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FLOW

WATERFRONT IN HEINOLA

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MUrCS
Master in Urban Climate & Sustainability

CONTENTS

SUMMARY

This report introduces a presentation and analysis of the city of Heinola and its profile, together with a marterplan proposal for the waterfront area. The report aims to show to the city of Heinola the potential of its waterfront, and the benefits of transforming it into a diverse public space, with preserved nature, together with some profitable options to attract investors. The main goal of the proposal is to attract people to the city and increase the Heinola population, while making a space that can work as a place for integration and for the fostering of community sense.

Source: The authors

STRUCTURE OF THE REPORT

This report starts with brief profiles of the city of Heinola and the region of Niemelänranta, giving an introduction to develop an urban proposal for the area. Together with the profiles, the findings of the site visit and a SWOT analysis of the area are also presented.

Before developing an urban proposal, this report aimed to analyse the characteristics of the site, such as environmental, social and economic aspects, as well as present relevant literature reviews and benchmarking. With that kind of material, it was possible to develop an analysis of the area through critical thinking, leading to a realistic climate sensitive design. Therefore, the masterplan proposal for the area is presented together with a set of guidelines for the implementation of the plan. The report ends with a conclusion and a description of the group work during the development of the proposal.

INTRODUCTION & FINDINGS

Heinola is an ageing industrial town. Founded in 1776 and given town status in 1839 (Mikkonen 2015), it is older than Lahti, and once the main town in the area, it has lost much of its former splendour. As well as industry, Heinola has traditionally been a spa town, mainly due to its unique microclimate, its position on the shore of the river, and ease of access. There remains to this day an active spa, as well as a swimming hall, and in the summer, an abundance of public and private swimming areas on the riverbank.

The unique microclimate and particular geological structure and abundance of glacially deposited sandy loam (Tarvainen et al. 2014) has created an area abundant in natural flora and fauna, with as an example, an abundance of the early spring flowering Hepatica nobilis, which was a protected species until 2005 (Luontoportti) and which relies on the action of ants to spread its seeds. This largely undisturbed natural beauty is considered to be one of the main attractions of Heinola (Mikkonen 2015).
Heinola has an ageing population, with the percentage of pensioners increasing while the percentage of school agers is dropping (Tilastokeskus). This demographic, combined with a decreasing population has an effect on what services are required, as well as on the need to build and develop new areas. The center of Heinola already contains several empty lots, and buildings which are standing empty.

Heinola sits beside the E75 motorway, making it easy to travel by car and opens up the potential employment area to include Lahti and Mäntsälä. There are also buses available between Heinola and Lahti about once per hour on weekdays, however, the journey time takes an average of one hour (LRT), which can possibly be something which would prevent people from wishing to use the service on a daily basis to commute to work, as long commutes have been proved to cause stress, fatigue, and in worst cases even leading to burnouts (Hanson et al. 2011). Combined with a lack of employment opportunities in Heinola itself, this is an issue which must be considered as part of any environmental impact survey conducted into future planned development within Heinola.

Completion of an environmental impact assessment report is a must during the planning stages of any development such as the one being planned in Heinola. This assessment must take into account the immediate effects of construction work, potential destruction of natural habitats, the potential long-term effects of sediment and nutrients being disrupted by stormwater, as well as the long-term impacts of building heating and maintenance, and increased use of transport (OECD 2021). If and only if all these impacts are considered to be minimalistic should any construction go ahead. Part of the planning process must also include4 consultation with local inhabitants, some of whom may be totally against any development, as Liukko (2022) made very clear, for the people who live in the area of the planned development, particularly the older residents, that area is important to be maintained as it is, an area of natural beauty, which is easily accessible an open for everybody to use.

Fieldtrip to Heinola

25.03.2022








Figures 1-8: Heinola Fieldtrip experience (The authors)

Conclusions of the fieldtrip:

A site visit was conducted to better understand the profile of the city and the impressions of the area, as well as physical aspects and relations. The figures 1-8 highlight that one of the biggest strengths of the area is its preserved natural environment.

Although the site visit was conducted in March 2022, when there is still snow accumulated in the landscape, which can mislead some first impressions, the visit clearly gave the sense of the strong connection that the city has with its waterfront, as well as the potential of the area for future developments as a quality public space for the community.

Figure 9: MUrCS group
Source: The authors

SWOT

The main *strengths* of the SWOT of the waterfront include unique microclimates and natural landscapes, preserved natural environment and the existing infrastructure highlighting the waterfront path. Additionally, the proximity to the city center in a walkable distance specially of the central and south area is a plus. Also, the existing infrastructure in general like street lighting, drainage, etc. is considered as a good starting point for any project.

For the principale *weaknesses* we prioritized the city centre as a cluster of activities, the lack of employment opportunities and mixed-uses neighboorhouds. However, we also pointed the absence of private developers willing to invest in a project at the moment as a weakness.

Nevertheless, the noise from the highway and a limited offer of annual activities are secondary weaknesses.

In the *opportunities* we found the potential to improve touristic attractions, regenerate empty buildings and give more value to the natural views and landscapes. Moreover, the
northern area, which lacks various uses, has the potential to host various activities and projects.

Finally for the *threats,* we pointed the opposition of the community to the project if a correct participatory process is not followed. Meaning, if the people is not involved since the beginning of the process. In addition, the point of migration to bigger cities was added, which was the factor that transformed Heinola into what it is today.

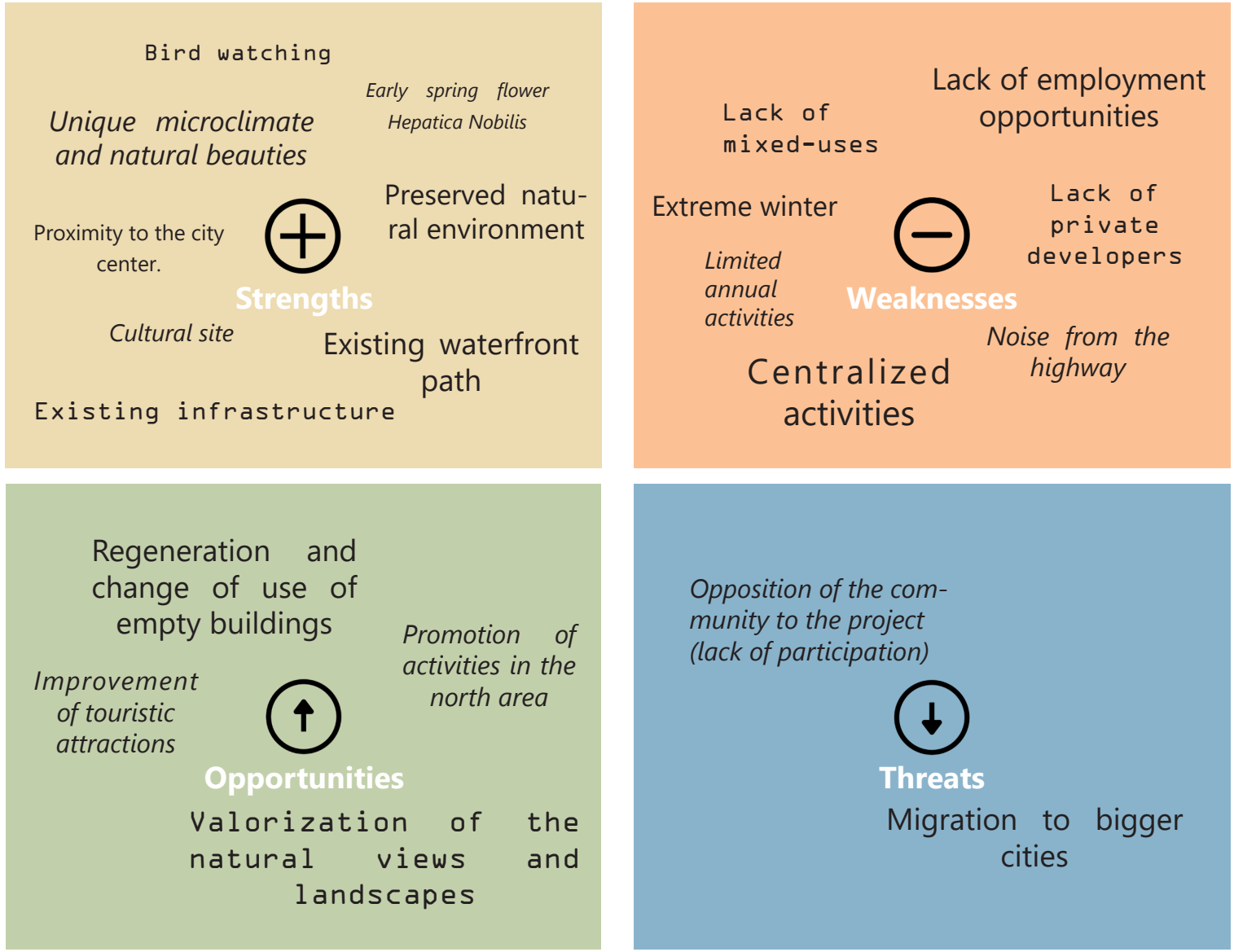
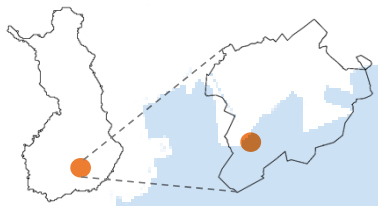


Figure 10: SWOT Word Cloud (The authors)

CONTEXT & SITE ANALYSIS



HEINOLA PROFILE

Heinola is a fairly normal Finnish small town. In many ways, it has been left behind by modern society, and retains a quaint old worldly kind of feel about it.

As a former industrial town, which was once the largest town in the whole of the Päijät-Häme region, but later overshadowed by Lahti, there is still a fairly large amount of industry in and around the town, which retains its feeling of being an industrial area.

Another factor of the town of Heinola is its past as a spa resort, due mainly to the unique microclimate and position on the shore of the river, which doesn't freeze even in the coldest time of the harsh Finnish winter. This spa tradition is still kept alive today by the Kumpeli spa, however there are many older buildings in Heinola, which reflect its history.

Heinola has a vibrant cultural life, with summer theater, community events, sporting events, and even an international ice sculpture event in the winter.

RIGHT Figure 11: Heinola riverside (City of Heinola, n/d)
LEFT Figure 12: Heinola Municipality Map (The authors)

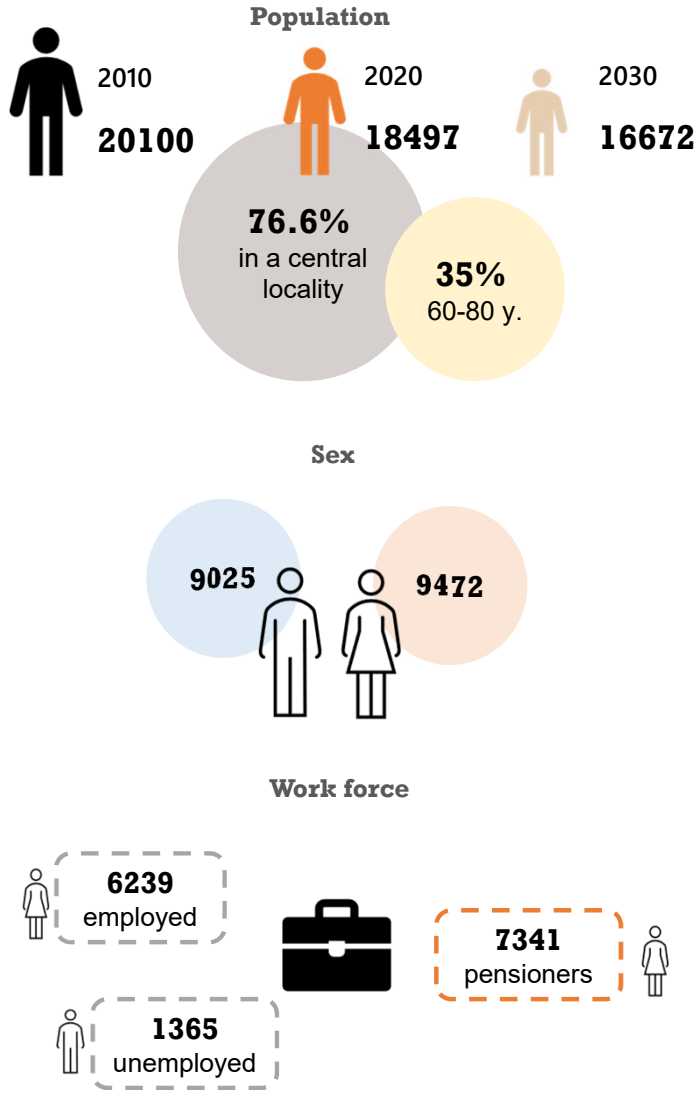
NIEMELÄNRANTA PROFILE

Niemelänranta, is in effect a little bit of nature between the housing areas developed in the 1970's and 1980's, and the river in Heinola city. Already established in the area is a disc-golf course, which is very popular both among locals and visitors, as well as a walking/cycling/skiing path, which meanders along the shoreline.

Visitor accommodation as well as unique sauna experiences are available at the Heinasaari camping area. A special feature of the Niemenänranta area, as also with much of Heinola's forest areas, is the abundance of the blue flowering Hepatica nobilis, which is one of the first natural plants to flower in spring.

ABOVE Figure 13: Kumpeli Spa (Booking, n/d)
LEFT Figure 14: Heinola Harbour (Marinas, n/d)
RIGHT Figure 15: Niemelanranta Map (The authors)

SITE ANALYSIS



The site analysis starts with a broad comprehension about the socio-demographic situation of Heinola. According to the statistics collected by the Finnish Statistics Entity (2022), Heinola has had a progressive reduction in the number of residents. It has currently (2021) around 18500 inhabitants but it is projected for 2030 that the number will be 16600 (Statistics Finland, 2022). From this number, 76% of the population lives in central localities and 35% is between 60 and 80 years old (Statistics Finland, 2022). There is no large difference between man and female population; and, there is a similar quantity of pensioners (7341) than people in the workforce (7604). One interesting fact about this last topic is that there are more female pensioners than male, which awakens various branches of urbanism, including accessible cities, feminist urbanism and care mobility.

Once the data has been collected, it is possible to continue with three types of analysis: urban, climate, and mobility.The first one considers land use, facilities, green and blue areas, and topography. The second one analysed climatic factors (temperature, rain, wind and cloud coverage) and also emissions generated in the area and its source. And, the last analysis focused on mobility in general, speed limits, black dots, bus stops and bike lanes, and the noise created by the highway.

Figure 16: Socio-demographic data.
Source: Own elaboration based on information from Statistics Finland (2022).

Analysing the area, Heinola doesn't have predominant winds from the northwest, it has an average daily temperature below 0 degrees in the winter months (Figure 20). The month with the most rain is July (Figure 18). and several months exceed 50% cloud cover (Figure 19). Talking about emissions, there is a 16% reduction in emissions per person from 2015 to 2019, and in the same period a 24% reduction in total emissions (Figure 21). Most of these emissions are caused by road transport (20.8%) followed by other heating with 17% (Figure 22).

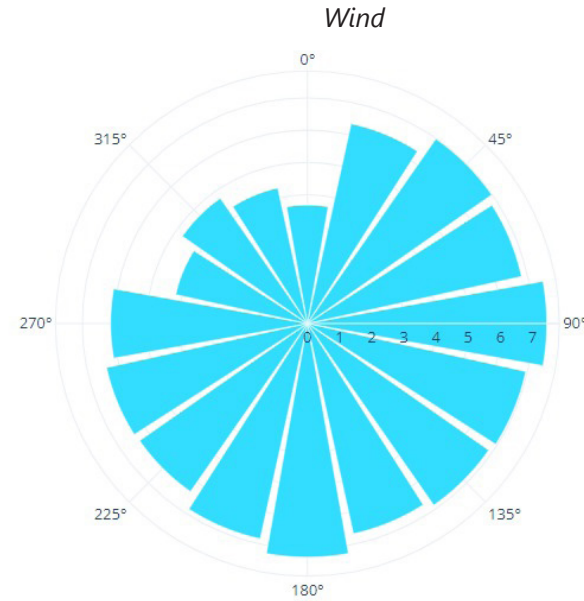


Figure 17: Annual wind rose (CBE Clima Tool, 2021)

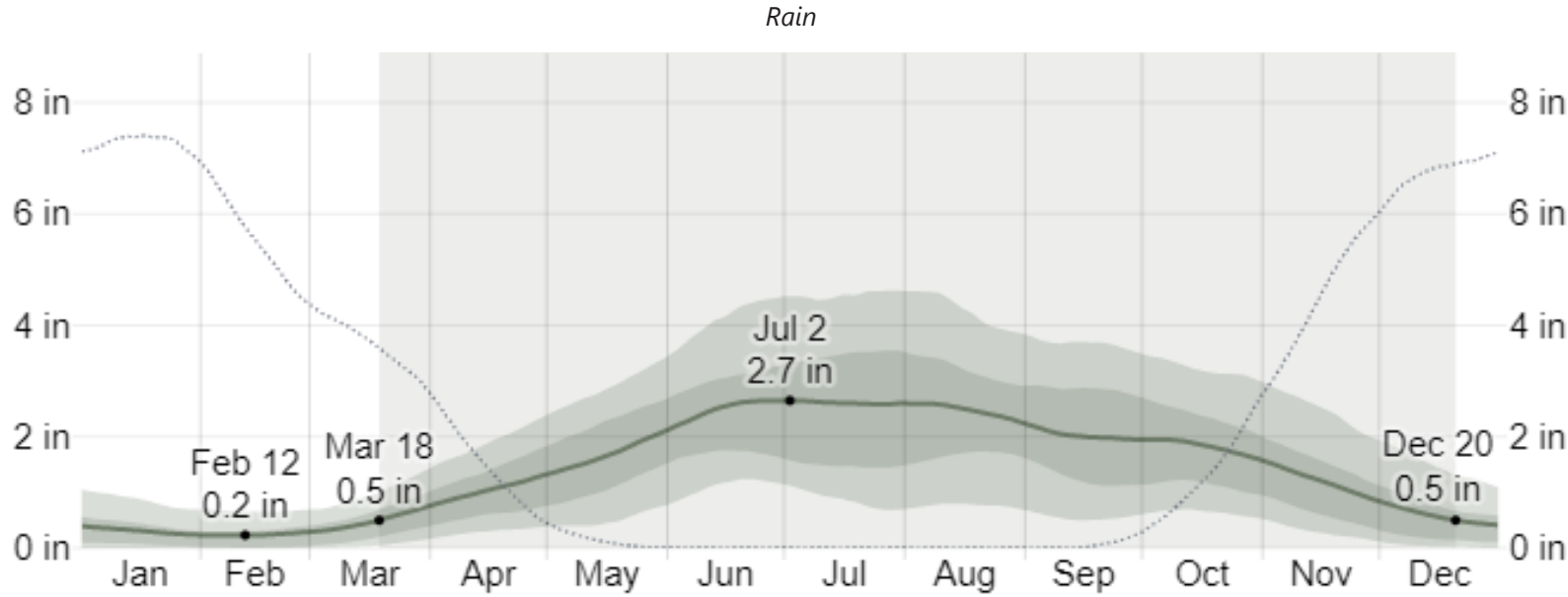
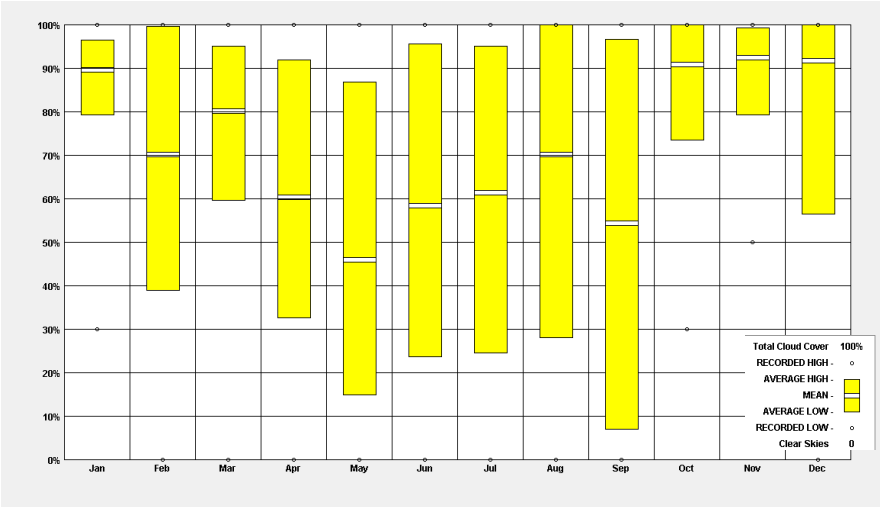
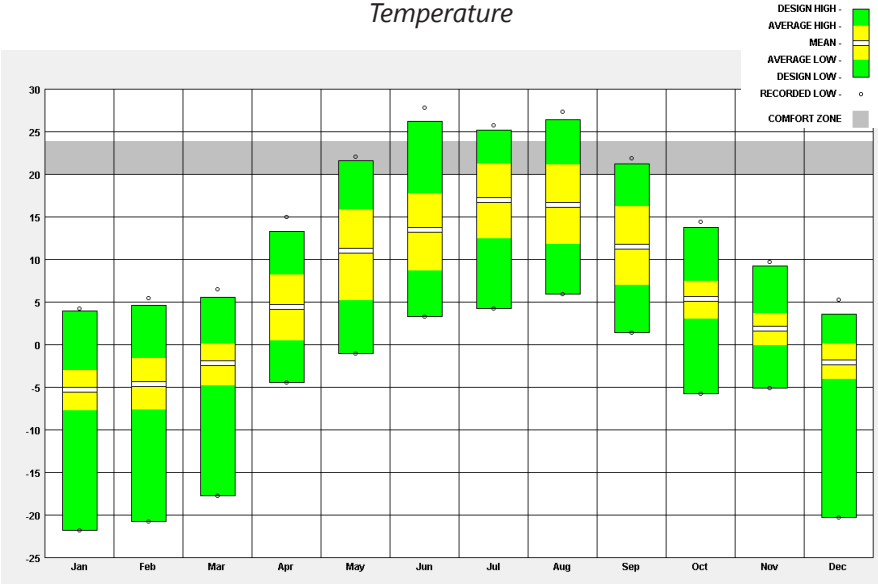


Figure 18: Annual wind rose (Weather Spark, 2021)

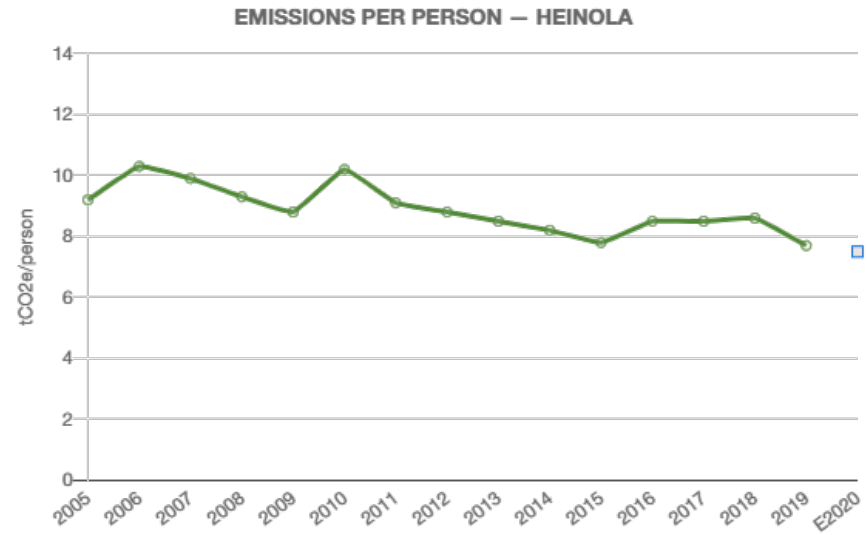
Cloud coverage

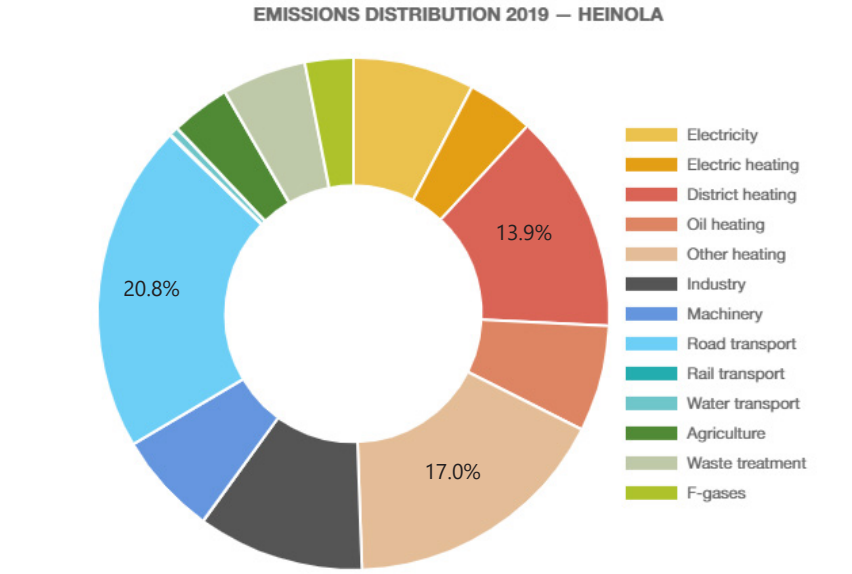


Temperature



ABOVE Figure 19: Cloud coverage (Climate Consultant, 2018)
BELOW Figure 20: Yearly average temperature (Climate Consultant, 2018)





ABOVE Figure 21: Emissions per person in Heinola (SYKE, 2020)
BELOW Figure 22: Emissions distribution 2019 in Heinola (SYKE, 2020)

The general conclusions of the analysis are that the city centre is a cluster of activity and diversity; and that the riverside has a predominance of green areas with tall trees (height) in the north and central area towards the highway. Is specially in this north area that the residential use is predominant and doesn't have an adequate mix of uses or any facility to activate the area.

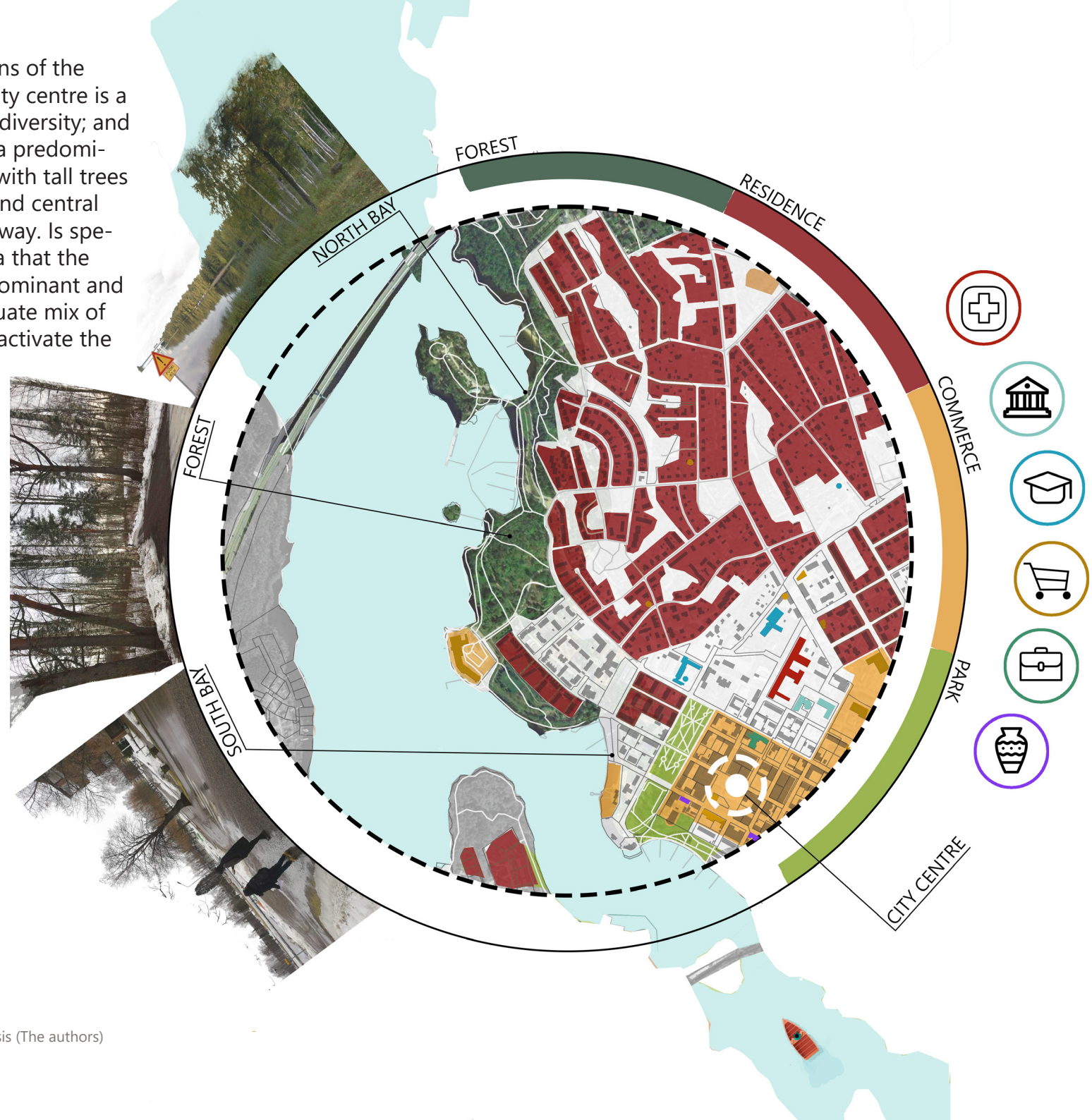


Figure 23: Riverside Urban Analysis (The authors)

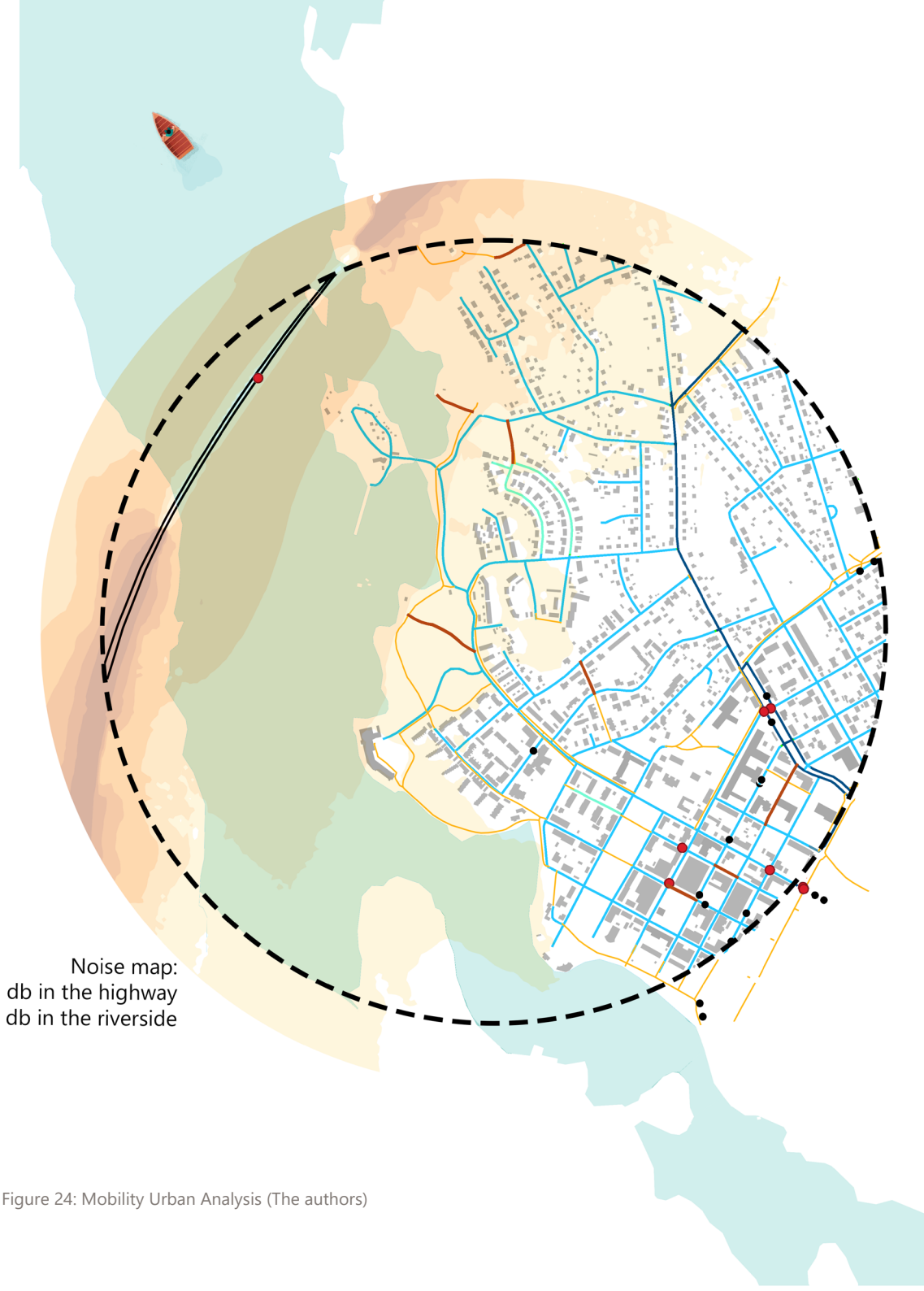


Figure 24: Mobility Urban Analysis (The authors)

Additionally, most of the streets are 40km/h speed and there are few pedestrian streets, which can be improved for an elderly society. The bike lanes are disconnected and do not generate a circuit, which is not the optimum for connectivity inside the city and for the safety of the cyclists. Moreover, the northern area doesn't have bus stops within walking distance, which promotes the use of private cars in a city with a walkable size (mention something about 15 min city).

The map shows the influence of noise on Heinola, where noise levels reach around 50-55 decibels in the southern zone. And 55 to 60 db in the north zone. It is also possible to see the influence of buildings. The recommended level of noise for housing in Finland is 55 decibels during the day, and that is also suggested for the World Health Organisation (cite). However, as perceived during the visit, the noise is not loud or conflictive but it can be annoying in a long exposure for some people.

Source: The authors

LITERATURE REVIEW

CONCEPTUAL TOOLS

Heinola is not the only city in the world experiencing demographic changes, and when that happens, the community's needs also change, and as stated by Sasaki (2015), it is essential for the community that a city understands its evolution to be able to adapt and design according to these changes. With the use of background research it is possible to evaluate and compare the area of Niemelänranta with other case studies and methods, which can be helpful in the process of better understanding the available urban tools.

With the understanding that Heinola is a city shaped by the waterfront and the natural environment, this report presents the case studies of peer cities with Heinola, as well as literature review of urban concepts that can be applied in this area. This kind of method, as stated by Sasaki (2015), offers precedents for creative approaches to park design, activities, and programming.

Heinola is an ageing city, as many other cities in Europe, and this characteristic can be seen as an opportunity, even if it is a challenge for economic and social aspects of a place. While many cities around the world continue to rapidly urbanize, they are also growing old in terms of housing, streets, and communities, and most of the time they fail to respond appropriately to ageing populations, with specific strategies that eliminate any form of discrimination premised on older age, as mentioned by Oliveri (2015). Thus, it is imprescindible for any urban intervention that planners and local policymakers apply tools that can create more enable and accessible cities, especially in those with the demographic characteristics of Heinola. Therefore, the stakeholders of a city intervention must include and prioritise age-diversity, leverage data and technology to better understand needs and desires, and engage public-private partnerships, as stated by Servat (2019), plus the design of enabling cities must guarantee accessibility, proximity and diversity, also incentive the practice of activities through social infrastructures and safe public spaces, together with the offer of affordable and adaptable housing, as stated by Oliveri (2015).

Besides being an ageing city, Heinola has many other characteristics, such as being a city that is shaped by its waterfront and by its forests. The city has developed linearly along the lake, therefore water is an important aspect of the city to be considered in any urban intervention. Because of that, this research also covers technical strategies such as green and blue infrastructure, seeking for strategies that can be applied in the area. As stated by National Geographic (2022), every factor in an ecosystem relies on each other, which means that a good stormwater system affects streams and rivers, as mentioned by Sasaki (2015), and consequently affect the lake, the health of the rains, mountain, wildlife, oceans, and so on. Therefore, the natural stormwater components, such as parks and green areas, must be managed in a way that supports and promotes percolation, runoff retention, infiltration and transpiration. Some strategies proposed by the City of Philadelphia (2014) are the stormwater trees and tree trenches, the stormwater planters, the permeable pavement, the stormwater bump-outs, the green gutters and the stormwater drainage wells, some of them exemplified in Figures 25 to 30.

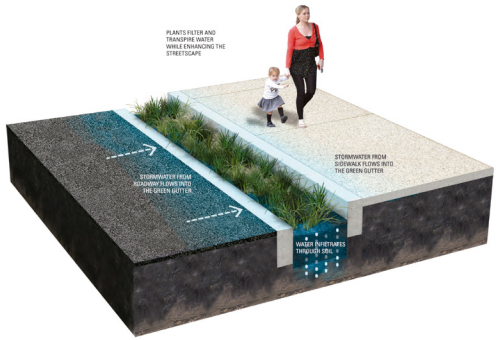


Figure 25: Three-Dimensional View of a Green Gutter from the City of Philadelphia (2014).

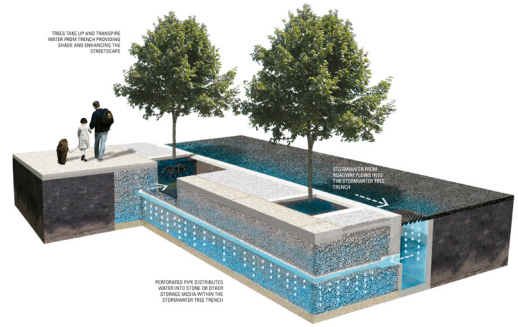


Figure 26: Three-Dimensional View of a Stormwater Tree Trench from the City of Philadelphia (2014).

Figure 27: Three-Dimensional View of a Stormwater Planter from the City of Philadelphia (2014).

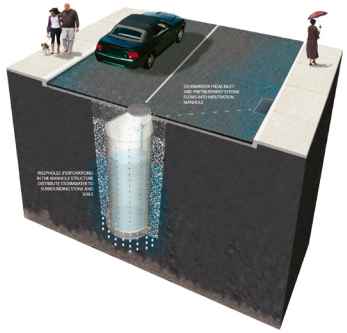


Figure 28: Three-Dimensional View of a Stormwater Drainage Well from the City of Philadelphia (2014).

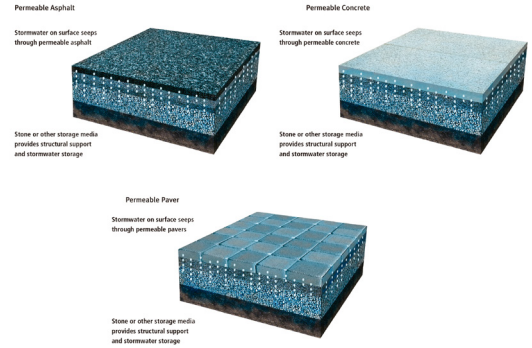


Figure 29: Three-Dimensional View of Permeable Pavement from City of Philadelphia (2014).

Figure 30: Three-Dimensional View of a Stormwater Tree from the City of Philadelphia (2014).

Another important aspect covered by this research is the concept of placemaking, specially the creative placemaking, where the physical and social character of a place are strategically shaped around arts and cultural activities. The creative placemaking, as stated by Markusen (2010), animates public and private spaces, rejuvenates structures and streetscapes, improves local business viability and public safety, and brings diverse people together. Markusen (2010) mentions that investors are currently looking for places with economic and cultural activity and animation, instead of looking only at physical aspects, because places also work as meeting points where people, ideas and organisations come together. Some case studies presented in the Creative Placemaking Report (2010) show that there are challenges to be faced in a placemaking initiative, as illustrated in Figure 31, and recognizing these challenges is essential to the decision-making policies. Markusen (2010) identifies the following components for a successful placemaking initiative: "creative initiators, designing around distinctiveness, mobilising public will, garnering private sector support, securing arts community engagement and building partnerships."

All these concepts working together can create a city for people. And as stated by Gehl (2010), the public spaces of a city must be attractive and inviting for people. Gehl (2010) mentions that planners should not only provide spaces for walking, cycling and other means of transportation, but it is indispensable for public spaces to offer a chance of socialisation for the community. The public space should be alive and full of different groups of people.

This concept is based on a World Health Organization network designed to create safe spaces that promote health and a high quality of life for elderly residents. The framework (Figure 32) is based on the integration of various general aspects such as transportation, housing, social participation, employment, communication/information, and public spaces, as well as aspects that primarily benefit elderly groups such as respect and inclusion, community support, and health services (ARUP, 2015).

As a result, in order to create an age-friendly city, safe, accessible spaces that foster relationships and community experiences must be created. In such a way that it creates a safe and dependable network for the enjoyment and personal growth of residents. As a result, the built environment, society, mobility, and the digital environment are considered as the key axes (Figure 32). The latter is important for the development of new skills and the potential to expand community, educational, and employment networks.

Figure 31: Challenges for Creative Placemaking from Creative Placemaking (2010).

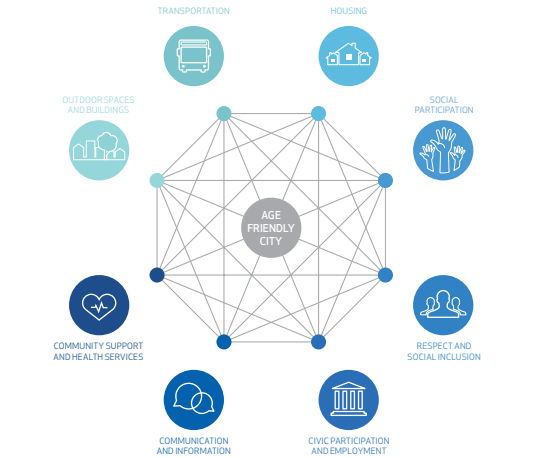


Figure 32: Age friendly city framework and lenses (OLIVERI, et.al., 2015).

BENCHMARKING

The benchmarking aimed to provide insights for the development of the masterplan proposal presented in this report. Therefore, it is possible to evaluate which can be replicated or adapted to the city of Heinola. The case studies chosen for this benchmarking were all located in waterfront of cities around the world; they are:

- Toronto Central Waterfront
- Fort Point 100 Acres Open Space
- Burlington Parks, Recreation & Waterfront Master Plan; and,
- Jätkäsaari

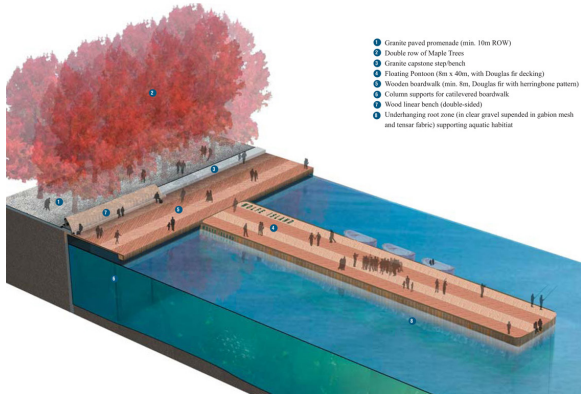
The goal was to have different profiles of cities, with different climates and characteristics, but that could somehow relate to the area of study of this report. Then, the process followed a pattern of identifying the key points of each proposal that could be seen as a positive approach, as showed in the graphs presented below.

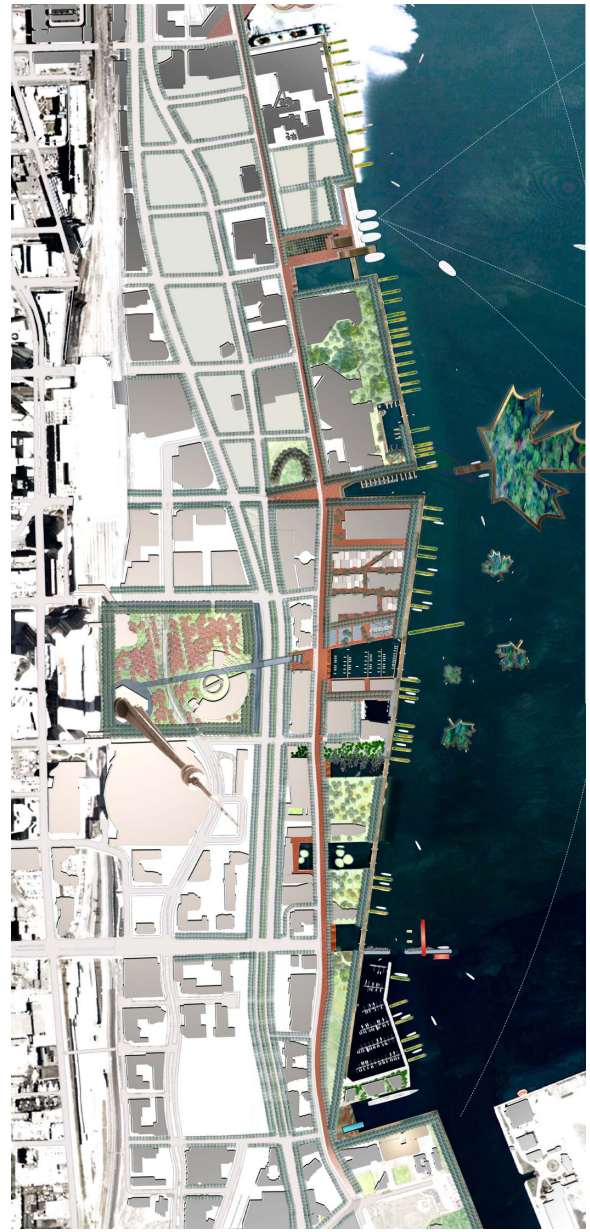
Key points:

- Spatial structure
- Mobility (transport & traffic)
- Green infrastructure & biodiversity
- Stormwater management
- Public space/activities
- Sustainable way of building

Toronto Central Waterfront

West 8 & DTAH
Toronto, Canada
2006
2011
Area: 3.5 km length





Figures 33-35: Toronto Central Waterfront Masterplan and images (WEST 8 & DTAH, 2011)

Strategies applicable to the project:

Create a "multiple waterfront": pedestrians + activities + floating areas.

Reduction of four lanes of traffic + creation of a green corridor, pedestrian zone and bike lanes.

Pedestrian spaces on the water with sustainable construction.

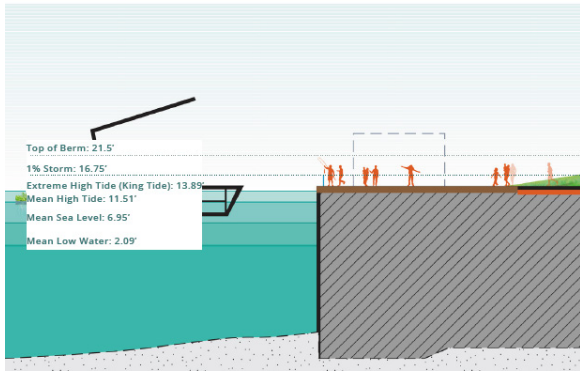
Structure of the cantilevered boardwalk + Under hanging root zones

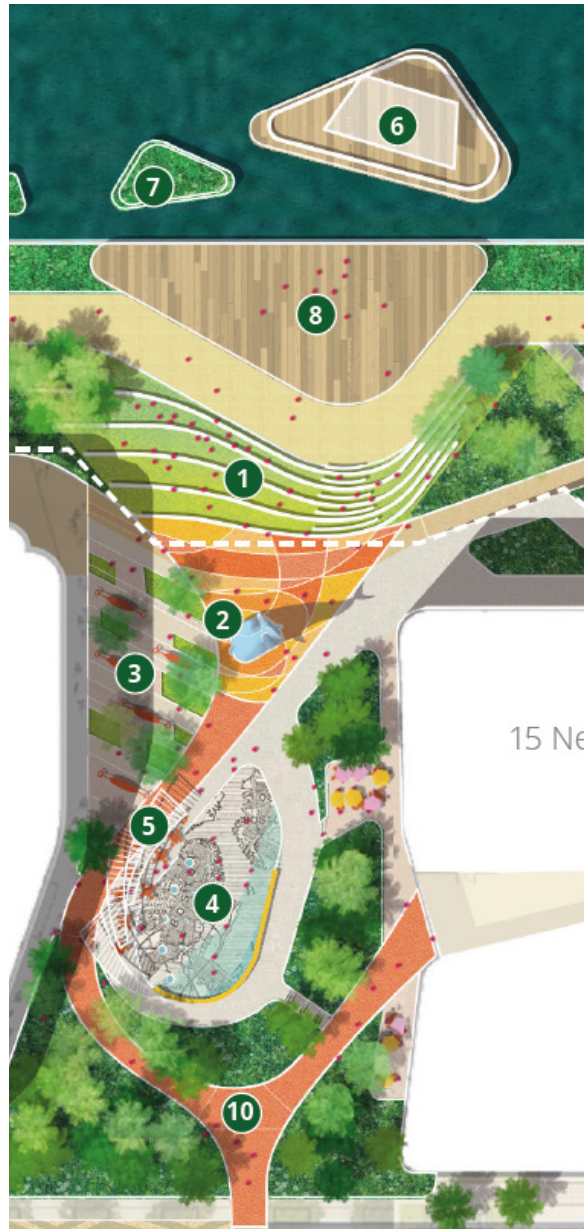
Underground processes for run-off water of bike lanes and promenade. Green axes as reservoir for water.

Timber wavedecks as part of the stormwater management system.

Fort Point 100 Acres Open Space

Boston Planning & Development Agency
Boston, US
2020 (not implemented)
Area: 36500 m^2





Figures 36-38: Fort Point 100 Acres Masterplan and images (Sasaki, 2020)

Strategies applicable to the project:

Concept of open spaces connected by paths with activities as nodes.

No cars areas. Two types of pedestrian circulation (inside the project and in surrounding areas). Also connection through cycle paths.

Shading strategies

The topographic difference protects the area from future flooding while also providing views of the canal and space for an amphitheater.

Coastal flooding strategies

Burlington Parks, Recreation & Waterfront Master Plan

SASAKI
Burlington, Vermont, USA
2015 (not implemented)

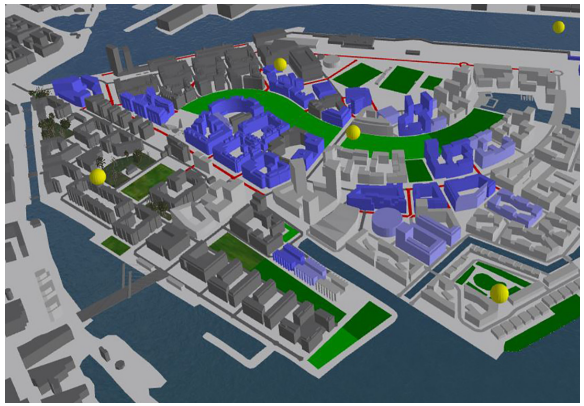
Figures 39-41: Burlington Parks Masterplan and images (Sasaki, 2015)

Strategies applicable to the project:

- Implementation of a green infrastructure network, connecting natural lands, working landscapes and open spaces.
- Use of greenways, trees, vegetation, floodpain areas park and environmental education.
- Integrated waterfront path for active mobility with the parks and the city.
- Improvement of cycling infrastrucure and introduction of strategically placed pause places
- Improvement of access to amenities, and creation of regional connections.
- Use of participatory processes and consideration of social and cultural aspects.
- Good stormwater management techniques, divided into three key principles: quality, quantity and runoff reduction.

Jätkäsaari

Ramboll
Helsinki, Finlandia
2009- still under construction
Estimated 20,000 residents



Figures 39-41: Jätkäsaari Masterplan and images (Ramboll, 2020)

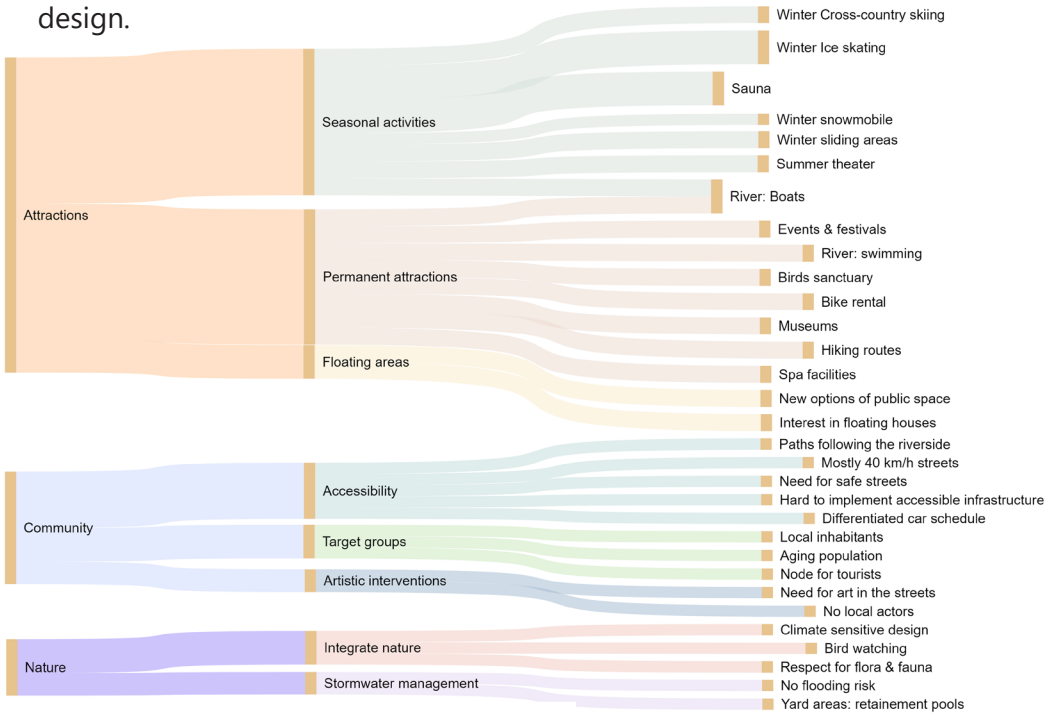
Strategies applicable to the project:

- Large award winning park through the center of the area.
- Designed to be car unfriendly. Purpose built walking and cycling routes.
- Easy access to public transport – Helsinki tram network.
- Careful planning of storm water control – use of infiltration systems.
- A unique vacuum based garbage collection system.
- All buildings to be multi-purpose and easily converted to different usage.
- Building materials have to might high criteria and be as highly re-cylable as possible.
- All necesary services located within walking distance – schools, library, shops, retaurants, health care, religious centers, sports facilities (built mostly on the landfill area).

SUMMARY OF ANALYSIS

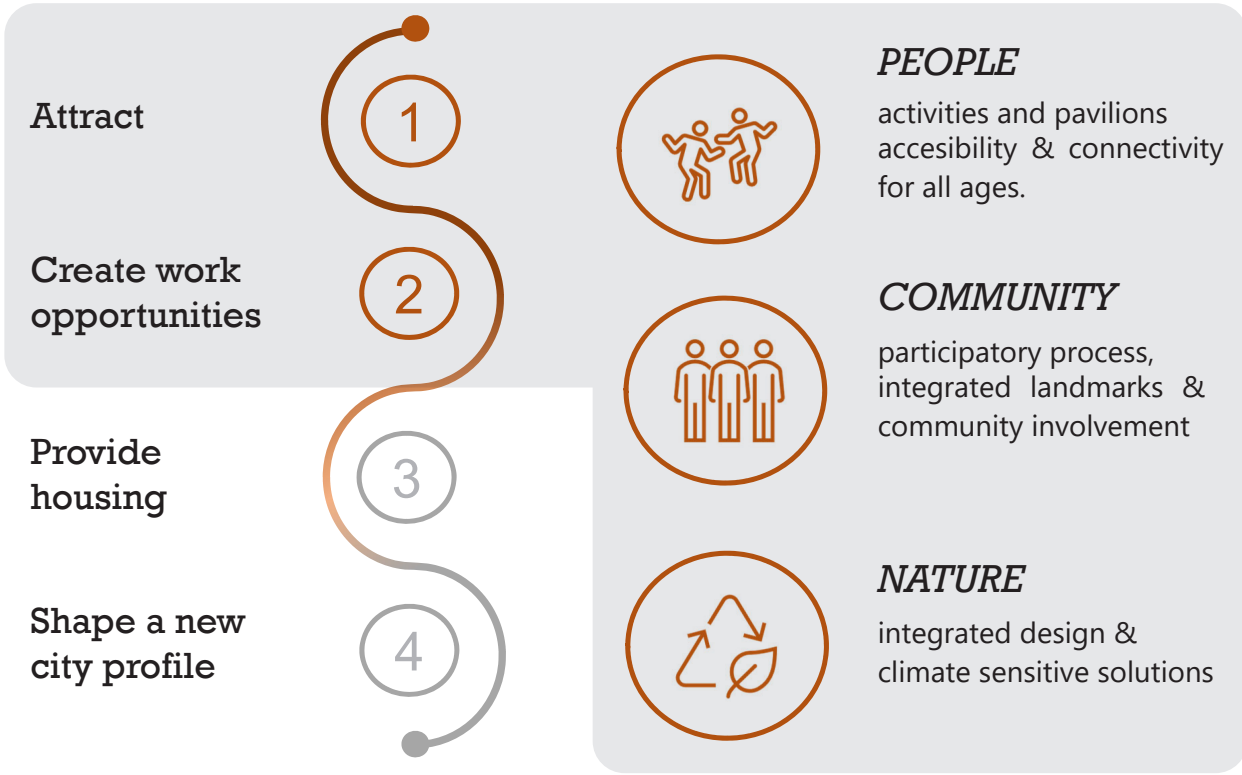
As part of the analysis, a brainstorming exercise was conducted using the digital platform MIRO, which can be seen in Figure 43 in a synthesised form and organized into axes. In general, it outlined findings from the site visit and meetings with officials. Based on the site analysis and statistical information, 3 essential needs were found at the site: activities, accessibility and social mixture (Figure 42).

Figure 44 also provides a summary of the waterfront potential and the main features to be included or solved in the design.



ABOVE Figure 42: Venn Diagram with needs (The Authors)
LEFT Figure 43: Sankey Diagram with brainstorm ideas from Collaborative Board in Miro (The Authors)
RIGHT Figure 44: Summary Map (The Authors)

PROPOSAL TIMELINE AND PRINCIPLES

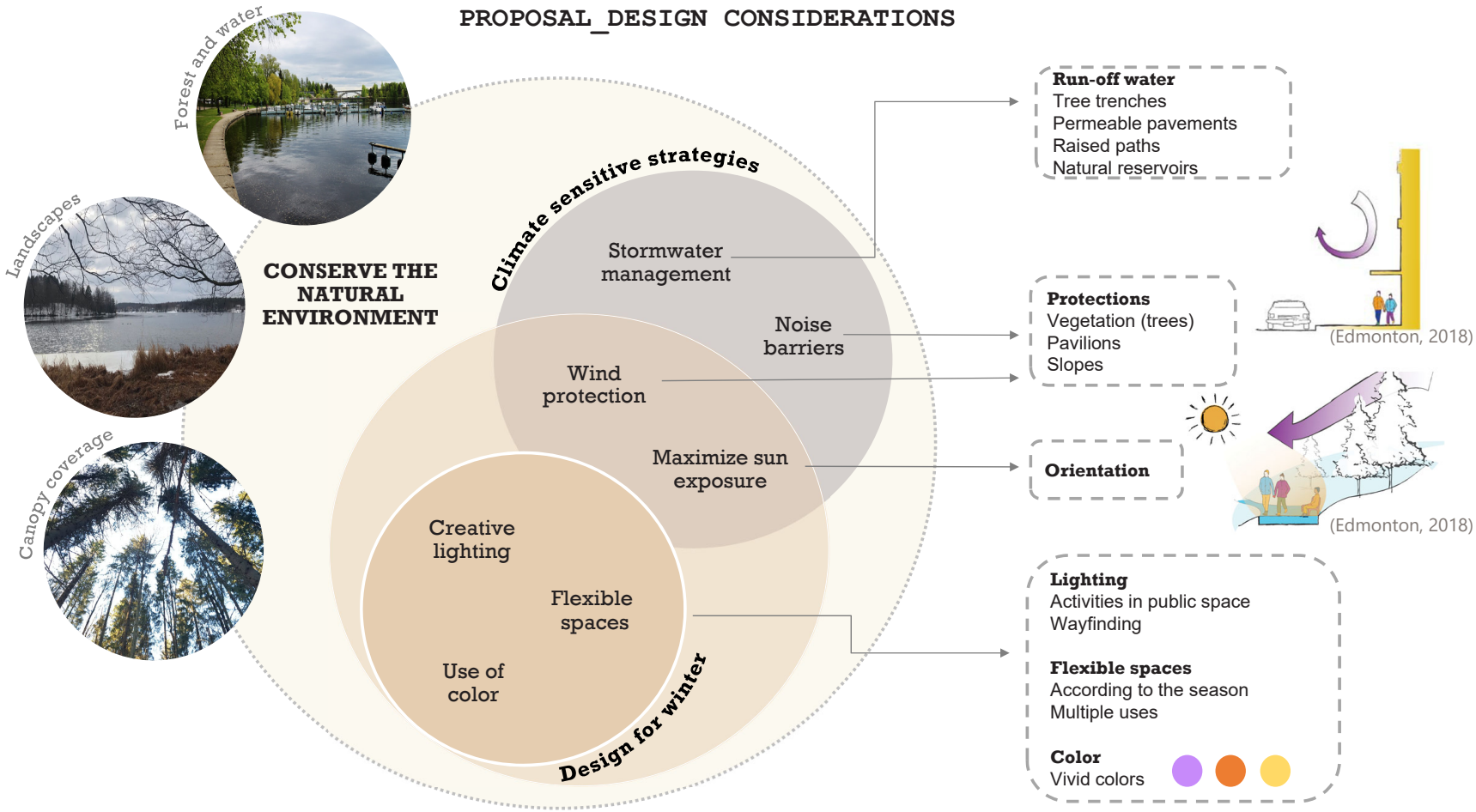


First, it is necessary to *attract people,* especially groups of young people and tourists; without creating disruption for existing residents. From this, more e*mployment opportunities* will be generated. Regarding *housing*, there are existing houses that can be reused in a short term; however, for a long term it is suggested to create a housing project with commercial areas that could be interesting for investors and generate income to finance the project. With all these considerations, it is expected to have a *new city profile*, more attractive and with more people.

The principles are based on the site analysis and the needs of the sector, being: ***People, Community and Nature.*** The first one refers to attracting people by generating new activities and multipurpose pavilions. In addition to promoting accessibility for all ages and connectivity to points of interest.

Also, the work with the community must be continuous, including participatory processes to plan different areas of the project as community landmarks that reinforce the sense of belonging.

And finally, consider nature as a fundamental part of the project, respecting and conserving it, as well as including climate sensitive solutions. At the end, the aim is to *create an experience* of living and staying in Heinola.



The design was based on the following general considerations:

Conserve the Natural Enviroment:
This is the centre of the design and the umbrella of the following considerations. It includes the forests, lakes, rivers, landscapes and canopy coverage.

Climate Sensitive Strategies:
Such as stormwater management, especially the treatment of run-off water that includes: tree trenches, permeable pavements, raised paths, and natural reservoirs. For noise and wind protection, it was considered the creation of barriers to block or redirect the wind from the east. These barriers can be: pavilions, roofs, changes in the topography as slopes or vegetation (trees).

The design will also take into account the maximum exposure to sunlight with the orientation of buildings and pavilions.

Winter Desing:
This category includes specific strategies to revitalise public spaces in winter seasons with high cloud cover and low sunlight. For example: the use of creative lighting with activities in the public space and wayfinding; flexible public spaces that can adapt to different uses and seasons; and the use of a vivid colour palette to contrast the white of winter (Edmonton, 2018).

Figure 45: Design Considerations (Own elaboration)

PROPOSAL DEVELOPMENT

Introduction:

Heinola is a charming city that, as several other cities in Finland, has lost part of its vibrancy by the migration of part of its population in search of opportunities. The city has the potential for becoming a perfect destination for recreational activities because of its connectivity with the surroundings and unique natural environment, that provides good air quality, marvellous fauna and flora, and breathtaking landscapes. Nevertheless, these overlooked opportunities lack a connection for unleashing their potential.

For this reason, the project ***Waterfront FLOW Heinola*** was created.

This project aims to attract people by creating and connecting different opportunities for recreational, sports, educational, and leisure activities. The proposal is based on the analysis of urban and social characteristics, where nature, community, and people are considered the central topics. The analysis concluded that connecting places will boost specific points of the city that can address different needs for people living in and visiting Heinola. So, the core proposal is to connect the areas of the riverside in Heinola by a continuous path while creating accessible public spaces and interesting landmarks. This master plan is divided into three sections, each one according to its own characteristics: city centre, forest and water.

In the long run, we expect that the people attracted to Heinola can start to consider living and moving there. For this reason, another goal is to integrate housing that can host these new residents and visitors. So, in a timeframe we speak that first Heinola needs to become an attractive tourist destination, in order to generate this appealing area for moving and settling in. Also, the project seeks the cooperation of different stakeholders like: academia, community, private and public sector that can synergistically work to create a future Heinola.

FLOW

The masterplan was developed following the strategies that were created after the literature reviews and the analysis. Therefore, the initial idea was to create a continuous path, integrated with the water and with nature, distributing landmarks along it to create the full experience in Heinola, with views, nature and interaction. Plus, to complete the strategy to attract people, this report proposes for the city to host annual activities, such as music festivals or sports events, the goal is for these events to attract people from different cities, incentivizing them to look to Heinola as a potential home. Together with that, strategies to connect the waterfront with the rest of Heinola and with the surrounding cities must be developed with the implementation of the masterplan.

The continuous pedestrian path and the cyclepath, indicated in white and red in the Figure 46, are the core of the proposal. To create the path, the existing situation and topography of the area were considered, and that is why there are different strategies along the way. For example, in the beginning of the path, there is a flatter area, so the proposal presents the idea of some decks going inside the water, whereas in other spots there is the need of working with elevated decks, as the part located in front of the forest area. To summarise, the existing path was used to guide the proposal, leading to a new design and the creation of pause places, landmarks and additional paths.

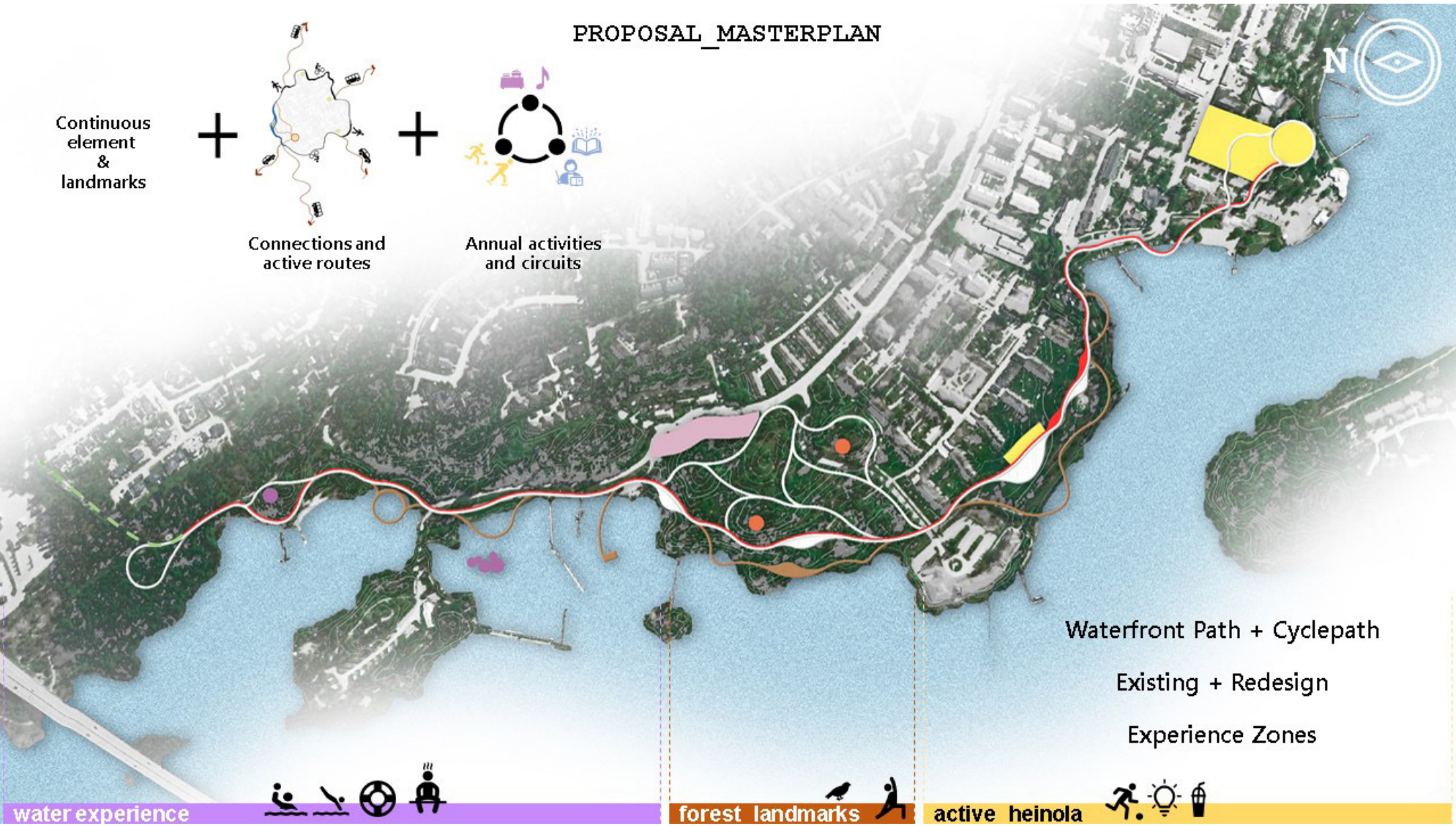


Figure 46: Masterplan

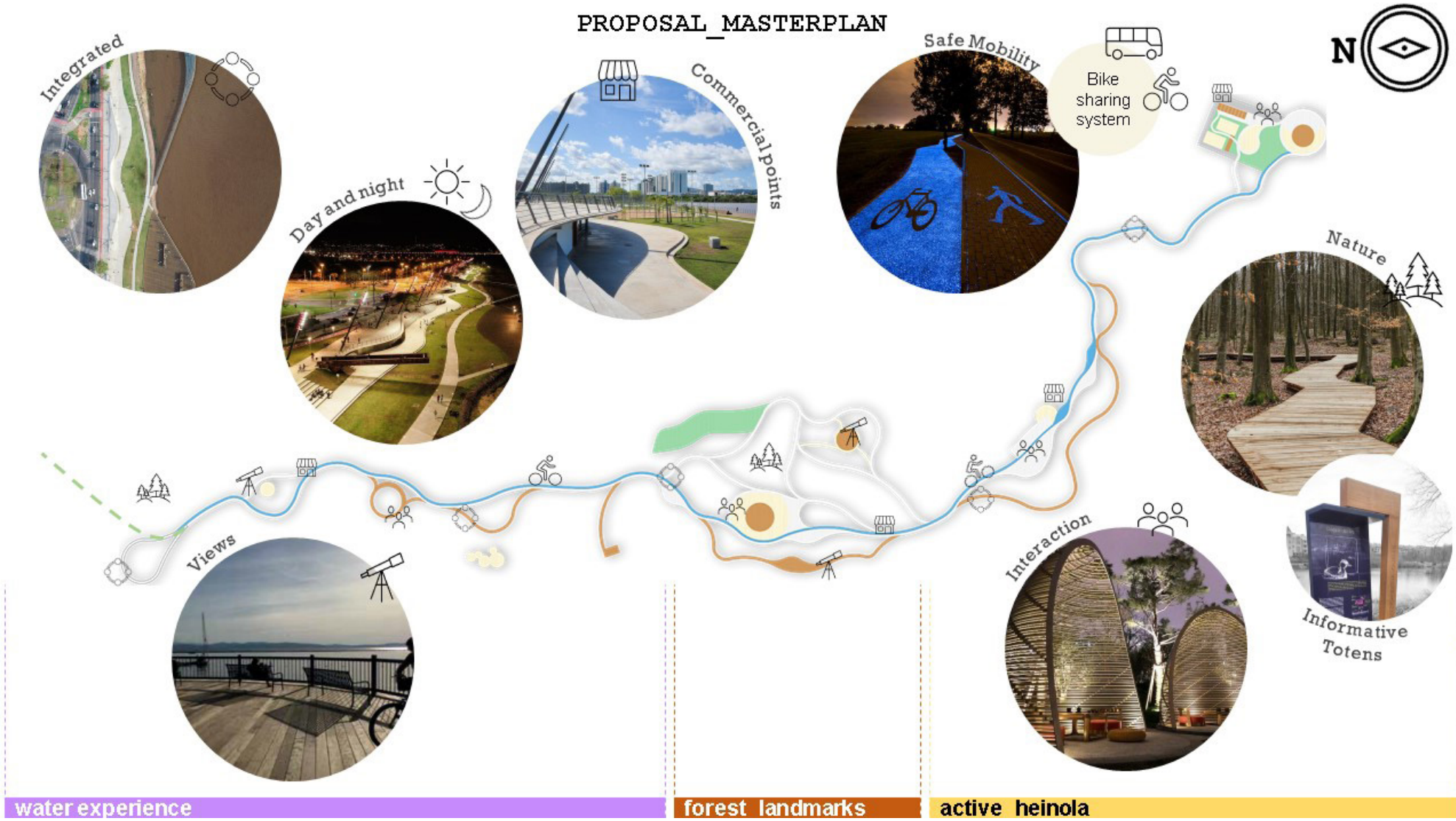


Figure 47: Strategies for the waterfront

Along the waterfront, the path was sectorized in three different experience zones: the active heinola, the forest landmarks, and the water experience, and each zone can be identified by a colour that would be present in elements along the way, giving identity to the waterfront. The path starts in the active Heinola zone, with the proposal of a market square, and ends with the water experience zone, connecting to an existing path in the forest. Some of the strategies proposed along the way are:

Integrated path: a path that goes along all the waterfront, integrating the city with the water and the forest.

Day and night: use of lightning strategies to create a day and night experience.

Commercial points: commercial points along the way to attract investors that can rent the spaces for cafes, restaurantes, retail, and so on.

Safe mobility: use of light and accessible paths to increase safety for the community, specially taking in consideration the high number of women and elderly people.

Bike sharing points: places where bikes can be rented and people can easily access the main road where the current bus line is.

Views: use of the topography to create views of the lake and the forest.

Meeting points: places where people can meet, sit together and interact with each other.

Trails and informative: creation of informative trails along the way, with totens that explain the fauna and flora of the area.

The path was divided into three zones with different activities to create a full experience of the waterfront, as explained below.

EXPERIENCE ZONES

Figure 48: Map of the Active Heinola zone

ACTIVE HEINOLA

The Active Heinola zone is an area for activities, mixed use, interaction, recreation, and work with the community. The strategies for this zone, as illustrated in the Figure 48, are the creation of a market square, where the existing sports field can be restaurated together with all the square, into a creative and colourful design, also integrating with a pedestrian street aside, an open gym, a market for commerce, and a planetarium. Along the way it is possible to identify the main path, in white, and the cyclepath, in blue, where the size of the path can be adapted to the existing terrain. Other strategies for this area are the pause places and meeting points for interaction, a multiseason slope that can be used for different activities, and a flexible open space that can be adapted to several activities, like an ice-rink, concerts or even a bonfire festival.

In Figure 48 it is possible to notice the idea for the lighting experience in this area, using urban furniture and lighting design, creating a place where people can come to have fun, take pictures and interact.

FOREST LANDMARK

The Forest Landmark zone is an area for integration with nature, for peaceful activities, but also for interaction, as illustrated in Figure 49. The main path and the cyclepath are also included in this zone, with a paralel elevated deck for walking, viewings of the lake and also activities, like yoga. The area of the forest is the zone along the path with more suitability to the construction of some buildings, but since the proposal aims to protect the nature, the buildings in the area would occupy a small portion of the land, becoming landmarks that are integrated with nature and the image of the place, without deforestation. The first building is a multi use pavilion, for the annual events mentioned in this report, but also with some smaller spaces inside where there could be exhibitions, learning classrooms, a cafe and a restaurant, and this would allow the building to have people all the time, and not only during events.

There is also the proposal of a place for a mixed-use development, with commercial on the ground floor and housing in the upper floors. The idea is to have around 10 floors, making the development interesting to investors and also allowing to increase the density of the place without too much deforestation. It is important to point that the development should follow a climate sensitive design, taking in consideration factor like sun, wind, shading, permeability and etc, the design should work with the wind and the orientation without creating too much shadow in the forest or in the streets, it could also work as a protection from the wind, for example. There is also the proposal of accommodation options spread and integrated with the forest, creating a full experience with nature. The last building is an observatory, which can be considered a landmark but also a place for interaction of the community.

WATER EXPERIENCE

The Water Experience zone is more focused on water activities, as illustrated in Figure 49. For that, the proposal includes the redesign of one of the piers to include a sauna in the end, a circular deck to create a natural pool, and water platforms that could work for events, walking, and also interaction. where you could have events, or only for walking and interaction, and they would be accessible by boats. Here there is a higher point so we propose a landmark that can work as an observatory, together with a caffe or a restaurant and we also think that the same accommodation idea for the forest could have an option or two in this area here.

The three zones together create a public space which provides a full experience of the Heinola waterfront, but also include some profitable options like the housing, the pavilion, the accommodation and the cafes.

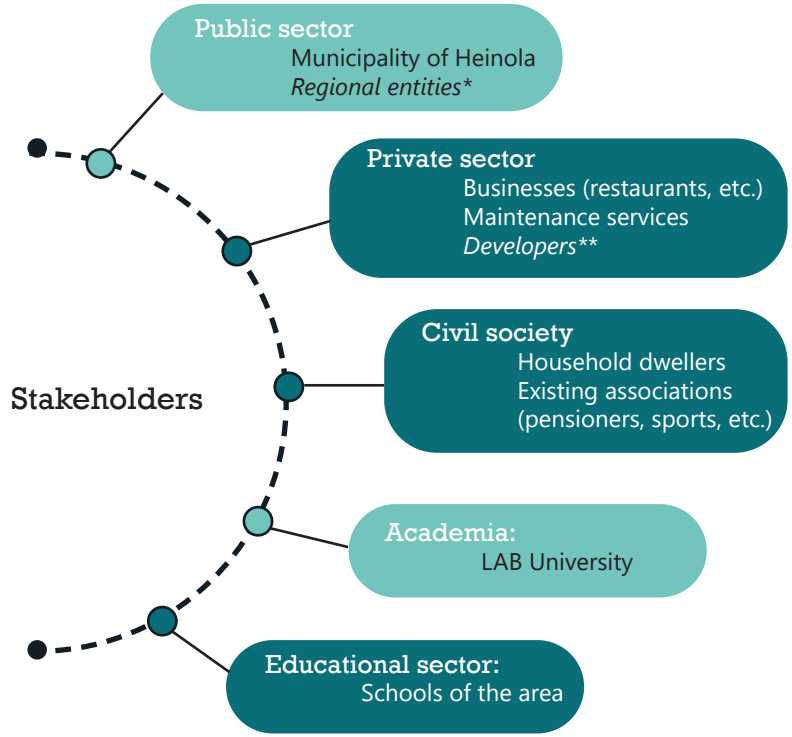
Figure 49: Map of the Forest Landmark and Water Experience zones

Figure 50: Image of the proposed floating areas and paths. (The authors)

IMPLEMENTATION

Figure 51: A desirable Heinola waterfront (The Authors)

Stakeholders & Participatory process

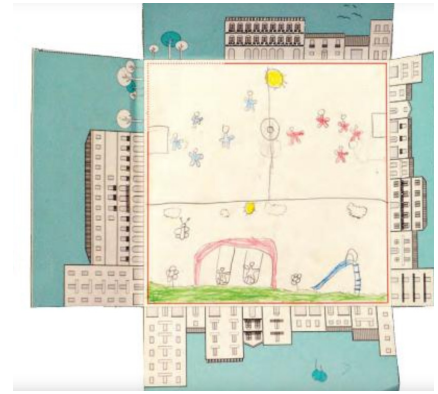


Promoters

Beneficiaries involved in the participatory process

* Regional entities take part of the process but they are not the principal promoter.
** Developers are part of the private sector but are considered as sponsors.

The participatory process should be continuous throughout all stages of the project and thus be recognised as a transversal action. To begin, surveys/interviews are conducted to identify key stakeholders who are not already on the list. It is recommended that the final list of stakeholders be divided into interest groups (age, area of residence, or activity). It is suggested to create a *collaborative experience map* in order to obtain detailed information about the dynamics of the people who live, circulate, or use the area. It is possible to work with the kids on their "*dream city,*" where they can draw what they think is fun in public spaces. In later stages, it is recommended to realize fieldtrips with cycling or hiking groups to validate the routes. Finally, to enjoy public life, the proposal suggests spaces where residents can pick their own uses or activities. For example, exhibitions, workshops, urban gardens, etc.



Figures 52, 53: References for citizen participation: Collaborative map(left), Dream City for kids (right). (Cuenca RED, 2016).

Recommendations for project implementation

	ACTION	ACTOR
Phase 1	Create partnership and seek for investors	Municipality of Heinola
Phase 2	Community engagement (first instance) + Design of executive project Create a set of indicators (public space, social, environmental, traffic, etc.)	Municipality of Heinola + LAB
Phase 3	Create construction phases (Paths & cyclepath + complementary elements like lighting + landmarks) Evaluate the resources Implementation of the main path and cyclepath	Municipality of Heinola
Phase 4	Community engagement (tactical urbanism) Evaluation/feedbacks of this phase (based on the indicators) Implementation of landmarks and complementary elements by zone	Municipality of Heinola + Developers + LAB
Phase 5	Community engagement (tactical urbanism) Evaluation/feedbacks of this phase (based on the indicators)	Municipality of Heinola +Public-private developments + LAB
Phase 6	Maintenance of the project(long term)	Municipality of Heinola + developers

CONCLUSION

The challenges currently faced by the city of Heinola, such as population decline, ageing community, limited number of workforce and scarce of big investors in the area, were considered guidelines for the development of the proposal, because Heinola also has a unique natural environment and a good connectivity with the surroundings, showing potential to shape itself into a new city profile, full of life and activities, keeping its identity and history.

The proposal was developed based on three axes: people, community and nature. To analyse the masterplan and verify its efficiency, it is possible to point the strategies and goals achieved in each axis with the proposal. Based on PEOPLE, the proposal presented accessible paths and places, flexible spaces with different uses and an expansion on the active mobility network. To reach the COMMUNITY axis, the proposal was able to develop people's skills with the integrated landmarks, and to engage the community, proposing a collaborative experience map. For NATURE, the proposal presented the integration of the lake with the city, the enhancement of natural landscape, and multiseason activities, which shows the respect for the natural environment,

The first element of the timeline of this proposal, represented by the word ATTRACT, exemplifies well what this masterplan is all about. With this proposal, the existing community of Heinola will have a new place to interact and be active, which will consequently transform the waterfront into an appealing place for visitors. With a well executed masterplan, engaging community and taking in consideration the feedback given by the people, the proposal has the potential to invite the visitor to consider moving to Heinola and becoming a part of its community.

Figure 54: Image of the proposed floating paths.

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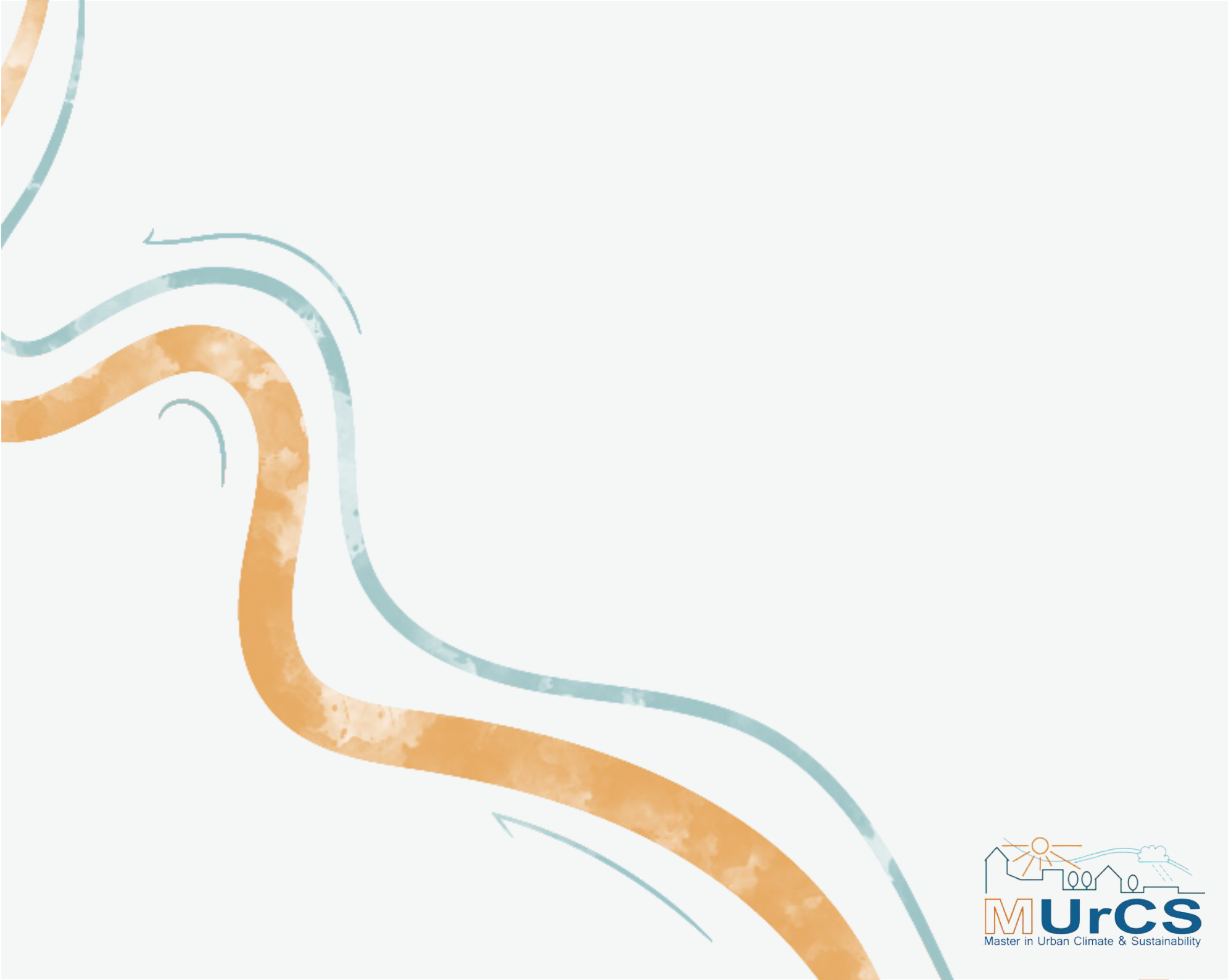
GROUP WORK

This report, and the associated presentation, were collectively prepared by the three components of the team: Bianca Borelli, Elisa Bernal and Andi Atkinson. The designated tasks in the site analysis, literature review, design proposal and final report format were completed in full. The specific activities of each member are as follows: the whole team worked in collecting the information for the Heinola and Niemelänranta analysis. This includes literature research, brainstorming, open data search and validation, and notes of lectures, fieldtrip and meetings with officials. All the information collectively gathered resulted in different diagrams that reflect the needs and potential of the sector.

The literature review was in charge of Bianca Borelli and Elisa Bernal, which included the study of different approaches to climate-sensitive solutions, placemaking and the age-friendly city. Within this point, the entire team completed the benchmarking section, contributing various case studies and listing the most appropriate strategies to use in Heinola.

With all this information it was possible to make the proposal, including its conceptual design, strategies, timeline and basic principles. This task was accomplished by Bianca Borelli and Elisa Bernal. The graphics of the proposal were made by Bianca Borelli; while the diagrams of the considerations and the renders were made by Elisa Bernal. The identification of stakeholders, the participatory component and recommendations for implementation were carried out by Elisa Bernal and Bianca Borelli. And, the structure and design of the report was carried out by Elisa Bernal.

Finally, this proposal integrates the knowledge of different backgrounds and experiences of each member of the team that proactively contributed to the development of the report.



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