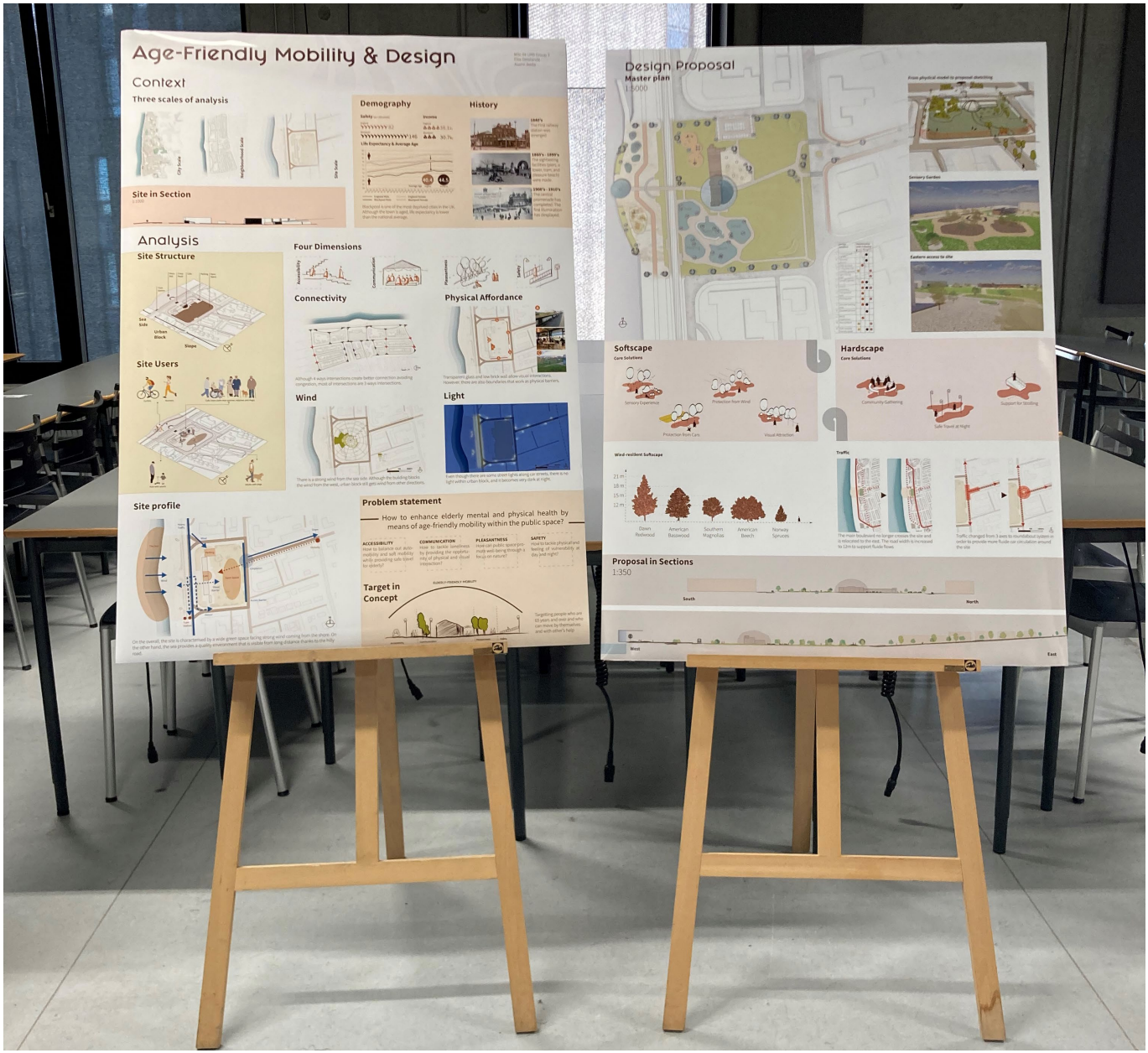








Midterm Presentation



The midterm presentation represents one of the milestones of the Master Thesis. It is a travelling exhibition, where each group presents two posters of their project and everyone can move around the exhibition at will. The mid-term is an opportunity to give a first impression of the design, to have a look at the work of others and to get feedback from peers. For the mid-term, the group made the two posters opposite. This was the first draft of the design and the feedback received helped to redefine the direction of the design proposal.

References

A

ALEXANDER, D. and WYDEMAN, B., 2020. The Intersection and Divergence of New Urbanism and Environmental Psychology: An Exploration. Frontiers in built environment.

AKAGI, T. & ADACHI, K. 2015. Improving Environmental Safety and Legibility for the elderly with Dementia. Journal of Architectural and Planning Research, Vol. 32, No. 3. pp. 181-198. Locke Science Publishing Company, Inc.

A'URBA: Agence d'Urbanisme de Bordeaux Aquitaine, 2011. L'Usage de la Ville par les Femmes. Géographe ADES. Available at: https://www.aurba.org/productions/lusage-de-la-ville-par-les-femmes/

B

BALL, M.S., 2012. Livable communities for an aging population: urban design solutions for longevity. Wiley-Blackwell.

BERTAMINI, M. & RAMPONE, G. & MARKIN, A. & JESSOP, A., 2019. Symmetry preference in shapes, faces, flowers and landscapes. PeerJ. 7. e7078. 10.7717/peerj.7078.

BEUTE, F. and DE KORT, Y.A.W., 2014. Natural resistance: Exposure to nature and self-regulation, mood, and physiology after ego-depletion. Journal of environmental psychology, 40, pp. 167-178.

BLACKPOOL COUNCIL, n.d., n.d.-last update, World Class Leisure Destination. Available: https://blackpoolcentral.com/.

BRANAS, C.C., SOUTH, E., KONDO, M.C., HOHL, B.C., BOURGOIS, P., WIEBE, D.J. and

BRATMAN, G.N., DAILY, G.C., LEVY, B.J. and GROSS, J.J., 2015. The benefits of nature experience: Improved affect and cognition. Landscape and urban planning, 138, pp. 41-50.

BUCKLEY JULIE, February, 2015-last update, BLACKPOOL: the rise and fall. Available: https://geograblogg.wordpress.com/2015/02/07/blackpool-the-rise-and-fall/.

C

CARTER ANDREW and SWINNEY PAUL, Mar, 2018-last update, Where are the UK's youngest and oldest city populations?. Available: https://www.bbc.com/news/uk-43316697.

E

EDWARDS, P. & TSOUROS, A., 2008. A Healthy city is an active city. WHO Regional Office for Europe. ISBN 978 92 890 4291 8 Available online PDF at: http://www.euro.who.int/document/E91883.pdf

EMLET, C. & MOCERI, J., 2012. The Importance of Social Connectedness in Building Age-Friendly Communities. Journal of aging research. 2012. 173247. 10.1155/2012/173247.

G

GEHL, J., 2010. Cities for people. Washington, DC: Island Press. Curti's Landscaping, Inc. | Curti Associates, 2019. What is Hardscape and softscape. https://www.curtilandscaping.com/blog/what-is-hardscape-and-softscape/

GEHL, J., 2019. Soft City: Building Density for Everyday Life. Washington, DC: Island Press.

ITV, N., October, 2021-last update, Multi-million pound regeneration of Blackpool train station gets green light. Available: Multi-million pound regeneration of Blackpool train station gets green light.

H

HANI, A.,2014. The influence of spatial design characteristics on low-rise residential neighbourhoods in Basra city: Enhancing residents' social interaction. International Journal of Housing Markets and Analysis, Emerald Group Publishing, vol. 7(4), pages 559-585, September.

HASEMI, S. & KERSHAVARZ, M., 2017. A Critical Review of Studies on Health Needs Assessment of Elderly in the World. 3. 1-9.

HEATWOLE SHANK, K. & CUTCHIN, M., 2016. Processes of developing 'community livability' in older age. Journal of Aging Studies. 39. 66-72. 10.1016/j.jaging.2016.11.001

J

Jardinage Le Monde, nd. Le jardin à la française ou jardin classique. Available at: https://jardinage.lemonde.fr/dossier-149-jardin-francaise-classique.html

K

KORPELA, K., BORODULIN, K., NEUVONEN, M., PARONEN, O. and TYRVÄINEN, L., 2014. Analyzing the mediators between nature-based outdoor recreation and emotional well-being. Journal of environmental psychology, 37, pp. 1-7.

KUO, F.E. and SULLIVAN, W.C., 2001. Aggression and Violence in the Inner City. Environment and behavior, 33(4), pp. 543-571.

L

LANCASHIRE COUNTY COUNCIL, November, 2019a-last update, 2019 deprivation analysis. Available: https://www.lancashire.gov.uk/lancashire-insight/deprivation/indices-of-deprivation-2019/2019-deprivation-analysis/.

LANCASHIRE COUNTY COUNCIL, November, 2019b-last update, Average earnings and hours of work. Available at: https://www.lancashire.gov.uk/lancashire-insight/economy/income-earnings-and-benefits/average-earnings-and-hours-of-work/.

LAWSON, B., 2006. How Designers Think – The Design Process Demystified. University Press, Cambridge.

LIVE BLACKPOOL, November, 2021-last update, History

of Blackpool and How it Began. Available: https://www.liveblackpool.info/about/history/history-of-blackpool-and-growth-of-the-town/#1840s-advent-of-the-railways.

LODER, A., 2020. Small-Scale Urban Greening. 1 edn. Milton: Routledge.

LYNCH, K., 1984. Reconsidering the Image of the City. In Banerjee, Tridib; Southworth, Michael (eds.). Cities of the Mind: Environment, Development, and Public Policy. Springer. pp. 151–161.

M

MAAS, J., SPREEUWENBERG, P., WINSUM-WESTRA, V., M, VERHEIJ, R.A., VRIES, D., S and GROENEWEGEN, P.P., 2009. Is green space in the living environment associated with people's feelings of social safety? Environment and planning. A, 41(7), pp. 1763-1777.

MACDONALD, J.M., 2018. Citywide cluster randomized trial to restore blighted vacant land and its effects on violence, crime, and fear. Proceedings of the National Academy of Sciences.

MARCO BERTAMINI, GIULIA RAMPONE, ALEXIS D.J. MAKIN, ANDREW JESSOP, 2019. Symmetry preference in shapes, faces, flowers and landscapes.

MURRAY, L., 2015. Age-friendly mobilities: A transdisciplinary and intergenerational perspective. Journal of transport & health, 2(2), pp. 302-307.

P

PAAY, J. and KJELDSKOV, J., 2007. Understanding Situated Social Interactions: A Case Study of Public Places in the City. Computer Supported Cooperative Work (CSCW), 17(2-3), pp. 275-290.

PARKINSON and SHELAGH, 2021, Oct 14,. Blueprint for future bus services in Blackpool to be sent to the Government by the end of the month - this is what it will mean for commuters; A blueprint for future bus services around Blackpool has been agreed and is due to be submitted to government by the end of this month. Black Pool Gazette.

PLUMPLOT, March, 2022-last update, Blackpool crime stats. Available: https://www.plumplot.co.uk/Blackpool-crime-stats.html.

R

RICHARD, C., 2021. The Evolution of Old Age. 158.

S

SIM, D. and GEHL, J., 2019. Soft city. Washington ; Covelo ; London: Island Press.

SMITH, J.S., & CARTLIDGE M.R. (2011). Place attachment among retirees in Greensburg, Kansas. The Geographical Review, 101, 536-555.

T

Talen, E. (1999) 'Sense of Community and Neighbourhood Form: An Assessment of the Social

Doctrine of New Urbanism', Urban Studies, 36(8), pp. 1361–1379. doi: 10.1080/0042098993033.

TAYLOR, M.S., WHEELER, B.W., WHITE, M.P., ECONOMOU, T. and OSBORNE, N.J., 2015. Research note: Urban street tree density and antidepressant prescription rates—A cross-sectional study in London, UK. Landscape and urban planning, 136, pp. 174-179.

THE GUARDIAN, 2018, Oct 25,. Early death rate in deprived Blackpool 'twice that of the most affluent areas'; Study into premature death rates in local authorities highlights stark division between rich and poor areas. The Guardian (London). ISSN 0261-3077.

W

WORLD HEALTH ORGANISATION, 2007. Global Age-friendly Cities: A Guide, World Health Organization Publications.

Illustrations

Ill.1: Own illustration
Ill.2: Own illustration
Ill.3: Own illustration
Ill.4: Nb1: https://twitter.com/seasideferry/status/130295913 2710965248 Nb2:https://www.blackpoolgrand.co.uk/blackpool-in-the-70s Nb3: https://www.pinterest.com/pin/118923246401290865/?mt=login
Ill.5: Own illustration
Ill.6: Own illustration
Ill.7: Own illustration
Ill.8: Own illustration
Ill.9: Own illustration
Ill.10: Own illustration
Ill.11: Own illustration
Ill.12: Own illustration
Ill.13: Own illustration
Ill.14: Own illustration
Ill.15: Own illustration
Ill.16: Own illustration
Ill.17: Own illustration
Ill.18: Own illustration
Ill.19: Own illustration
Ill.20: https://www.blackpool.gov.uk/Your-Council/Creating-a-better-Blackpool/Blackpool-Central/Blackpool-Central.aspx
Ill.21: Own illustration
Ill.22: https://www.visitblackpool.com/things-to-do/blackpool-illuminations/
Ill.23: Own illustration
Ill.24: Own illustration
Ill.25: Own illustration
Ill.26: Own illustration
Ill.27: Own illustration
Ill.28: Own illustration
Ill.29: Own illustration
Ill.30: Own illustration
Ill.31: Own illustration
Ill.32: Own illustration
Ill.33: Own illustration
Ill.34: Own illustration
Ill.35: Own illustration
Ill.36: Own illustration
Ill.37: Own illustration
Ill.38: Own illustration
Ill.39: Own illustration
Ill.40: Own illustration
Ill.41: Own illustration
Ill.42: Own illustration
Ill.43: Own illustration
Ill.44: Own illustration
Ill.45: Own illustration
Ill.46: Own illustration
Ill.47: Own illustration
Ill.48: Own illustration
Ill.49: Own illustration
Ill.50: Own illustration
Ill.51: Own illustration
Ill.52: Own illustration
Ill.53: Own illustration

Ill.54: Own illustration
Ill.55: Own illustration
Ill.56: Own illustration
Ill.57: Own illustration
Ill.58: Own illustration
Ill.59: Own illustration
Ill.60: Own illustration
Ill.61: Own illustration
Ill.62: Own illustration
Ill.63: Own illustration
Ill.64: Own illustration
Ill.65: Own illustration
Ill.66: Own illustration
Ill.67: Own illustration
Ill.68: Own illustration
Ill.69: Own illustration
Ill.70: Own illustration
Ill.71: Own illustration
Ill.72: Own illustration
Ill.73: https://landezine.com/hto/
Ill.74: https://landezine.com/magneten-sensory-garden-by-masu-planning/
Ill.75: https://www.aarhus.dk/nyt/sundhed-og-omsorg/januar-2020/foerste-spadestik-til-marselisborgcentrets-park/
Ill.76: https://archello.com/project/the-city-park-aarhus-festival-2012
Ill.77: Own illustration
Ill.78: Own illustration
Ill.79: Own illustration
Ill.80: Own illustration
Ill.81: Own illustration
Ill.82: Own illustration
Ill.83: Own illustration
Ill.84: Own illustration
Ill.85: Own illustration
Ill.86: Own illustration
Ill.87: Own illustration
Ill.88: Own illustration
Ill.89: Own illustration
Ill.90: Own illustration
Ill.91: Own illustration
Ill.92: Own illustration
Ill.93: Own illustration
Ill.94: Own illustration
Ill.95: Own illustration
Ill.96: Own illustration
Ill.97: Own illustration
Ill.98: Own illustration
Ill.99: Own illustration
Ill.100: Own illustration
Ill.101: Own illustration
Ill.102: Own illustration
Ill.103: Own illustration
Ill.104: Own illustration
Ill.105: Own illustration
Ill.106: https://www.coolfiresolutions.com/wp-content/uploads/2018/12/Smart_street_lights-e1563305161574.jpg
Ill.107: https://www.b-light.it/en/portfolio/

AALBORG UNIVERSITY
DENMARK

MASTER THESIS - May 2022
MSc04 URBAN ARCHITECTURE
Group03

ASAMI IKEDA AND ELSA DELALANDE